Downloaded from orbit.dtu.dk on: Jul 09, 2018

Technical University of Denmark

Major differences between human atopic dermatitis and murine models as determined by global transcriptomic profiling

Ewald, David Adrian; Noda, Shinji; Oliva, Margeaux; Litman, Thomas; Nakajima, Saeko; Li, Xuan; Xu, Hui; Scheipers, Peter; Svitacheva, Naila; Labuda, Tord; Krueger, James G.; Suárez-Fariñas, Mayte; Kabashima, Kenji; Guttman-Yassky, Emma

Published in:
Journal of Allergy and Clinical Immunology

Link to article, DOI:
10.1016/j.jaci.2016.08.029

Publication date:
2017

Document Version
Peer reviewed version

Link back to DTU Orbit

Citation (APA):
Ewald, D. A., Noda, S., Oliva, M., Litman, T., Nakajima, S., Li, X., ... Guttman-Yassky, E. (2017). Major differences between human atopic dermatitis and murine models as determined by global transcriptomic profiling. Journal of Allergy and Clinical Immunology, 139(2), 562-571. DOI: 10.1016/j.jaci.2016.08.029

DTU Library
Technical Information Center of Denmark

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

ACCEPTED MANUSCRIPT

Major differences between human atopic dermatitis and murine models as determined by global transcriptomic profiling

David A. Ewald MSc,[1,2,3]* Shinji Noda MD PhD,[1]* Margeaux Oliva BA,[4] Thomas Litman PhD,[2,5] Saeko Nakajima MD PhD,[6] Xuan Li MSc,[1] Hui Xu MSc,[4] Peter Scheipers PhD,[2] Naila Svitacheva PhD,[7] Tord Labuda PhD,[8] James G. Krueger MD PhD,[1] Mayte Suárez-Fariñas PhD,[1,9] Kenji Kabashima MD PhD,[6,10]** Emma Guttman-Yassky MD PhD[1,4]**

*/** Equal contribution

[1]Laboratory for Investigative Dermatology, The Rockefeller University, NY, USA

[2]Exploratory Biology, LEO Pharma A/S, Ballerup, Denmark

[3]Regulatory Genomics, Integrative Systems Biology, Center for Biological Sequence Analysis, Department of Systems Biology, Technical University of Denmark, Kgs. Lyngby, Denmark

[4]Department of Dermatology and the Laboratory for Inflammatory Skin Diseases, Icahn School of Medicine at Mount Sinai, New York, NY, USA

[5]Department of Immunology and Microbiology, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark

[6]Department of Dermatology, Kyoto University Graduate School of Medicine, Kyoto, Japan

[7]In Vivo Biology, LEO Pharma A/S, Ballerup, Denmark

[8]Translational Medicine, LEO Pharma A/S, Ballerup, Denmark

[9]Department of Dermatology, and the Departments of Population Health Science and Policy, and the Icahn Institute of Genomics and Multiscale Biology, Icahn School of Medicine at Mount Sinai, New York, NY

[10]Singapore Immunology Network (SIgN) and Institute of Medical Biology, Agency for Science, Technology and Research (A*STAR), Biopolis, Singapore

Corresponding Author:

Emma Guttman-Yassky, MD PhD

Department of Dermatology, Icahn School of Medicine at Mount Sinai Medical Center, 5 E. 98th Street, New York, NY 10029

Email: Emma.Guttman@mountsinai.org

Telephone: 212-241-9728/3288; Fax: 212-876-8961

Abstract Word Count: 245 words

Manuscript Word Count: 3500 words

Funding: This was supported by a research grant (EGY) from LEO Pharma A/S. SN, MSF, and JGK were supported by grant number 5UL1RR024143-02 from the National Center for Research Resources (NCRR), a component of the NIH, and NIH Roadmap for Medical Research. DAE is partly funded by the Danish Ministry of Science and Higher Education.

Disclosures: DAE is partly funded by the Danish Ministry of Science and Higher

Education and LEO Pharma A/S. TL and NS are employed by LEO Pharma A/S. JGK has received research support (grants paid to his institution) and/or personal fees from Pfizer, Amgen, Janssen, Lilly, Merck, Novartis, Kadmon, Dermira, Boehringer, Innovaderm, Kyowa, BMS, Serono, BiogenIdec, Delenex, AbbVie, Sanofi, Baxter, Paraxel, Xenoport, and Kineta. EGY is a board member for Sanofi Aventis, Regeneron, Stiefel/GlaxoSmithKline, MedImmune, Celgene, Anacor, AnaptysBio, Celsus, Dermira, Galderma, Glenmark, Novartis, Pfizer, Vitae and Leo Pharma; has received consultancy fees from Regeneron, Sanofi, MedImmune, Celgene, Stiefel/GlaxoSmithKline, Celsus, BMS, Amgen, Drais, AbbVie, Anacor, AnaptysBio, Dermira, Galderma, Glenmark, LEO Pharma, Novartis, Pfizer, Vitae, Mitsubishi Tanabe and Eli Lilly; and has received research support from Janssen, Regeneron, Celgene, BMS, Novartis, Merck, LEO Pharma and Dermira. MSF has received research support from Pfizer and Quorum Consulting. The rest of the authors declare that they have no relevant conflicts of interest.

ACCEPTED MANUSCRIPT

Abstract

Background: Atopic dermatitis (AD) is caused by a complex interplay between immune and barrier abnormalities. Murine models of AD are essential for preclinical assessments of new treatments. While many models have been used to simulate AD, their transcriptomic profiles are not fully understood, and a comparison of these models with the human AD transcriptomic fingerprint is lacking.

Objective: We sought to evaluate the transcriptomic profiles of six common murine models and determine how they relate to human AD skin.

Methods: Transcriptomic profiling was performed using microarrays and qRT-PCR on biopsies from NC/Nga, flaky-tail, *Flg*-mutated, ovalbumin-challenged, oxazolone-challenged, and IL-23-injected mice. Gene expression data of AD, psoriasis, and contact dermatitis were obtained from previous patient cohorts. Criteria of fold-change/FCH≥2 and false discovery rate/FDR≤0.05 were used for gene arrays.

Results: IL-23-injected, NC/Nga, and oxazolone-challenged mice show the largest homology with our human meta-analysis derived AD (MADAD) transcriptome (37%, 18%, 17%, respectively). Similar to human AD, robust Th1, Th2, and also Th17 activation are seen in IL-23-injected and NC/Nga mice, with similar, but weaker, inflammation in ovalbumin-challenged mice. Oxazolone-challenged mice show a Th1-centered reaction and flaky-tail mice demonstrate a strong Th17 polarization. *Flg*-mutated mice display FLG down-regulation without

significant inflammation.

Conclusion: No single murine model fully captures all aspects of the AD profile; instead, each model reflects different immune or barrier disease aspects. Overall, among the six murine models, IL-23-injected mice best simulate human AD; still, the translational focus of the investigation should determine which model is most applicable.

Clinical Implications: When testing new drugs for atopic dermatitis, murine models might be used to study barrier or immune features, but human trials are needed to determine effects on actual disease profile.

Capsule Summary: Differences between human atopic dermatitis/AD and murine profiles are significant regardless of the model. While IL-23-injected mice best replicate human AD, the choice of model should be guided by the translational focus of the investigation.

Keywords: Atopic dermatitis; Th1; Th2; Th17; psoriasis; contact dermatitis; mouse model; NC/Nga; filaggrin; oxazolone; ovalbumin; IL-2

Abbreviations:

AD: Atopic dermatitis

AQP7: Aquaporin 7

CCL: Chemokine (C-C motif) ligand

CD: Contact dermatitis

Claudin 8: CLDN8

CXCL: Chemokine (C-X-C motif) ligand

DC: Dendritic cell

DEGs: Differentially Expressed Gene

ELOVL3: Elongation of very long chain fatty acids (FEN1/Elo2, SUR4/Elo3, yeast)-like 3

FCH: Fold change

FLG: Filaggrin

HGNC: Human Genome Organization (HUGO) Gene Nomenclature Committee

IL: Interleukin

IFN: Interferon

KEGG: Kyoto Encyclopedia of Genes and Genomes

KRT16: Keratin 16

LCN2: Lipocalin 2

LOR: Loricrin

MADAD: Meta-analysis derived AD

PCA: Principal Component Analysis

PVCA: Principal variation component analysis

qRT-PCR: Quantitative reverse transcription PCR

SC: Stratum corneum

TEWL: Transepidermal water loss

Th: T helper

131 TLDA: TaqMan Low Density Array

132

ACCEPTED MANUSCRIPT

Introduction

Atopic dermatitis (AD) is the most common inflammatory skin disease,[1] caused by an interplay between immune and barrier abnormalities.[2,3] Unlike psoriasis, another common inflammatory skin disease that is largely Th17/IL-23 polarized,[2] AD is characterized by activation of multiple cytokine pathways.[4,5] In addition to immune activation, reduced expression of barrier components (terminal differentiation proteins, tight junctions and lipids) is also characteristic of AD.[6-9] Transcriptomic profiling of AD tissues at baseline and after treatment with broad and specific agents has recently increased our understanding of the disease.[10-12] While these studies highlight a critical role for the Th2 axis in AD,[10,13,14] they also suggest increased Th17/IL-23 and Th22 activation in AD, and particularly in some subtypes (i.e. Asian and intrinsic AD).[4,5,15] Although human testing is needed to elucidate the pathogenic contributions of various cytokines in AD, murine AD models are essential for assessing new drugs at the preclinical level.[16,17]

An ideal murine model should replicate both the epidermal barrier disruption and the cutaneous inflammation of the human disease. While many models have been used to simulate human AD, their transcriptomic profiles and relevance to the AD skin profile are not fully understood, since a direct comparison between frequently used models and human AD is lacking. A number of spontaneous genetically engineered, and inducible “AD-like” models have been described. These include NC/Nga,[16] flaky-tail (*Tmem79*$^{ma/ma}$ *Flg*$^{ft/ft}$),[18-20] *Flg*-mutated (*Flg*$^{ft/ft}$),[21] oxazolone (Oxa)-challenged,[22,23] and ovalbumin (Ova)-challenged mice.[24-27] Furthermore, IL-23-injected mouse model, which has been

traditionally considered to resemble psoriasis,[28,29] and exhibits the largest (25%) transcriptomic homology with human psoriasis fingerprinting among existing "psoriasis-like" models,[30] has also been found to display Th2 activation and simulate "AD-like" skin inflammation.[31] While all murine "AD-like" models (with the exception of *Flg*-mutated mice)[16,19-21,23,25,28] are visibly inflamed, it is difficult to macroscopically differentiate "AD-like" dermatitis in mice from lesions mimicking contact dermatitis (CD) or psoriasis. For example, since flaky-tail mice exhibit Th17-dominated skin inflammation,[32,33] this murine model may more closely simulate a "psoriasis-like" phenotype rather than an "AD-like" fingerprinting.

To evaluate the transcriptomic profiles of common AD models and determine how closely they resemble the intricate cytokine and epidermal abnormalities in AD skin, we profiled five common "AD-like" murine models, as well as the IL-23-injected model, previously considered to best mimic psoriasis. To be able to contrast all polar cytokine responses in humans, the murine profiles were compared with transcriptomic profiles of AD, and two other common inflammatory skin diseases, psoriasis and CD, that share clinical and tissue characteristics with AD.[9,34,35] We found that no single model fully captures all aspects of AD, but surprisingly IL-23-injected mice show the most similar transcriptomic profile to human AD.

Methods

Murine models

Transcriptomic profiling was performed using microarrays and qRT-PCR on biopsies from six models, including NC/Nga, flaky-tail, *Flg*-mutated, Ova-challenged, Oxa-challenged, and IL-23-injected mice. Controls for murine models generally had similar genetic background, comprising the C57BL/6 (Flaky-tail, *Flg*-mutated, Ova and IL-23), NC/Nga without mite infestation (NC/Nga) and BALB/c (Oxa) laboratory strains. The samples of flaky-tail, *Flg*-mutated, Ova-challenged, and NC/Nga mice were harvested at Kyoto University, Kyoto, Japan (**Table 1**). The specimens from Oxa-challenged mice were collected at Leo Pharma A/S, Ballerup, Denmark (**Table 1**). The IL-23-injected mice gene array data were acquired from a previously published cohort (GSE50400),[30] and available RNA samples from these mice were used for qRT-PCR. See Supplementary Methods section in this article's Online Repository (OR) at www.jacionline.org for more details. The Institutional Animal Care and Use Committee of Kyoto University and Leo Pharma A/S approved all experiments.

Representative images of each model are shown in **Fig 1A**. Ear tissues from flaky-tail, *Flg*-mutated, NC/Nga, and Oxa-challenged mice were used, while dorsal skin was harvested from Ova-challenged and IL-23-injected mice. Flaky-tail,[20] NC/Nga,[36] Ova-challenged,[25] and Oxa-challenged models[23] exhibit increased serum IgE levels. *Flg*-mutated mice show normal IgEs,[18] and IgE data are unavailable for IL-23-injected mice (**Table 1)**.[30]

Human cohorts

The AD microarray data was obtained from our meta-analysis derived AD (MADAD) transcriptome,[9] comprised of four AD lesional vs. non-lesional datasets with a total of 97 samples (41 paired lesional/non-lesional samples).

This study also includes a previously published cohort of 25 AD patients (9 females and 16 males; age, 23-73 years [median, 45 years]) with SCORAD scores from 33 to 77 (mean, 56.7; SD, 12.2) and serum eosinophils of 0.6% to 11.8% (median, 4.3%); among AD patients, 14/25 (56%) had extrinsic AD (serum IgE levels, 254-3,000 kU/L; median, 1,292.8 kU/L).[5,11] Ten previously published patients with moderate-to-severe psoriasis were included for comparisons (Psoriasis Area Severity Index, 8.4-59.5; mean, 20.3; SD, 14.5).[5,37] Thirteen previously published patients with allergic CD (n=10 with nickel allergy; n=3 with fragrance allergy) were included.[34] Biopsies from positive patch tests to these allergens were taken at 72 hours from patch test placement. All these subjects were European Americans. Patients' characteristics are summarized in **Table E1**, and the entire list is available in **Table E2**.

Quantitative RT-PCR and gene arrays

RNA was extracted with EZ-PCR Core Reagents (Life Technologies, Grand Island, NY). RNA was reverse transcribed to cDNA using the High Capacity cDNA Reverse Transcription kit (Applied Biosystems, Foster City, CA). TaqMan Low Density Array (TLDA) cards (384 well plates preloaded with TaqMan assays) were used for qRT-PCR. For IFN-γ, IL-13, and IL-17A, which are frequently

undetectable with TLDA, single Taqman qPCR was performed. All primers are listed in **Table E3**. For IL-23-injected mice, PCR analyses were performed using stored samples from a previous report.[30] Expression values (threshold cycle/Ct) were normalized to *Rplp0*.

Affymetrix Mouse Gene arrays 2.1 ST (Affymetrix, Santa Clara, CA) were used for flaky-tail, *Flg*-mutated, Ova-challenged, and NC/Nga mice. Affymetrix Mouse Gene arrays 1.0 ST were used for Oxa-challenged mice, while the previously published IL-23-injected murine transcriptomic data were analyzed with GeneChip Mouse Genome 430 2.0 Array (Affymetrix).

The MADAD transcriptome combined all effect sizes for each probe-set, and identified a set of 595 differentially expressed genes (DEGs; 387 up- and 208 down-regulated) using classical fold change (FCH)≥2 and false discovery rate (FDR)≤0.05 criteria.[9] For the qRT-PCR comparison, we used previously published data obtained from above-mentioned human cohorts. Since non-lesional AD skin is abnormal,[38] we also included a comparison of lesional AD to normal skin.

Bioinformatics and statistical analyses

Murine microarray data were preprocessed in R by the *justRMA* function of the *affy* package and normalized using the *normalize.quantiles.robust* or *normalize.quantiles.use.target* (IL-23 and Oxa models) function of *preprocessCore* package.[39,40]

Changes in expression profiles of each murine model and its controls

were performed using the linear model framework of *limma* package.[41] P-values from moderated t-test were adjusted for multiple testing using Benjamini-Hochberg procedure.

Cross-species-annotation from murine to human ensemble IDs was performed using the *getLDS* function *biomart* package.[42-45]

Linear models were applied to analyze TLDA and qRT-PCR expression data, based on *Rplp0* normalized and negative transformed Ct (-dCt) values. Prior to applying these models to TLDA and qRT-PCR expression data, but after normalization, we replaced non-detected -dCt values with 20% of the minimum dCt for each gene across all samples, while keeping it in the possible range of -40 to 40.

ACCEPTED MANUSCRIPT

Results

Transcriptomic profiling of "AD-like" murine models

While transcriptomic fingerprinting has been thoroughly performed in AD skin,[4,5,38,44-47] a similar analysis is lacking for "AD-like" murine models. To establish the individual transcriptomic profiles of prominent "AD-like" models and their similarity to human disease, we profiled skin from five common AD-like models[20,21,23,25,36] as well as from the IL-23-injected model, considered to best represent the IL-17/IL-23-centered inflammation in psoriasis,[30] using gene arrays (**Table 1**). Criteria of FCHs≥2 and FDR≤0.05 were used to define DEGs between diseased murine skin and respective controls. The lists of DEGs for each model are listed in **Table E4**.

A Venn diagram, based on unique Human Genome Organisation (HUGO) Gene Nomenclature Committee (HGNC) symbol orthologs and proportional to DEGs, illustrates the overlap between murine models (**Fig. 1B**). Flaky-tail and *Flg*-mutated models are excluded from the diagram since they display the lowest number of DEGs (n=226 and n=47, respectively), despite being among the largest sample sizes (n=5; **Table 1**). Overall, IL-23-injected mice show the highest number of DEGs (n=2753), followed by Oxa-challenged (n=1004), NC/Nga (n=742), and Ova-challenged (n=373) mice. Only 67 DEGs are shared among NC/Nga, Ova-challenged, Oxa-challenged, and IL-23-injected mice, as represented in the center of the Venn diagram (**Fig 1B)**.

Murine models show differential profiles compared to human AD

To compare how well "AD-like", and the IL-23-injected models represent human AD, each murine transcriptomic profile was compared with the meta-analysis derived AD (MADAD),[9] a robust AD transcriptome across four independent cohorts. The murine transcriptomes represent only 37%, 18%, 17%, and 11% of the human AD profile (MADAD), for IL-23-injected, NC/Nga, Oxa-challenged, and Ova-challenged mice, respectively (**Fig 1C**). Only 4% of DEGs in flaky-tail mice and 1% in *Flg*-mutated mice overlap with MADAD. The poor homology between human AD and the murine skin profiles is also illustrated as a heatmap, in **Fig E1,** showing relative expressions of MADAD genes within all murine transcriptomes. **Fig E2** illustrates expression data by sample. Surprisingly, the transcriptome of IL-23-injected mice best represents the up- and down-regulated components of the MADAD followed by NC/Nga, Oxa-challenged and Ova-challenged mice. *Flg*-mutated and flaky-tail profiles are not well reflective of the MADAD increased or decreased elements. The MADAD DEGs with corresponding FCHs and FDRs are shown in **Table E5,** for each model.

Since the choice of cut-offs and hybridization kits can influence intersections between DEGs of various transcriptomes,[48] the MADAD and transcriptomes of six murine models were also compared using ranked gene lists instead of cut-offs, as previously described.[29,30] The 5000 highest up- and down-regulated genes in each mouse transcriptome were identified and ranked according to FCHs, with lowest ranks assigned to the genes with highest regulations. We then analyzed the overlap of MADAD with ranked genes in each

murine model. In **Fig. 1D**, the red and blue lines correspond to the overlap between up- and down-regulated genes, respectively, of murine models and MADAD at any given rank N, where N=1, …, 5000. The light blue line outlines the level of overlap expected by chance (the 95% confidence region of hypergeometric distribution under the null hypothesis), such that any line above it indicates a significant level of overlap and farther distances from it show a higher overlap.[49] For any given rank, IL-23-injected mice represent the highest and most significant overlap with the MADAD, and in decreasing order for Oxa-challenged and NC/Nga mice. The Ova-challenged model has significant overlap with genes up-regulated in human AD, but fails to capture the down-regulated signature of human AD. The transcriptomes of flaky-tail and *Flg*-mutated mice have poor overlap with human AD, consistent with the standard cut-off based approaches (**Fig 1 B-C**).

To associate different mice profiles with relevant biological functions in human AD, an enrichment analysis was also conducted, using KEGG pathways.[50,51] Selected pathways significantly enriched in human AD and in the murine models are shown in **Fig 2A** and **Table E6,** with the black vertical line representing FDR=0.05. The genes represented in each pathway are listed in **Table E7**. The most significantly enriched pathways in the MADAD includes PPAR signaling, cytokine-cytokine receptor interaction, JAK-STAT signaling, T cell receptor signaling, chemokine signaling, cell adhesion molecules, and adipocyte signaling pathways. IL-23-injected mice best simulate the inflammation and lipid pathways in human AD, with enrichments in some pathways also seen

with NC/Nga and Oxa-challenged mice. Ova-challenged mice only share the cytokine-cytokine receptor interaction, PPAR signaling and biosynthesis of unsaturated fatty acids pathways with MADAD. A single lipid pathway (biosynthesis of unsaturated fatty acids) is shared between *Flg*-mutated and flaky-tail mice and the MADAD, although this pathway is not significant for the MADAD. Retinol metabolism, hedgehog signaling and melanogenesis pathways are enriched in flaky-tail mice, but are not enriched in MADAD.

Fig 2B illustrates the top 30 up- and down-regulated MADAD DEGs and their representation in each model (**Table E5**). Again, IL-23-injected mice best represent not only the up- (e.g. CCL18, S100A8, KRT16) but also the down-regulated DEGs (e.g. CLDN8) in the MADAD, while NC/Nga, Ova-challenged, and Oxa-challenged mice mostly capture the up-regulated but not the down-regulated genes in the MADAD. The flaky-tail model only poorly represents key AD genes, and *Flg*-mutated mice entirely lack the top up- and down-regulated human AD genes. The IL-23 model captures some lipid (ELOVL3), tight junction (CLDN8) and water channel (AQP7) deficiencies, previously reported to characterize the barrier defects in AD.[9,44,52,53]

Transcriptomic homology between mice and inflammatory skin diseases

Since the signatures of the six murine models showed limited resemblance to human AD, we expanded our comparison to also include transcriptomic profiles of two other well-characterized polar inflammatory skin diseases, psoriasis and contact dermatitis (CD).[5,11,34,37] We then performed unsupervised clustering with

348 percentages reflecting robustness of each branch in the dendrogram (**Fig 3A**).
349 The resultant dendrogram establishes a tight cluster of inflammatory skin
350 diseases, with clear separation from murine models. *Flg*-mutated and flaky-tail
351 mice cluster together and farther apart from other models. To elucidate the
352 relative distances between individual models and human disease and to identify
353 which murine model is closest to the human diseases, we performed a principal
354 component analysis (PCA) (**Fig. 3B).** The PCA plot shows that murine models
355 are separated from inflammatory skin diseases. IL-23-injected mice are closest to
356 the AD profile (MADAD) on the PC1 axis, followed by CD (to fragrance) and
357 surprisingly only then by psoriasis (**Fig. 3B**). Indeed, a principal variation
358 component analysis (PVCA) also indicates that the organism explains 41.5% of
359 the variations, with disease or mouse model accounting only for 12% (data not
360 shown).
361
362 **qRT-PCR highlights significant differences in polar immune activation**
363 **among murine models**
364 To validate and extend the microarray findings to polar cytokines, qRT-PCR was
365 performed on a wide array of hallmark human AD inflammatory and barrier genes
366 that are often below detection levels in arrays and share murine orthologs. The
367 mRNA expressions were also compared to those obtained in our AD and
368 psoriasis cohorts, and, for selected, available genes also to CD (to nickel and
369 fragrance) populations **(Fig. 4)**.[34] Overall, similar patterns are seen in qRT-PCR
370 and gene arrays. IL-23-injected, NC/Nga, Oxa-challenged and Ova-challenged

mice show large increases in innate, Th2, and Th1 cytokine pathways (IL-1β, IL-13, IFN-γ), as well as increased KRT16 (marking epidermal hyperplasia),[54] and the Oxa-challenged model has the highest activation of the Th2 cytokine, IL-13. Only IL-23-injected and NC/Nga mice reflect all diverse cytokine pathways, including IL-17A activation. The down-regulation of terminal differentiation genes (filaggrin/FLG, loricrin/LOR) that characterizes AD is best captured by *Flg*-mutated and flaky-tail models, and to some extent by IL-23-injected, Ova, and Oxa models but is missing in NC/Nga mice.

ACCEPTED MANUSCRIPT

Discussion

Over the past decades, many murine "AD-like" models,[20,21,23,25,36] including humanized AD,[55] topical vitamin D analogue application,[56,57] or allergen/staphylococcal enterotoxin B models,[56-58] have been developed as tools for understanding the AD pathogenesis and as preclinical models. The most complete view of the human AD profile is based on transcriptomic profiling of skin lesions.[4,5,9] Key AD features include prominent activation of inflammatory pathways and large defects in epidermal differentiation, tight junctions and lipid profiles.[38,44-46,59,60] Unlike psoriasis that is largely Th17/IL-23-polarized, AD shows more diverse cytokine expression, with Th2, but also Th22 pathway activation,[2] with possible roles also suggested for IL-23/Th17 axis, particularly in specific AD populations, such as Asian AD.[5]

Global transcriptomic profiling of individual murine models is essential for understanding their distinct cytokine and barrier alterations and how well they resemble human AD fingerprinting, as compared with profiles of other common polar inflammatory skin diseases.[29,30] This study is the first to evaluate the fingerprinting of commonly used "AD-like" (and a representative "psoriasis-like") murine models and their relevance to human AD, but also to psoriasis and CD.

A proper model of human AD skin should appropriately represent its two main features, the relevant cytokine networks and the epidermal pathology. However, our data suggest that no single murine model is able to accurately simulate both aspects of AD. Our data separates the models into two clusters. One group includes flaky-tail and *Flg*-mutated mice, which are least reminiscent

of human AD, and particularly of its immune skewing. Flaky-tail mice show a Th17-dominated polarization and *Flg*-mutated mice demonstrate no apparent clinical or tissue inflammation, which is quite different from the human AD profile. The other group, including IL-23-injected, NC/Nga, Oxa-challenged, and Ova-challenged mice, show a broad range of polar immune activation. With the exception of the IL-23-injected model, which simulates some barrier features of human AD, such as reductions in tight junctions (CLDN8), lipids and LOR, other models in this group mostly do not reflect the epidermal abnormalities of AD.

Surprisingly, among all evaluated models, IL-23-injected mice show the largest overlap with human AD skin, which is unexpected since this model has been traditionally used for psoriasis.[61] This model demonstrates remarkable activations of innate immunity, Th1, Th2, and Th17/IL-23 axes, as well as some epidermal alterations. Still, IL-23-injected mice have increased neutrophils and only sparse eosinophils and mast cells,[30,31] that can be found in human AD.[62,63] Furthermore FLG down-regulation, which represents a hallmark of AD, is absent in this model. This model thus replicates the Th2 activation of AD, as well as the Th17/Th22 signature of psoriasis and some AD subtypes. While IgE levels have not been evaluated in our IL-23 model,[30,31] IgE responses take at least several weeks to develop.[25] Perhaps, unlike other models, which have more chronic T-cell activation, and are able to induce IgE responses over time, IL-23 model is a short-term skin inflammation model (profile is created within 7d).

While the NC/Nga model does not reflect the various barrier defects of human AD, including decreases in differentiation, tight junctions, and lipids (i.e

425 FLG, LOR, CLDN8, ELOVL3),[9,38,44-46] it clearly shows the diverse immune
426 polarizations in human AD, including innate, Th1, Th2, and Th17 pathways. Thus,
427 use of NC/Nga mice might be useful to investigate the complex cytokine
428 interactions, but not the barrier aberrations of AD. Ova-challenged mice also
429 replicate activation of inflammatory pathways in AD, although to a lesser extent
430 than IL-23-injected and NC/Nga models.

431 Oxa-challenged mice demonstrate high Th1 and marginal Th2 inductions,
432 with only limited barrier defects (LOR). IL-17A induction is absent in these mice,
433 but a few downstream mediators (S100A8, lipocalin 2/LCN2) are up-regulated.

434 Flaky-tail mice show selective Th17 activation, as previously reported.[32,33]
435 While the Th17 axis is a central driver of psoriasis, some role of this pathway in
436 AD, including induction of the Th2 axis, has recently been suggested.[5,64,65] Thus,
437 while flaky-tail mice replicate some Th17 activation and reductions in FLG and
438 LOR seen in AD, data obtained from these mice should be applied cautiously to
439 human AD as this model lacks Th2 activation, which is the hallmark of the AD
440 immune responses.

441 *Flg*-mutated mice are the only murine model showing significant down-
442 regulation of FLG, similar to reductions observed in human AD.[66-68] However, *Flg*-
443 mutated mice lack both clinical and transcriptomic skin inflammation,[21] and
444 additional barrier abnormalities that are seen in AD, suggesting its limited use as
445 a model to replicate the inflammation and global barrier defects in AD. A
446 summary of clinical and laboratory characteristics of all analyzed models is
447 provided in **Table 2**.

Human inflammatory skin diseases share a number of features, but maintain distinct differences in tissue structure and immune activation. While down-regulation of differentiation genes clearly differentiates AD from the other two inflammatory skin diseases, other immune and epidermal features are shared among the 3 conditions. These characteristics include increased epidermal hyperplasia and activation of Th1, Th17, and Th22 pathways, although, as expected, Th2 polarization is minimal in psoriasis compared to AD.[5]

Our study has several limitations: 1. Only mRNA, but not protein levels were measured, and assessments were limited to a single time-point; 2. We mainly used B6 mice, although BALB/c might be more appropriate in certain cases; 3. We did not perform functional *in-vivo* tests (i.e., transepidermal water loss/TEWL, corneal water content, and pruritus measures).[16,23] The biopsies were taken from different locations and at different ages in mice, possibly affecting gene expression.[69] Last, comparisons with different AD endotypes were not possible here, and should be addressed by future larger cohort studies of various ages, races, etc.

Overall, no single murine model fully captures all immune and barrier aspects of human AD skin, and phenotypical differences between AD and murine models are significant regardless of which model is chosen. Nevertheless, of the models studied, IL-23-injected mice appear to best replicate the human AD profile. IL-23-injected and NC/Nga mice demonstrate a wide array of inflammatory axes, including Th2 activation, and are best suited to assess this AD-centric axis, and how it interacts with other activated cytokines in AD. Oxa-

challenged and Ova-challenged mice, despite showing remarkable inflammation, are not necessarily AD-specific. IL-23-injected, Oxa-, and Ova-challenged models have the advantage that inducing agents can be used on different mouse backgrounds, including existing knockouts of specific genes, to dissect cutaneous inflammation. Flaky-tail mice fail to capture any key features of human AD. *Flg*-mutated mice are best only to represent the *FLG* down-regulation in AD, but not other AD characteristics. Thus, the choice of which murine model to use depends on the translational focus of the investigator, but caution should be exercised when translating murine data to human inflammatory skin diseases.

ACCEPTED MANUSCRIPT

480 **Tables**

481

482 Table 1. Mouse sample data

Sample	n	Age	Sex	Biopsy location	Serum IgE elevation	Description	#DEGs (unique HGNC symbols)
Flaky tail	5	26 weeks	female	Ear	+	*Flg* and *ma* mutation	226
Flg-mutated	5	26 weeks	female	Ear	-	*Flg* mutation	47
C57BL/6	5	26 weeks	female	Ear	-	Controls for flaky tail and *Flg*-mutated mice	
NC/Nga (+mite)	5	10 weeks	male	Ear	+	Mite exposure	742
NC/Nga (-mite)	5	10 weeks	male	Ear	-	No mite exposure (controls for NC/Nga +mite)	
Ova-challenged	3	15 weeks	female	Dorsal skin	+	C57BL/6 with ovalbumin application	373
Control	3	15 weeks	female	Dorsal skin	-	Controls for Ova-challenged mice	
Oxa-challenged	3	~10 weeks	female	Ear	+	BALB/c with oxazolone application	1004
Acetone-challenged	3	~10 weeks	female	Ear	-	Controls for Oxa-challenged mice	
IL-23-injected	5	6 weeks	female	Dorsal skin	n/a	C57BL/6 with IL-23 injections	2753
PBS-injected	5	6 weeks	female	Dorsal skin	n/a	Controls for IL-23-injected mice	

483

484 Table 2. The summary of clinical and histological features of mouse models

	Clinical					Histology			
	Visible inflammation	TEWL increase	SC water content reduction	Pruritic activity	Serum IgE increase	Epidermal hyperplasia	Parakeratosis	T cell	DC
Flaky tail[16,20]	+	+	+	+	+	+	+	+	+
Flg-mutated[21]	-	-	-	-	-	-	-	-	-
NC/Nga[16]	+	+	+	+	+	+	+	+	+
Ova[25]	+	+	+	n/a	+	+	+	+	+
Oxa[23]	+	+	+	+	+	+	+	+	+
IL-23-injected[28,31]	+	n/a	n/a	n/a	n/a	+	+	+	+

485

ACCEPTED MANUSCRIPT

Figure legends

Figure 1: **A.** Representative pictures of murine models. **B.** Venn diagram of overlapping DEGs for 4 AD models. Flaky-tail and *Flg*-mutated models are excluded due to their small number of DEGs. **C.** Proportion of MADAD DEGs represented in each model.[9] IL-23-injected mice appear separated because these data are from our previous study (GSE50400).[30] **D.** Overlap between top up- (red) and down-regulated (dark blue) genes in each model and MADAD was estimated for rank N=1…5000.[70] The light blue line outlines the overlap expected by chance, such that any line above it indicates significant overlap and distances farther from it show higher overlap.[49]

Figure 2: A. KEGG analysis in the respective MADAD and murine model transcriptomes. The black horizontal line indicates FDR=0.05. **B.** Heatmap of the top 30 up- and down-regulated MADAD DEGs with orthologs in murine models.[9] Corresponding $\log_2$(FCH) are shown. *P<0.05; **P<0.01; ***P<0.001. Coloring (blue: down-regulated; red: up-regulated) appears for absolute $\log_2$(FCH)≥1, with adjusted p-values<0.05.

Figure 3: Genome-wide neighboring analysis of the 8400 genes represented in human-murine orthologs. **A.** Dendrogram applying unsupervised clustering using Pearson's correlation distance and McQuitty agglomeration. Significant clusters have approximately unbiased (AU) p-values ≥ 95%[71] **B.** PCA using $\log_2$(FCH) for

509 the 8400 genes.

510

511 **Figure 4**: Heatmap of qRT-PCR-derived mRNA expression differences. CD data
512 are shown separated because data from only 13 genes was available.[34]
513 Corresponding $\log_2$(FCH) are shown. +P<0.1; *P<0.05; **P<0.01; ***P<0.001.
514 Dendrograms represent the unsupervised clustering with Euclidean distance and
515 McQuitty agglomeration. LS=lesional, NL=non-lesional, PSO=psoriasis,
516 AD=atopic dermatitis, CD=contact dermatitis

ACCEPTED MANUSCRIPT

References

1. Hay RJ, Johns NE, Williams HC, et al. The global burden of skin disease in 2010: an analysis of the prevalence and impact of skin conditions. *The Journal of investigative dermatology.* 2014;134(6):1527-1534.
2. Noda S, Krueger JG, Guttman-Yassky E. The translational revolution and use of biologics in patients with inflammatory skin diseases. *J Allergy Clin Immunol.* 2015;135(2):324-336.
3. Kabashima K. New concept of the pathogenesis of atopic dermatitis: interplay among the barrier, allergy, and pruritus as a trinity. *J Dermatol Sci.* 2013;70(1):3-11.
4. Suárez-Fariñas M, Dhingra N, Gittler J, et al. Intrinsic atopic dermatitis shows similar TH2 and higher TH17 immune activation compared with extrinsic atopic dermatitis. *The Journal of allergy and clinical immunology.* 2013;132(2):361-370.
5. Noda S, Suárez-Fariñas M, Ungar B, et al. The Asian atopic dermatitis phenotype combines features of atopic dermatitis and psoriasis with increased TH17 polarization. *J Allergy Clin Immunol.* 2015.
6. Osawa R, Akiyama M, Shimizu H. Filaggrin gene defects and the risk of developing allergic disorders. *Allergol Int.* 2011;60(1):1-9.
7. Danso MO, van Drongelen V, Mulder A, et al. TNF-α and Th2 cytokines induce atopic dermatitis-like features on epidermal differentiation proteins and stratum corneum lipids in human skin equivalents. *The Journal of*

investigative dermatology. 2014;134(7):1941-1950.

8. Howell MD, Kim BE, Gao P, et al. Cytokine modulation of atopic dermatitis filaggrin skin expression. *The Journal of allergy and clinical immunology.* 2007;120(1):150-155.

9. Ewald D, Malajian D, Krueger J, et al. Meta-analysis derived atopic dermatitis (MADAD) transcriptome defines a robust AD signature highlighting the involvement of atherosclerosis and lipid metabolism pathways. *BMC Medical Genomics.* 2015;8:60.

10. Hamilton JD, Suárez-Fariñas M, Dhingra N, et al. Dupilumab improves the molecular signature in skin of patients with moderate-to-severe atopic dermatitis. *J Allergy Clin Immunol.* 2014;134(6):1293-1300.

11. Khattri S, Shemer A, Rozenblit M, et al. Cyclosporine in patients with atopic dermatitis modulates activated inflammatory pathways and reverses epidermal pathology. *J Allergy Clin Immunol.* 2014;133(6):1626-1634.

12. Tintle S, Shemer A, Suárez-Fariñas M, et al. Reversal of atopic dermatitis with narrow-band UVB phototherapy and biomarkers for therapeutic response. *J Allergy Clin Immunol.* 2011;128(3):583-593.e581-584.

13. Thaçi D, Simpson EL, Beck LA, et al. Efficacy and safety of dupilumab in adults with moderate-to-severe atopic dermatitis inadequately controlled by topical treatments: a randomised, placebo-controlled, dose-ranging phase 2b trial. *Lancet.* 2015.

14. Beck LA, Thaçi D, Hamilton JD, et al. Dupilumab treatment in adults with

563 moderate-to-severe atopic dermatitis. *N Engl J Med.* 2014;371(2):130-
564 139.
565 15. Shroff A G-YE. Successful use of ustekinumab therapy in refractory severe
566 atopic dermatitis. Vol 1. JAAD Case Reports2015:25-26.
567 16. Otsuka A, Doi H, Egawa G, et al. Possible new therapeutic strategy to
568 regulate atopic dermatitis through upregulating filaggrin expression. *The*
569 *Journal of allergy and clinical immunology.* 2014;133(1):139-146.e131-
570 110.
571 17. Amano W, Nakajima S, Kunugi H, et al. The Janus kinase inhibitor JTE-
572 052 improves skin barrier function through suppressing signal transducer
573 and activator of transcription 3 signaling. *The Journal of allergy and*
574 *clinical immunology.* 2015;136(3):667-677.e667.
575 18. Sasaki T, Shiohama A, Kubo A, et al. A homozygous nonsense mutation in
576 the gene for Tmem79, a component for the lamellar granule secretory
577 system, produces spontaneous eczema in an experimental model of
578 atopic dermatitis. *J Allergy Clin Immunol.* 2013;132(5):1111-1120.e1114.
579 19. Saunders SP, Goh CS, Brown SJ, et al. Tmem79/Matt is the matted
580 mouse gene and is a predisposing gene for atopic dermatitis in human
581 subjects. *The Journal of allergy and clinical immunology.*
582 2013;132(5):1121-1129.
583 20. Moniaga CS, Egawa G, Kawasaki H, et al. Flaky tail mouse denotes
584 human atopic dermatitis in the steady state and by topical application with
585 Dermatophagoides pteronyssinus extract. *The American journal of*

pathology. 2010;176(5):2385-2393.

21. Kawasaki H, Nagao K, Kubo A, et al. Altered stratum corneum barrier and enhanced percutaneous immune responses in filaggrin-null mice. *The Journal of allergy and clinical immunology.* 2012;129(6):1538-1546.e1536.

22. Bae IH, Yun JW, Seo JA, et al. Immunohistological comparison of cutaneous pathology of three representative murine atopic dermatitis models. *Journal of dermatological science.* 2010;59(1):57-60.

23. Man MQ, Hatano Y, Lee SH, et al. Characterization of a hapten-induced, murine model with multiple features of atopic dermatitis: structural, immunologic, and biochemical changes following single versus multiple oxazolone challenges. *J Invest Dermatol.* 2008;128(1):79-86.

24. Anthoni M, Wang G, Deng C, Wolff HJ, Lauerma AI, Alenius HT. Smad3 signal transducer regulates skin inflammation and specific IgE response in murine model of atopic dermatitis. *The Journal of investigative dermatology.* 2007;127(8):1923-1929.

25. Wang G, Savinko T, Wolff H, et al. Repeated epicutaneous exposures to ovalbumin progressively induce atopic dermatitis-like skin lesions in mice. *Clin Exp Allergy.* 2007;37(1):151-161.

26. Spergel JM, Mizoguchi E, Oettgen H, Bhan AK, Geha RS. Roles of TH1 and TH2 cytokines in a murine model of allergic dermatitis. *J Clin Invest.* 1999;103(8):1103-1111.

27. Spergel JM, Mizoguchi E, Brewer JP, Martin TR, Bhan AK, Geha RS. Epicutaneous sensitization with protein antigen induces localized allergic

609 dermatitis and hyperresponsiveness to methacholine after single exposure
610 to aerosolized antigen in mice. *J Clin Invest.* 1998;101(8):1614-1622.
611 28. Chan JR, Blumenschein W, Murphy E, et al. IL-23 stimulates epidermal
612 hyperplasia via TNF and IL-20R2-dependent mechanisms with
613 implications for psoriasis pathogenesis. *J Exp Med.* 2006;203(12):2577-
614 2587.
615 29. Swindell WR, Johnston A, Carbajal S, et al. Genome-wide expression
616 profiling of five mouse models identifies similarities and differences with
617 human psoriasis. *PLoS One.* 2011;6(4):e18266.
618 30. Suárez-Fariñas M, Arbeit R, Jiang W, Ortenzio FS, Sullivan T, Krueger JG.
619 Suppression of molecular inflammatory pathways by Toll-like receptor 7, 8,
620 and 9 antagonists in a model of IL-23-induced skin inflammation. *PLoS*
621 *One.* 2013;8(12):e84634.
622 31. Bromley SK, Larson RP, Ziegler SF, Luster AD. IL-23 induces atopic
623 dermatitis-like inflammation instead of psoriasis-like inflammation in
624 CCR2-deficient mice. *PLoS One.* 2013;8(3):e58196.
625 32. Oyoshi MK, Murphy GF, Geha RS. Filaggrin-deficient mice exhibit TH17-
626 dominated skin inflammation and permissiveness to epicutaneous
627 sensitization with protein antigen. *The Journal of allergy and clinical*
628 *immunology.* 2009;124(3):485-493, 493.e481.
629 33. Bonefeld CM, Petersen TH, Bandier J, et al. Epidermal filaggrin deficiency
630 mediates increased systemic Th17 immune response. *Br J Dermatol.*
631 2016.

632 34. Dhingra N, Shemer A, Correa da Rosa J, et al. Molecular profiling of
633 contact dermatitis skin identifies allergen-dependent differences in
634 immune response. *J Allergy Clin Immunol.* 2014;134(2):362-372.
635 35. Tian S, Krueger JG, Li K, et al. Meta-analysis derived (MAD)
636 transcriptome of psoriasis defines the "core" pathogenesis of disease.
637 *PLoS One.* 2012;7(9):e44274.
638 36. Matsuda H, Watanabe N, Geba GP, et al. Development of atopic
639 dermatitis-like skin lesion with IgE hyperproduction in NC/Nga mice.
640 *International immunology.* 1997;9(3):461-466.
641 37. Johnson-Huang LM, Suárez-Fariñas M, Sullivan-Whalen M, Gilleaudeau
642 P, Krueger JG, Lowes MA. Effective narrow-band UVB radiation therapy
643 suppresses the IL-23/IL-17 axis in normalized psoriasis plaques. *J Invest*
644 *Dermatol.* 2010;130(11):2654-2663.
645 38. Suárez-Fariñas M, Tintle SJ, Shemer A, et al. Nonlesional atopic
646 dermatitis skin is characterized by broad terminal differentiation defects
647 and variable immune abnormalities. *J Allergy Clin Immunol.*
648 2011;127(4):954-964.e951-954.
649 39. Gautier L, Cope L, Bolstad BM, Irizarry RA. affy--analysis of Affymetrix
650 GeneChip data at the probe level. *Bioinformatics (Oxford, England).*
651 2004;20:307-315.
652 40. *preprocessCore: A collection of pre-processing functions.*
653 [computer program]. Version R package version 1.30.0.
654 41. Ritchie ME, Phipson B, Wu D, et al. limma powers differential expression

analyses for RNA-sequencing and microarray studies. *Nucleic acids research.* 2015;43(7):e47.

42. Durinck S, Moreau Y, Kasprzyk A, et al. BioMart and Bioconductor: a powerful link between biological databases and microarray data analysis. *Bioinformatics.* 2005;21(16):3439-3440.

43. Correa da Rosa J, Malajian D, Shemer A, et al. Patients with atopic dermatitis have attenuated and distinct contact hypersensitivity responses to common allergens in skin. *J Allergy Clin Immunol.* 2015;135(3):712-720.

44. Esaki H, Ewald DA, Ungar B, et al. Identification of novel immune and barrier genes in atopic dermatitis by means of laser capture microdissection. *J Allergy Clin Immunol.* 2015;135(1):153-163.

45. Suárez-Fariñas M, Ungar B, Correa da Rosa J, et al. RNA sequencing atopic dermatitis transcriptome profiling provides insights into novel disease mechanisms with potential therapeutic implications. *J Allergy Clin Immunol.* 2015;135(5):1218-1227.

46. Gittler JK, Shemer A, Suárez-Fariñas M, et al. Progressive activation of T(H)2/T(H)22 cytokines and selective epidermal proteins characterizes acute and chronic atopic dermatitis. *J Allergy Clin Immunol.* 2012;130(6):1344-1354.

47. Quaranta M, Knapp B, Garzorz N, et al. Intraindividual genome expression analysis reveals a specific molecular signature of psoriasis and eczema. *Sci Transl Med.* 2014;6(244):244ra290.

678 48. Suárez-Fariñas M, Lowes MA, Zaba LC, Krueger JG. Evaluation of the
679 psoriasis transcriptome across different studies by gene set enrichment
680 analysis (GSEA). *PLoS One.* 2010;5(4):e10247.
681 49. Yang X, Bentink S, Scheid S, Spang R. Similarities of ordered gene lists. *J*
682 *Bioinform Comput Biol.* 2006;4(3):693-708.
683 50. Rivals I, Personnaz L, Taing L, Potier MC. Enrichment or depletion of a
684 GO category within a class of genes: which test? *Bioinformatics.*
685 2007;23(4):401-407.
686 51. Zhang J, Xing Z, Ma M, et al. Gene ontology and KEGG enrichment
687 analyses of genes related to age-related macular degeneration. *Biomed*
688 *Res Int.* 2014;2014:450386.
689 52. Westerberg R, Tvrdik P, Undén AB, et al. Role for ELOVL3 and fatty acid
690 chain length in development of hair and skin function. *J Biol Chem.*
691 2004;279(7):5621-5629.
692 53. Suárez-Fariñas M, Gittler JK, Shemer A, Cardinale I, Krueger JG,
693 Guttman-Yassky E. Residual genomic signature of atopic dermatitis
694 despite clinical resolution with narrow-band UVB. *J Allergy Clin Immunol.*
695 2013;131(2):577-579.
696 54. Hodak E, Gottlieb AB, Anzilotti M, Krueger JG. The insulin-like growth
697 factor 1 receptor is expressed by epithelial cells with proliferative potential
698 in human epidermis and skin appendages: correlation of increased
699 expression with epidermal hyperplasia. *J Invest Dermatol.*
700 1996;106(3):564-570.

55. Carretero M, Guerrero-Aspizua S, Illera N, et al. Differential Features between Chronic Skin Inflammatory Diseases Revealed in Skin-Humanized Psoriasis and Atopic Dermatitis Mouse Models. *J Invest Dermatol.* 2016;136(1):136-145.

56. Turner MJ, Dasilva-Arnold SC, Yi Q, Mehrotra P, Kaplan MH, Travers JB. Topical application of a vitamin D analogue exacerbates atopic dermatitis and induces the atopic dermatitis-like phenotype in Stat6VT mice. *Pediatr Dermatol.* 2013;30(5):574-578.

57. Li M, Hener P, Zhang Z, Kato S, Metzger D, Chambon P. Topical vitamin D3 and low-calcemic analogs induce thymic stromal lymphopoietin in mouse keratinocytes and trigger an atopic dermatitis. *Proc Natl Acad Sci U S A.* 2006;103(31):11736-11741.

58. Ando T, Matsumoto K, Namiranian S, et al. Mast cells are required for full expression of allergen/SEB-induced skin inflammation. *J Invest Dermatol.* 2013;133(12):2695-2705.

59. Kuo IH, Carpenter-Mendini A, Yoshida T, et al. Activation of epidermal toll-like receptor 2 enhances tight junction function: implications for atopic dermatitis and skin barrier repair. *J Invest Dermatol.* 2013;133(4):988-998.

60. De Benedetto A, Rafaels NM, McGirt LY, et al. Tight junction defects in patients with atopic dermatitis. *J Allergy Clin Immunol.* 2011;127(3):773-786.e771-777.

61. Hedrick MN, Lonsdorf AS, Shirakawa AK, et al. CCR6 is required for IL-23-induced psoriasis-like inflammation in mice. *J Clin Invest.*

2009;119(8):2317-2329.

62. Groneberg DA, Bester C, Grützkau A, et al. Mast cells and vasculature in atopic dermatitis--potential stimulus of neoangiogenesis. *Allergy.* 2005;60(1):90-97.

63. Simon D, Braathen LR, Simon HU. Eosinophils and atopic dermatitis. *Allergy.* 2004;59(6):561-570.

64. Koga C, Kabashima K, Shiraishi N, Kobayashi M, Tokura Y. Possible pathogenic role of Th17 cells for atopic dermatitis. *The Journal of investigative dermatology.* 2008;128(11):2625-2630.

65. Nakajima S, Kitoh A, Egawa G, et al. IL-17A as an inducer for Th2 immune responses in murine atopic dermatitis models. *The Journal of investigative dermatology.* 2014;134(8):2122-2130.

66. Thyssen JP, Kezic S. Causes of epidermal filaggrin reduction and their role in the pathogenesis of atopic dermatitis. *J Allergy Clin Immunol.* 2014;134(4):792-799.

67. Strid J, McLean WH, Irvine AD. Too Much, Too Little or Just Enough: A Goldilocks Effect for IL-13 and Skin Barrier Regulation? *J Invest Dermatol.* 2016;136(3):561-564.

68. Guttman-Yassky E, Nograles KE, Krueger JG. Contrasting pathogenesis of atopic dermatitis and psoriasis--part I: clinical and pathologic concepts. *J Allergy Clin Immunol.* 2011;127(5):1110-1118.

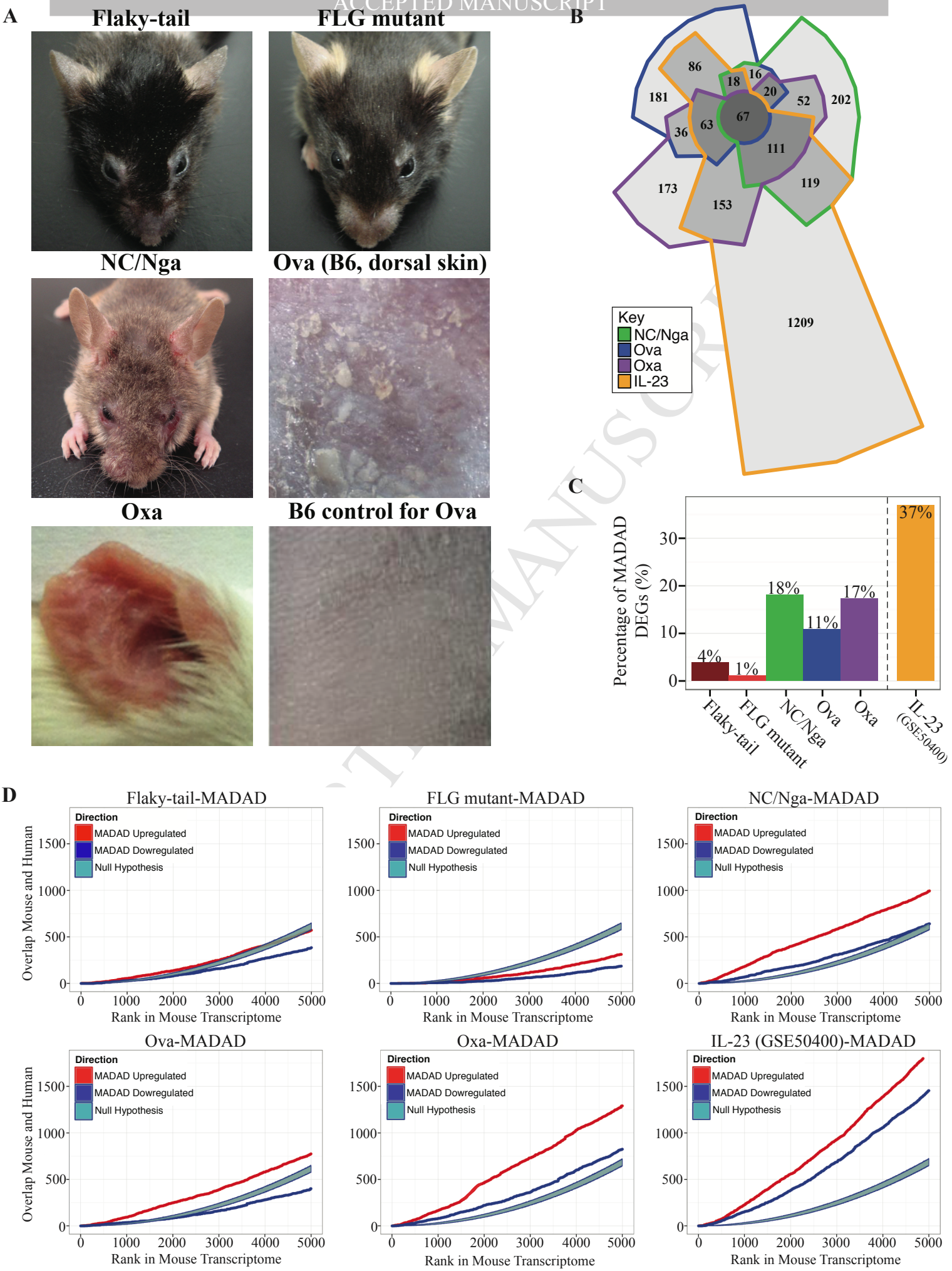
69. Swindell WR, Johnston A, Sun L, et al. Meta-profiles of gene expression during aging: limited similarities between mouse and human and an

747 unexpectedly decreased inflammatory signature. *PLoS One.*
748 2012;7(3):e33204.
749 70. Lottaz C, Yang X, Scheid S, Spang R. OrderedList--a bioconductor
750 package for detecting similarity in ordered gene lists. *Bioinformatics.*
751 2006;22(18):2315-2316.
752 71. Shimodaira H. An approximately unbiased test of phylogenetic tree
753 selection. *Syst Biol.* 2002;51(3):492-508.
754

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

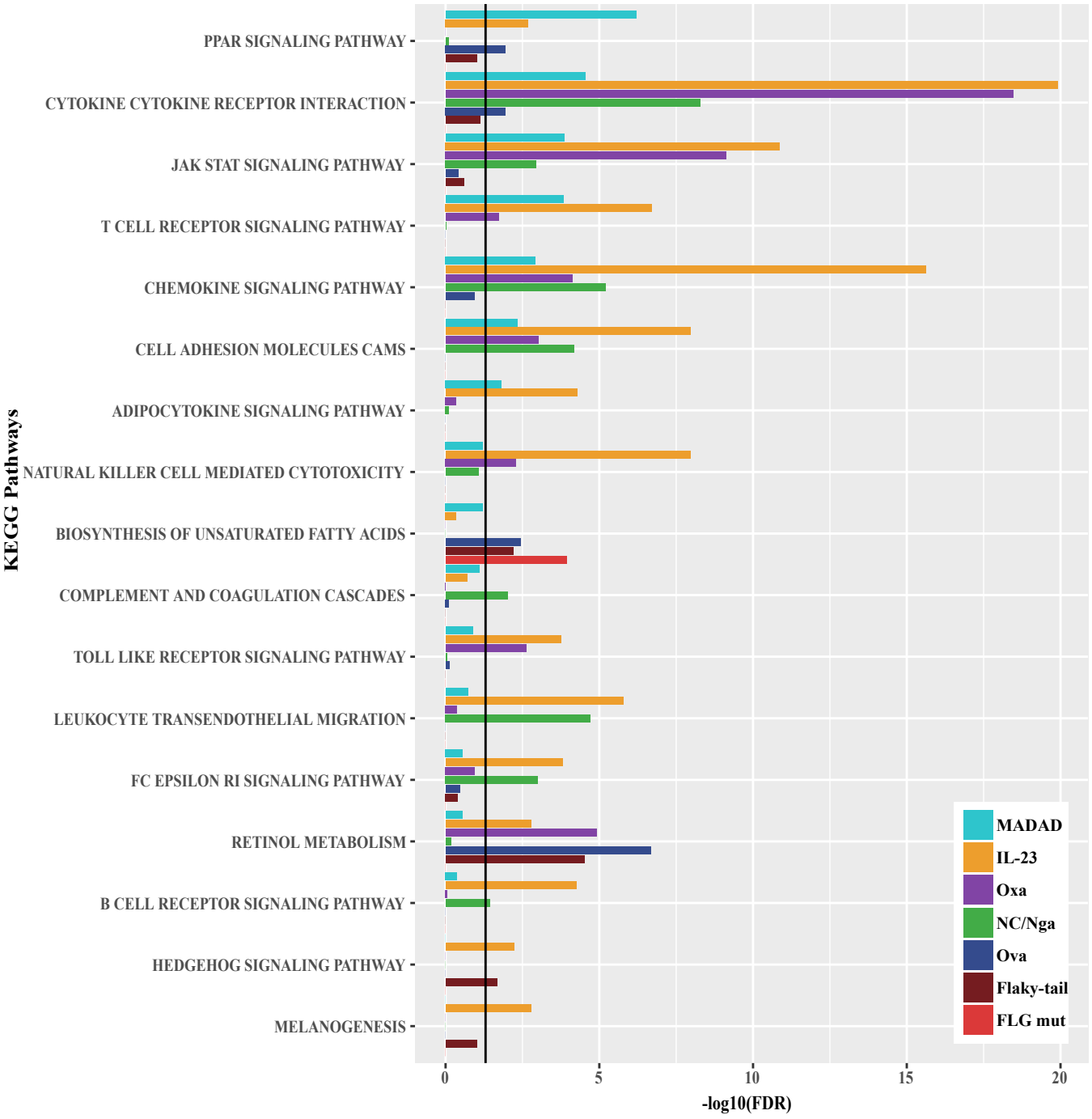
Figure 1



ACCEPTED MANUSCRIPT

Figure 2

A



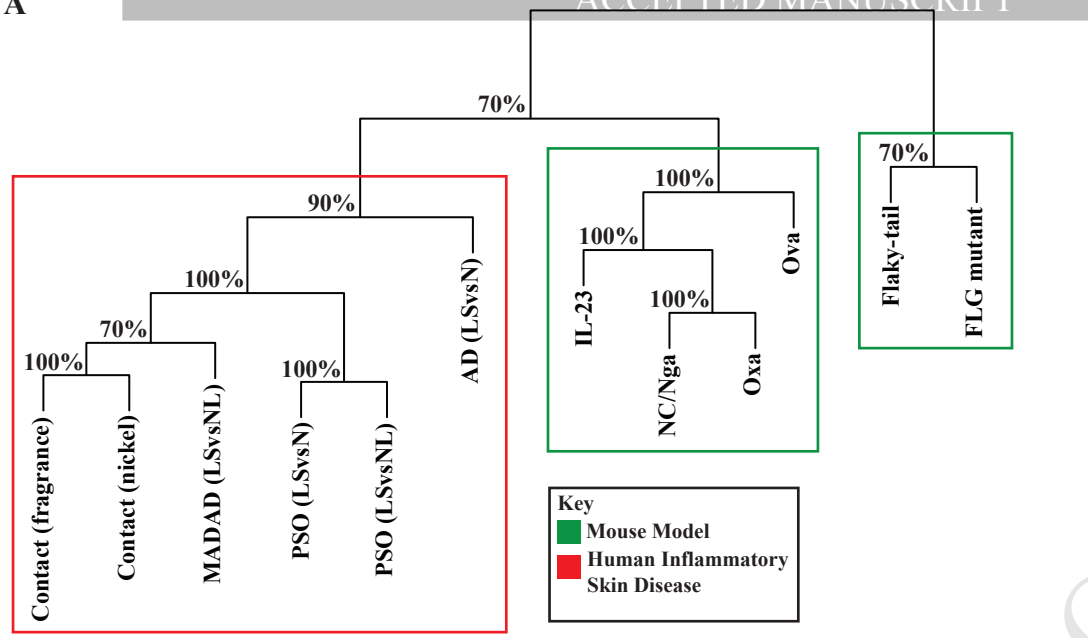
B

	Gene Name	MADAD	Flaky-tail	FLG	NC/Nga	Ova	Oxa	IL-23
1	SERPINB4	3.86***	3.21***	-0.40	2.27**	3.96**	2.85***	6.72***
2	S100A9	3.82***	3.37***	-0.87	3.84**	1.48*	4.97***	4.18***
3	SERPINB3	3.78***	3.21***	-0.40	2.27**	3.96**	2.85***	6.72***
4	MMP1	3.76***	-0.04	0.10	N/A	0.55	-0.18	-0.74**
5	MMP12	3.48***	0.18	0.43	0.78*	1.06	1.50***	1.97***
6	AKR1B10	3.16***	0.27	0.27	0.07	0.15	0.26	0.08
7	C10orf99	3.06***	1.04	-1.16	3.85***	3.19	4.48***	5.22***
8	OASL	2.92***	-0.05	-0.11	0.53	0.15	0.61*	2.02**
9	TMPRSS4	2.78***	-0.03	-0.51	0.18	0.45	0.19	1.18***
10	GZMB	2.61***	-0.12	0.10	1.17*	-0.09	2.99***	4.37***
11	SERPINB13	2.60***	-0.12	-0.12	N/A	-0.51	0.97*	-0.33
12	FOSL1	2.56***	-0.29	-0.64	1.73*	0.97	0.96*	0.70
13	SELE	2.43***	0.88**	0.50	1.89**	1.67**	2.15***	1.37***
14	ARNTL2	2.41***	0.16	0.02	0.41	0.18	0.42	0.66***
15	SPRR3	2.39***	0.07	0.16	0.21	0.23	0.07	0.55
16	SPRR1A	2.35***	-0.02	-1.14	4.73***	2.71**	1.99***	2.52***
17	COL4A4	2.35***	-0.29	-0.20	-0.49	-0.07	-0.13	0.05
18	CLEC7A	2.34***	0.56	0.37	2.73**	1.01	1.85***	2.24***
19	COL6A5	2.30***	-1.18*	-0.41	1.69*	1.94***	1.07**	0.20
20	CXCL10	2.26***	0.08	0.63	0.47	1.47*	6.18***	3.00***
21	CCL18	2.24***	-0.29	-0.38	3.56**	0.13	5.14***	5.09***
22	HPSE	2.22***	-0.12	-0.27	0.99**	0.90*	1.27***	0.41
23	S100A8	2.19***	4.27***	-0.77	4.65**	1.51	4.82***	4.45***
24	RRM2	2.15***	0.56	0.08	0.91*	0.47	1.17***	1.08**
25	IL36G	2.14***	0.21	-0.33	1.22**	1.35***	1.20***	1.53**
26	NR4A3	2.10***	-0.12	-0.23	1.88*	1.06**	0.07	0.47
27	PRSS53	2.09***	0.93*	0.21	0.44*	-1.30*	0.16	1.16
28	KRT16	2.09***	1.37*	-1.40*	4.89***	3.21**	3.71***	3.01***
29	RGS1	2.07***	0.60	-0.03	0.45	0.76*	1.26***	3.12***
30	EPSTI1	2.01***	-0.19	0.10	0.77**	0.50	0.24	1.61**
1	PM20D1	-2.63**	0.40	0.19	-0.46	-1.11*	0.31	-2.63**
2	HSD11B1	-2.28***	-0.42	-0.07	0.26	0.28	-0.07	1.05***
3	WIF1	-2.23***	-0.32	0.32	-0.57*	0.15	-0.91***	-1.20**
4	BTC	-2.06***	-0.09	0.57	-1.11**	-2.03***	0.13	-2.92***
5	GAL	-2.02*	0.00	-0.20	0.26	-0.07	0.14	1.47***
6	FABP7	-1.94***	2.14***	0.28	0.70*	-0.52	-0.04	2.05***
7	LEP	-1.90***	-0.67	0.14	-1.45***	1.04	-0.45	-2.40***
8	KANK4	-1.84***	-0.09	0.16	-0.32	-0.28	-0.17	-1.85***
9	PLIN4	-1.79***	-0.33	0.10	-0.94*	0.88	-0.83**	-1.51***
10	ZBTB16	-1.76***	-0.85***	-0.24	-0.83	-2.77***	-1.20***	-1.48***
11	TIMP4	-1.75***	-0.27	0.65*	-1.09*	-0.23	-0.91***	-1.79***
12	HMGCS2	-1.73***	-0.32	-0.25	-0.18	-1.80	-0.68**	-1.95***
13	ELOVL3	-1.71***	1.51***	0.23	0.12	2.07***	-0.27	0.54
14	SLC14A1	-1.68***	0.15	0.20	0.03	0.39	0.76***	1.38**
15	CIDEC	-1.68***	-0.50	-0.05	-0.68	0.80	-0.26	-2.10***
16	CLDN8	-1.67***	0.03	0.35	-0.95***	-0.82**	-0.32	-2.15***
17	GPD1	-1.63***	0.14	0.41	-0.56*	1.03**	-0.30	-0.99***
18	PHYHIP	-1.62***	-0.53	-0.14	-0.92*	-0.90**	-1.23***	-1.27***
19	THRSP	-1.59***	0.23	0.98*	-0.30	0.10	-0.44	-1.06*
20	TNMD	-1.58***	0.38	0.41	0.25	0.28	0.30	-1.74***
21	MYOC	-1.56***	-0.16	0.36	-1.15*	-0.64	-1.41***	-3.00***
22	FOLR1	-1.53***	0.18	0.11	0.01	-0.04	-0.19	1.62***
23	RBP4	-1.49***	0.22	0.21	-0.62*	-0.13	-1.00***	-1.80***
24	FABP4	-1.47***	0.04	0.40	-0.58*	-0.14	-0.21	-2.12***
25	ADIPOQ	-1.45**	0.44	0.76*	-0.40	0.86	-1.13	-1.54***
26	CIDEA	-1.41*	0.51**	0.25	-0.66*	0.95**	-1.14***	-0.63*
27	ANGPTL7	-1.40***	-0.36	0.15	-1.12*	-1.32	-0.69*	-0.94**
28	TMEM132C	-1.36***	0.09	0.05	0.56*	0.05	0.03	-1.52***
29	PPP1R1A	-1.36***	0.21	0.22	-0.30	-0.04	-0.20	-1.19**
30	AQP7	-1.34***	0.20	0.52	-0.42	-0.06	-0.12	-1.06**

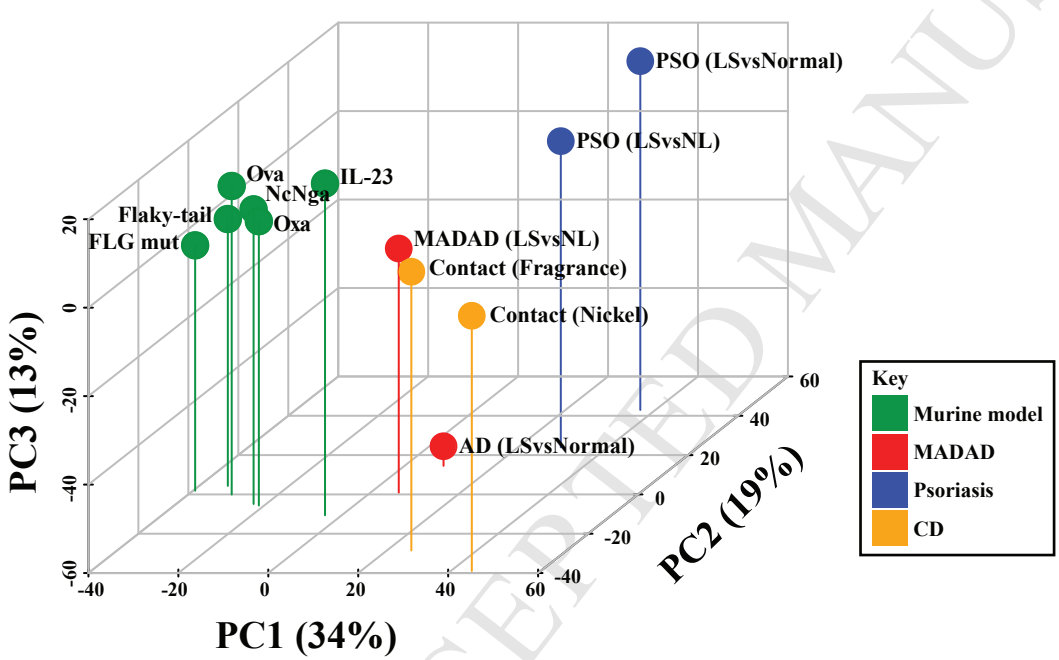
ACCEPTED MANUSCRIPT

Figure 3

A



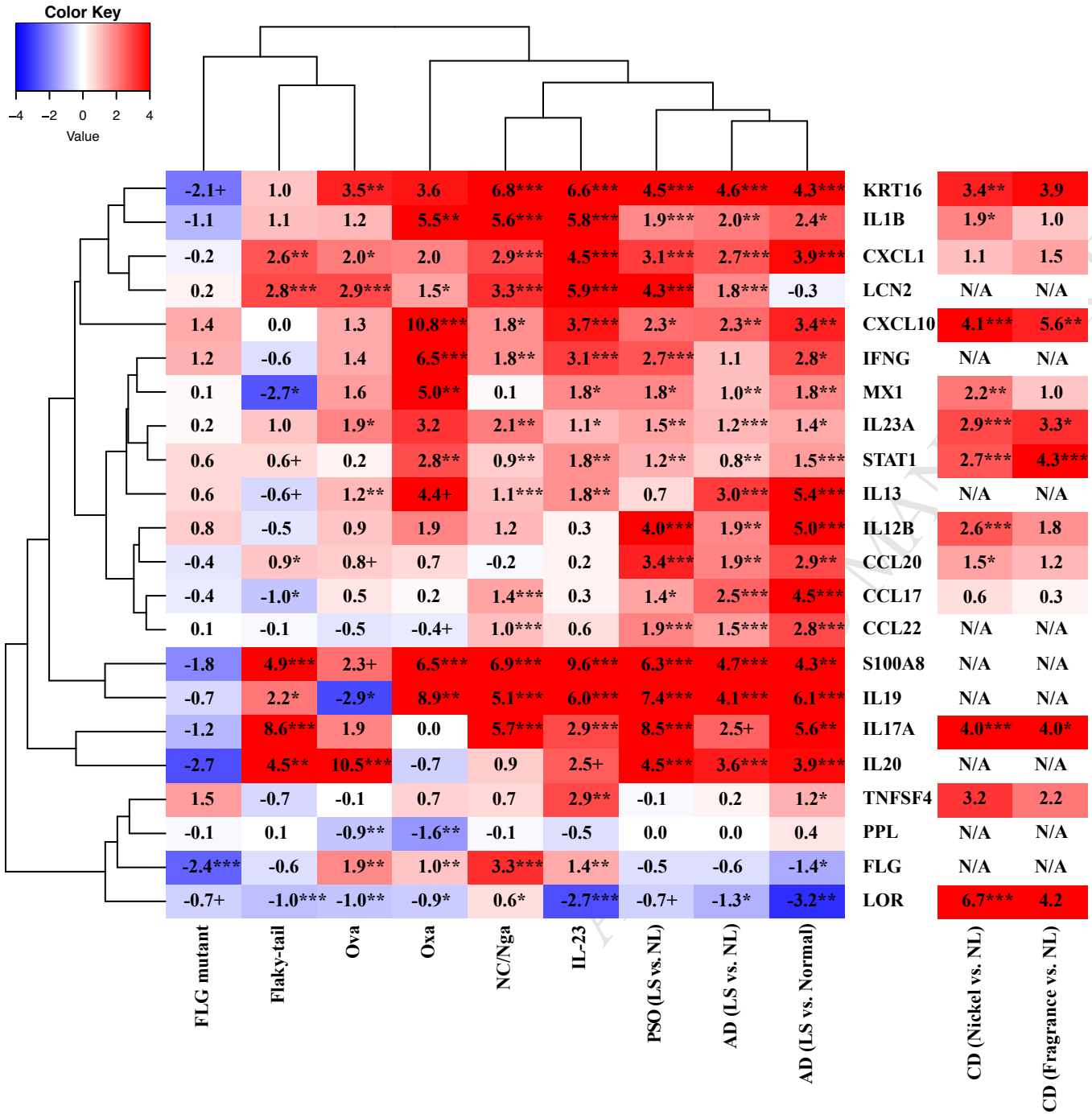
B



ACCEPTED MANUSCRIPT

Figure 4

ACCEPTED MANUSCRIPT



Supplementary Legends

Figure E1: Heatmap of the human MADAD genes with orthologs in murine models. The leftmost column represents the direction of dysregulation in MADAD (blue: down-regulated; red: up-regulated) whereas for each murine model, the group-wise Z-score represents the relative expression of MADAD genes in each model.

Figure E2: The murine samples' normalized expression values presented by: **A**) A boxplot of all mouse samples colored by dataset, and **B**) A heatmap of all overlapping mouse genes.

Table E1: Summary of clinical characteristics and demographics of patients (mean ± SE if not specified).

Table E2: Characteristics of studied populations.

Table E3: Primers used for qRT-PCR.

Table E4: DEGs in each murine AD model (models vs. controls).

Table E5: The log2(FCH) values are presented with their corresponding Benjamini adjusted p-value of each murine model contrast, for the MADAD DEGs

ACCEPTED MANUSCRIPT

(cut-off absolute FCH ≥ 2 and FDR ≤ 0.05). The status columns indicate the direction of dysregulation in each murine model (0 = not significant, 1 = significant up-regulation, -1 = significant down-regulation).

Table E6: -log(FDR) values for KEGG pathways in MADAD and murine models (significant pathways > 1.3 corresponding to FDR<0.05)

Table E7: Genes represented in each KEGG pathway

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

Table E4: DEGs in each murine AD model (models vs. controls)

Flaky-tail				FLG				NC/Nga				Ova				Oxa				IL-23			
Flaky-tail Log FCH	Flaky-tail BHadj P value	Flaky-tail HGNC Symbol	Flaky-tail Symbol	FLG Log FCH	FLG BHadj P value	FLG HGNC Symbol	FLG Symbol	NC/Nga Log FCH	NC/Nga BHadj P value	NC/Nga HGNC Symbol	NC/Nga Symbol	Ova Log FCH	Ova BHadj P value	Ova HGNC Symbol	Ova Symbol	Oxa Log FCH	Oxa BHadj P value	Oxa HGNC Symbol	Oxa Symbol	IL-23 Log FCH	IL-23 BHadj P value	IL-23 HGNC Symbol	IL-23 Symbol
4.68	0.012	NA	Gm3893	1.51	0.000	NA	Gm5478	6.19	0.002	KRT6C	Krt6b	4.83	0.002	KRT6C	Krt6b	6.84	0.000	KRT6A	Krt6b	6.72	0.000	Serpinb3a	SERPINB4
4.40	0.019	NA	Gm3893	1.51	0.015	SCD	Scd3	6.19	0.002	KRT6B	Krt6b	4.83	0.002	KRT6A	Krt6b	6.84	0.000	KRT6C	Krt6b	6.72	0.000	Serpinb3a	SERPINB3
4.31	0.018	NA	Gm3893	1.29	0.001	VSNL1	Vsnl1	6.19	0.002	KRT6A	Krt6b	4.83	0.002	KRT6B	Krt6b	6.84	0.000	KRT6B	Krt6b	6.63	0.000	Irg1	IRG1
4.27	0.000	S100A8	S100a8	1.22	0.025	TMEM47	Tmem47	5.82	0.000	NA	Saa3	4.76	0.000	CSTA	Stfa3	6.53	0.000	CXCL9	Cxcl9	6.25	0.000	Defb3	NA
4.00	0.023	NA	4933409K0	1.22	0.025	LGALS12	Lgals12	5.05	0.002	CSTA	Stfa2l1	4.36	0.000	GSDMC	Gsdmc	6.34	0.000	CHIA	Chil4	6.21	0.000	Clec4e	CLEC4E
3.89	0.000	CSTA	Stfa3	1.20	0.011	DHDH	Dhdh	4.99	0.000	GSDMC	Gsdmc	4.29	0.000	OLAH	Olah	6.18	0.000	CXCL10	Cxcl10	6.12	0.000	Krt6b	KRT6C
3.82	0.025	NA	Gm3893	1.15	0.000	PLAC9	Plac9b	4.92	0.000	CSTA	Stfa3	4.05	0.000	NA	Sprr2a3	6.16	0.000	CSTA	Stfa2	6.12	0.000	Krt6b	KRT6A
3.44	0.031	CCL27	Gm21075	1.15	0.049	NA	Gm20939	4.89	0.001	KRT16	Krt16	4.00	0.000	IGFL4	Igfl3	5.72	0.000	CXCL11	Cxcl11	6.12	0.000	Krt6b	KRT6B
3.41	0.000	KRT84	Krt84	1.14	0.002	TSHR	Tshr	4.83	0.003	CSTA	Gm5416	3.96	0.005	SERPINB3	Serpinb3a	5.66	0.000	NA	Iigp1	6.01	0.000	Sprr2i	NA
3.37	0.000	S100A9	S100a9	1.13	0.000	PLAC9	Plac9b	4.73	0.000	SPRR1A	Sprr1b	3.96	0.005	SERPINB4	Serpinb3a	5.53	0.000	CSTA	Gm5416	6.00	0.000	Saa1	NA
3.34	0.030	NA	Gm3893	1.13	0.000	PLAC9	Plac9b	4.73	0.000	SPRR1B	Sprr1b	3.74	0.000	IL20	Il20	5.35	0.000	GSDMC	Gsdmc	5.97	0.000	Saa3	NA
3.33	0.024	NA	Gm3893	1.11	0.000	TRHDE	Trhde	4.66	0.003	REG3A	Reg3g	3.66	0.000	IL36A	Il1f6	5.17	0.000	CSTA	Stfa2l1	5.92	0.000	Lce3a	NA
3.23	0.040	KRT28	Krt28	1.10	0.004	LRRN4CL	Lrrn4cl	4.66	0.003	REG3G	Reg3g	3.56	0.000	CSTA	Stfa1	5.14	0.000	CCL18	Ccl3	5.88	0.000	Uox	NA
3.21	0.000	SERPINB3	Serpinb3a	1.10	0.016	MYF6	Myf6	4.65	0.002	S100A8	S100a8	3.33	0.004	CYP2B6	Cyp2b23	5.14	0.000	CCL3L3	Ccl3	5.83	0.000	Saa2	NA
3.21	0.000	SERPINB4	Serpinb3a	1.08	0.018	PAPSS2	Papss2	4.63	0.002	IL1B	Il1b	3.29	0.000	NA	Scgb1b27	5.14	0.000	CCL3	Ccl3	5.74	0.000	Lce3f	NA
2.82	0.019	KRT73	Krt73	1.06	0.017	RETN	Retn	4.57	0.000	RPTN	Rptn	3.24	0.003	GSDMC	Gsdmc3	5.14	0.000	CCL3L3	Ccl3	5.67	0.000	Sprr2j-ps	NA
2.81	0.000	ENTPD4	Gm21464	1.02	0.043	CEACAM1	Ceacam1	4.52	0.006	IRG1	Irg1	3.23	0.000	NA	Sprr2a2	4.97	0.000	S100A9	S100a9	5.63	0.000	Gsdmc2	GSDMC
2.74	0.045	NA	Gm21158	1.02	0.043	CEACAM6	Ceacam1	4.47	0.006	CLEC4E	Clec4e	3.23	0.000	CSTA	BC117090	4.90	0.003	KRTAP15-1	Krtap15	5.60	0.000	Stfa2l1	CSTA
2.72	0.031	FAM205A	Gm7819	1.02	0.043	CEACAM7	Ceacam1	4.35	0.008	CXCL6	Cxcl5	3.21	0.003	KRT16	Krt16	4.90	0.003	KRTAP15-1	Krtap15	5.60	0.000	Cxcl2	CXCL3
2.64	0.048	NA	Gm3893	1.02	0.043	CEACAM8	Ceacam1	4.35	0.008	CXCL5	Cxcl5	3.19	0.001	C10orf99	2610528A1	4.88	0.000	RPTN	Rptn	5.60	0.000	Cxcl2	CXCL1
2.64	0.048	NA	Gm3893	1.02	0.043		Ceacam1	4.25	0.005	CHIA	Chil3	3.04	0.035	DEGS1	9130409I23	4.82	0.000	S100A8	S100a8	5.60	0.000	Cxcl2	CXCL2
2.60	0.001	CSTA	Gm5416	1.02	0.043	CEACAM5	Ceacam1	4.21	0.001	REG1B	Reg1	3.03	0.003	CSTA	Stfa2l1	4.78	0.000	NA	Tgtp2	5.50	0.000	Fetub	FETUB
2.54	0.000	CSTA	Stfa1	1.01	0.035	ACOT1	Acot2	4.21	0.001	REG1A	Reg1	2.95	0.001	CHI3L1	Chil1	4.67	0.000	GBP2	Gbp2b	5.32	0.000	Iltifb	IL22
2.52	0.029	FAM205A	LOC100862	1.01	0.035	ACOT2	Acot2	3.95	0.004	TREM1	Trem1	2.95	0.016	GSDMC	Gsdmc2	4.65	0.001	KRTAP8-1	Krtap8-1	5.26	0.000	Sprr2f	NA
2.51	0.036	DSG4	Dsg4	1.01	0.023	PPP1R27	Ppp1r27	3.93	0.001	CSTA	Stfa1	2.89	0.000	SGPP2	Sgpp2	4.64	0.000	NA	Tgtp2	5.24	0.000	Marco	MARCO
2.34	0.047	LYG2	Lyg2	-1.01	0.012	KLK13	Klk13	3.86	0.006	NA	Cxcl3	2.86	0.000	NA	Gm9696	4.63	0.000	IL19	Il19	5.22	0.000	2610528A1	C10orf99
2.31	0.000	AADACL3	Aadacl3	-1.03	0.005	C10orf10	8430408G2	3.85	0.001	C10orf99	2610528A1	2.84	0.000	AADACL4	Gm436	4.62	0.000	IRGM	Igtp	5.21	0.000	Sprr2d	NA
2.29	0.033	NA	Gm7819	-1.07	0.016	NPBWR1	Npbwr1	3.84	0.006	CCR1	Ccr1	2.84	0.001	PDSS1	Pdss1	4.57	0.000	CSTA	Stfa1	5.15	0.000	Wfdc12	WFDC12
2.27	0.002	SPTSSB	Sptssb	-1.11	0.002	NA	Lce1f	3.84	0.004	S100A9	S100a9	2.72	0.003	LILRA6	Lilr4b	4.56	0.000	IRGM	Irgm1	5.12	0.000	Fpr1	FPR1
2.25	0.000	AADACL4	Gm436	-1.12	0.002	NA	Hist2h2be	3.83	0.002	NA	Defb3	2.72	0.003	LILRA2	Lilr4b	4.48	0.000	C10orf99	2610528A1	5.11	0.000	Lce3b	NA
2.23	0.000	IL17F	Il17f	-1.12	0.002	SLC5A1	Slc5a1	3.82	0.003	NA	Sprr2e	2.72	0.003	LILRB1	Lilr4b	4.46	0.000	NA	Lce3a	5.09	0.000	Ccl3	CCL3L3
2.22	0.001	NA	Uox	-1.40	0.037	KRT16	Krt16	3.82	0.015	RETNLB	Retnlg	2.72	0.003	LILRB3	Lilr4b	4.43	0.000	KRTAP7-1	Krtap7-1	5.09	0.000	Ccl3	CCL18
2.14	0.000	FABP7	Fabp7	-1.40	0.033	SERPINA3	Serpina3j	3.78	0.001	LCE3B	Lce3d	2.72	0.003	LILRB2	Lilr4b	4.37	0.000	RTP4	Rtp4	5.09	0.000	Ccl3	CCL3
2.13	0.047	PADI1	Padi1	-1.40	0.033		Serpina3j	3.70	0.003	MMP13	Mmp13	2.72	0.003	LILRA1	Lilr4b	4.26	0.001	KRTAP9-1	Gm11559	5.09	0.000	Ccl3	CCL3L3
2.13	0.033	CRYBA4	Cryba4	-1.42	0.007	DDIT4	Ddit4	3.69	0.007	CLEC4D	Clec4d	2.72	0.003	LILRB3	Lilr4b	4.24	0.004	NA	Krtap6-2	5.07	0.000	Lpo	LPO
2.08	0.038	KRT82	Krt82	-1.48	0.045	SLCO1A2	Gm5724	3.68	0.000	CSTA	BC117090	2.72	0.003	LILRA4	Lilr4b	4.21	0.000	GBP6	Gbp10	4.88	0.000	Chil3	CHIA
2.04	0.039	LRRC15	Lrrc15	-1.51	0.005	ABHD12B	Abhd12b	3.66	0.000	SPINK7	Spink7	2.72	0.003	LILRB4	Lilr4b	4.20	0.000	NA	Gm4951	4.83	0.000	Ly6i	NA
2.04	0.000	SGPP2	Sgpp2	-1.61	0.017	NA	Lce1g	3.65	0.004	SIRPG	LOC100038	2.72	0.003	LILRB3	Lilr4b	4.17	0.000	KRT25	Krt25	4.82	0.000	Sprr2a1	NA
2.00	0.003	LRAT	Lrat	-2.30	0.000	NA	Rnu1b1	3.65	0.004	SIRPB1	LOC100038	2.72	0.003	LILRB5	Lilr4b	4.16	0.000	NA	Ifi47	4.81	0.000	Clec4d	CLEC4D
1.98	0.043	GABRP	Gabrp	-2.30	0.000	NA	Rnu1b1	3.65	0.004	SIRPA	LOC100038	2.72	0.003	LILRA5	Lilr4b	4.14	0.000	KRT71	Krt71	4.71	0.000	Slc13a3	SLC13A3
1.97	0.000	NA	5830411N0	-2.30	0.000	NA	Rnu1b1	3.61	0.000	FETUB	Fetub	2.72	0.003	LILRA6	Lilr4b	4.12	0.000	GBP2	Gbp2	4.63	0.000	Lcn2	LCN2
1.95	0.027	FBP1	Fbp1	-2.30	0.000	NA	Rnu1b1	3.58	0.009	SLFN12L	Slfn4	2.71	0.001	NA	Aox4	4.09	0.000	GBP6	Gbp4	4.62	0.000	Pla2g4d	PLA2G4D
1.95	0.018	ALOX15B	Alox8	-2.30	0.000	NA	Rnu1b1	3.58	0.009	SLFN12	Slfn4	2.71	0.001	SPRR1A	Sprr1b	4.08	0.000	CSTA	Stfa3	4.60	0.000	Chil4	CHIA
1.95	0.000	HACL1	Hacl1	-2.30	0.000	NA	Rnu1b1	3.56	0.008	CCL3	Ccl3	2.71	0.001	SPRR1B	Sprr1b	4.07	0.006	NA	Krtap21-1	4.58	0.000	Cxcl5	CXCL6
1.93	0.003	DHRS9	Dhrs9	-2.30	0.000	NA	Rnu1b1	3.56	0.008	CCL18	Ccl3	2.65	0.026	CPA3	Cpa3	4.05	0.000	IFIT1B	Ifit1	4.58	0.000	Cxcl5	CXCL5
1.92	0.001	ATP12A	Atp12a	-2.30	0.000	NA	Rnu1b1	3.56	0.008	CCL3L3	Ccl3	2.64	0.001	RNASE3	Rnase2a	4.02	0.000	IL24	Il24	4.50	0.000	Jchain	JCHAIN
1.92	0.034	KRT75	Krt75	-2.30	0.000	NA	Rnu1b1	3.56	0.008	CCL3L3	Ccl3	2.64	0.001	RNASE2	Rnase2a	3.94	0.000	KRT83	Krt86	4.48	0.000	Saa2	NA
1.91	0.001	BLK	Blk					3.51	0.002	TIMP1	Timp1	2.62	0.002	AADACL4	Gm13124	3.94	0.000	KRT81	Krt86	4.45	0.000	S100a8	S100A8
1.90	0.018	FAM205A	Gm21158					3.42	0.000	KRT6A	Krt6a	2.57	0.001	RGS4	Rgs4	3.94	0.000	KRT86	Krt86	4.43	0.000	Il1b	IL1B
1.90	0.018	FAM205A	Gm21158					3.42	0.000	KRT6C	Krt6a	2.51	0.009	AKR1D1	Akr1d1	3.93	0.005	NA	Krtap6-5	4.39	0.000	Sell	SELL
1.90	0.000	RPTN	Rptn					3.42	0.000	KRT6B	Krt6a	2.50	0.000	RPTN	Rptn	3.90	0.007	NA	Krtap6-1	4.37	0.000	Gzmb	GZMB
1.90	0.030	PINLYP	Pinlyp					3.40	0.000	TMPRSS11	Tmprss11a	2.49	0.000	NA	Sprr2b	3.90	0.000	NA	Sprr2f	4.26	0.000	Ccl5	CCL5
1.88	0.000	NA	Aox4					3.38	0.007	SELL	Sell	2.47	0.000	AADACL3	Aadacl3	3.90	0.003	NA	Gm10229	4.26	0.000	Marco	MARCO
1.88	0.049	NA	Krtap21-1					3.34	0.004	CSF3R	Csf3r	2.45	0.001	SERPINB12	Serpinb12	3.85	0.000	TCHH	Tchh	4.18	0.000	S100a9	S100A9
1.87	0.000	IL23R	Il23r					3.20	0.000	NA	Lce3e	2.41	0.001	CXCR2	Cxcr2	3.84	0.000	KRT6C	Krt6a	4.15	0.000	Sell	SELL
1.86	0.028	NA	Saa3					3.19	0.014	CCL4	Ccl4	2.41	0.006	CSTA	BC100530	3.84	0.000	KRT6A	Krt6a	4.02	0.000	Fpr2	FPR3

ACCEPTED MANUSCRIPT

1.80	0.000	ANKK1	Ankk1
1.79	0.006	SLC7A11	Slc7a11
1.78	0.004	RDH16	Rdh18-ps
1.73	0.000	CYP1A1	Cyp1a1
1.73	0.001	NA	Wfdc18
1.69	0.000	HILPDA	Hilpda
1.69	0.005	IL20	Il20
1.69	0.013	KRT36	Krt36
1.67	0.026	ELF5	Elf5
1.66	0.001	IKZF3	Ikzf3
1.63	0.000	SLC5A8	Slc5a8
1.62	0.018	TYR	Tyr
1.61	0.039	GJB2	Gjb2
1.61	0.000	CFAP69	Cfap69
1.58	0.000	LCN2	Lcn2
1.57	0.000	KLK13	Klk13
1.52	0.006	DSC2	Dsc2
1.51	0.000	VNN3	Vnn3
1.51	0.001	TRAV23DV	A630038E17Rik
1.51	0.000	NA	Sprr2d
1.51	0.000	ELOVL3	Elovl3
1.50	0.000	CXCR6	Cxcr6
1.49	0.000	FFAR4	Ffar4
1.49	0.000	AWAT1	Awat1
1.49	0.013	CSTA	BC117090
1.47	0.000	EPGN	Epgn
1.46	0.007	NA	Cmah
1.44	0.022	KRT40	Krt40
1.43	0.002	GJA1	Gja1
1.43	0.000	FETUB	Fetub
1.42	0.000	NA	Defb6
1.42	0.000	HMGCR	Hmgcr
1.42	0.022	CYP2B6	Cyp2b23
1.42	0.006	IL36A	Il1f6
1.41	0.008	C15orf48	AA467197
1.41	0.001	LGI2	Lgi2
1.41	0.001	TYRP1	Tyrp1
1.39	0.020	KRT32	Krt32
1.38	0.003	CA2	Car2
1.37	0.033	NA	Defb3
1.37	0.018	KRT16	Krt16
1.35	0.001	CHI3L1	Chil1
1.31	0.000	VSNL1	Vsnl1
1.31	0.015	GSDMA	Gsdma3
1.30	0.019	NA	Wfdc17
1.30	0.000	ERO1A	Ero1l
1.28	0.002	ALDH1A3	Aldh1a3
1.26	0.001	AREG	Areg
1.26	0.000	ZC3H12A	Zc3h12a
1.26	0.002	PI15	Pi15
1.25	0.005	TLCD2	Tlcd2
1.24	0.005	SHH	Shh
1.24	0.030	NA	Gm20736
1.24	0.030	NA	Gm20736
1.24	0.030	NA	Gm20736
1.24	0.030	NA	Gm20736
1.24	0.030	NA	Gm20736
1.24	0.030	NA	Gm20736
1.24	0.030	NA	Gm20736
1.24	0.030	NA	Gm20736
1.24	0.030	NA	Gm20736
1.23	0.006	EDNRB	Ednrb
1.21	0.000	AADACL4	Gm438
1.21	0.004	CASP5	Casp4
1.20	0.030	GJB6	Gjb6
1.20	0.043	TAF1D	Taf1d
1.19	0.001	LIPG	Lipg
1.19	0.002	BCL3	Bcl3
3.17	0.008	NA	Trem3
3.16	0.000	NA	Sprr2a2
3.16	0.007	HDC	Hdc
3.12	0.046	FPR3	Fpr2
3.12	0.046	FPR2	Fpr2
3.10	0.002	NA	Sprr2d
3.05	0.004	PTGS2	Ptgs2
3.03	0.009	CD14	Cd14
3.00	0.019	SIRPB1	Sirpb1b
3.00	0.019	SIRPG	Sirpb1b
3.00	0.019	SIRPA	Sirpb1b
2.97	0.001	TNC	Tnc
2.97	0.011	NA	Trim30b
2.95	0.007	SLC7A11	Slc7a11
2.94	0.003	TMPRSS11	Tmprss11d
2.92	0.002	TMPRSS11	Tmprss11b
2.92	0.000	WFDC12	Wfdc12
2.91	0.027	FPR1	Fpr1
2.89	0.000	IL36A	Il1f6
2.87	0.000	RBP2	Rbp2
2.85	0.001	CA2	Car2
2.82	0.000	KLK13	Klk13
2.78	0.004	IL6	Il6
2.73	0.006	CLEC7A	Clec7a
2.69	0.000	AKR1D1	Akr1d1
2.69	0.004	SLPI	Slpi
2.67	0.001	FGF23	Fgf23
2.61	0.001	COL12A1	Col12a1
2.57	0.000	GJB2	Gjb2
2.57	0.001	DDAH1	Ddah1
2.57	0.011	SIRPB2	Gm5150
2.53	0.000	DHRS9	Dhrs9
2.53	0.000	NA	Sprr2b
2.49	0.000	NA	Ccl8
2.47	0.019	IL18RAP	Il18rap
2.44	0.045	NLRP3	Nlrp3
2.44	0.008	CXCR2	Cxcr2
2.43	0.004	PLAUR	Plaur
2.42	0.001	TNN	Tnn
2.40	0.010	EPGN	Epgn
2.40	0.002	NRG1	Nrg1
2.37	0.007		Gm9733
2.34	0.001	GJB6	Gjb6
2.32	0.001	F5	F5
2.31	0.000	PRSS35	Prss35
2.31	0.001	ADAM12	Adam12
2.29	0.009	SIRPG	Sirpb1a
2.29	0.009	SIRPB1	Sirpb1a
2.29	0.009	SIRPA	Sirpb1a
2.29	0.043	MMP8	Mmp8
2.28	0.000	NMU	Nmu
2.27	0.004	NA	Cyp2g1
2.27	0.035	CYP4F3	Cyp4f18
2.27	0.002	SERPINB3	Serpinb3a
2.27	0.002	SERPINB4	Serpinb3a
2.26	0.010	KLK14	Klk14
2.26	0.012	SLFN12	Slfn1
2.26	0.012	SLFN12L	Slfn1
2.25	0.000	LCE3B	Lce3c
2.24	0.002	NA	Sprr2h
2.23	0.001	IGFL4	Igfl3
2.23	0.004	LILRA5	Lilrb4a
2.23	0.004	LILRB1	Lilrb4a
2.23	0.004	LILRA6	Lilrb4a
2.23	0.004	LILRB3	Lilrb4a
2.23	0.004	LILRA4	Lilrb4a
2.23	0.004	LILRB2	Lilrb4a
2.23	0.004	LILRA2	Lilrb4a
2.37	0.001	AADACL4	Gm438
2.35	0.000	DEGS2	Degs2
2.31	0.003	MS4A2	Ms4a2
2.29	0.026	RETNLB	Retnla
2.27	0.002	FCER1A	Fcer1a
2.26	0.000	ADGRG7	Adgrg7
2.22	0.032	NA	Scgb2b24
2.17	0.000	IL36B	Il1f8
2.14	0.001	KLK6	Klk6
2.12	0.035	NA	Lce3f
2.12	0.009	TNN	Tnn
2.10	0.019	MS4A6E	Ms4a6d
2.10	0.019	MS4A6A	Ms4a6d
2.09	0.030	MRGPRX1	Mrgprb1
2.09	0.030	MRGPRX2	Mrgprb1
2.09	0.030	MRGPRX3	Mrgprb1
2.09	0.030	MRGPRX4	Mrgprb1
2.07	0.000	ELOVL3	Elovl3
2.06	0.002	LYNX1	2300005B0
2.05	0.001	NA	Lce1g
2.01	0.022	MMP3	Mmp3
2.01	0.003	ATP13A5	Atp13a5
2.00	0.000	SERPINB3	Serpinb3b
2.00	0.000	SERPINB4	Serpinb3b
1.99	0.007	NA	Gm3336
1.98	0.009	LILRA6	Lilrb4a
1.98	0.009	LILRA5	Lilrb4a
1.98	0.009	LILRA4	Lilrb4a
1.98	0.009	LILRB3	Lilrb4a
1.98	0.009	LILRB2	Lilrb4a
1.98	0.009	LILRB1	Lilrb4a
1.98	0.009	LILRA2	Lilrb4a
1.98	0.009	LILRB3	Lilrb4a
1.98	0.009	LILRB4	Lilrb4a
1.98	0.009	LILRA6	Lilrb4a
1.98	0.009	LILRB3	Lilrb4a
1.98	0.009	LILRA1	Lilrb4a
1.98	0.009	LILRB5	Lilrb4a
1.97	0.022	CXCL9	Cxcl9
1.97	0.002	NA	Lce1k
1.97	0.002	SELP	Selp
1.97	0.009	PF4V1	Pf4
1.97	0.009	PF4	Pf4
1.95	0.022	MRC1	Mrc1
1.95	0.007	RDH16	Rdh18-ps
1.94	0.003	TPH1	Tph1
1.94	0.007	LRRC17	Lrrc17
1.94	0.000	COL6A5	Col6a5
1.92	0.025	NA	Mcpt4
1.92	0.000	SLC16A1	Slc16a1
1.91	0.005	ACOT2	Acot5
1.91	0.005	ACOT1	Acot5
1.91	0.000	SPINK7	Spink7
1.91	0.003	SPRY3	Spry3
1.91	0.046	LOX	Lox
1.90	0.011	SERPINA3	Serpina3j
1.90	0.011		Serpina3j
1.89	0.009	CMA1	Cma1
1.89	0.000	FAM3B	Fam3b
1.89	0.036	NA	Sprr2e
1.88	0.005	KLK13	Klk13
1.88	0.000	IDI1	Idi1
1.88	0.004	XKR9	Xkr9
1.87	0.008	BCL2L15	Bcl2l15
1.86	0.002	RGN	Rgn
1.85	0.000	RBP2	Rbp2
1.84	0.017	TNFAIP6	Tnfaip6
1.83	0.015	CTSK	Ctsk
3.84	0.000	KRT6B	Krt6a
3.84	0.000	IFI44	Ifi44
3.77	0.007	NA	Gm10229
3.71	0.000	KRT16	Krt16
3.70	0.000	IRF1	Irf1
3.68	0.001	KRTAP13-1	Krtap13-1
3.68	0.001	KRTAP13-2	Krtap13-1
3.66	0.000	GBP2	Gbp5
3.65	0.000	TMEM173	Tmem173
3.62	0.006	NA	Krtap19-3
3.62	0.000	CSTA	BC117090
3.60	0.000	NA	Oasl2
3.58	0.000	IL1B	Il1b
3.58	0.000	NA	Ccl8
3.57	0.000	NA	Sprr2g
3.53	0.000	NA	Lce3f
3.52	0.000	AREG	Areg
3.51	0.000	NA	Lce3e
3.51	0.000	CXCL3	Cxcl2
3.51	0.000	CXCL2	Cxcl2
3.51	0.000	CXCL1	Cxcl2
3.49	0.007	NA	Gm10228
3.48	0.000	GBP7	Gbp3
3.48	0.000	GBP4	Gbp3
3.48	0.000	PARP14	Parp14
3.44	0.000	FAM26D	Fam26d
3.44	0.000	WFDC12	Wfdc12
3.43	0.000	NA	Cyp2g1
3.41	0.000	NA	Sprr2e
3.39	0.000	NA	Gm35174
3.39	0.000	KRT27	Krt27
3.38	0.000	KRT33A	Krt33a
3.38	0.000	KRT34	Krt33a
3.38	0.000	KRT33B	Krt33a
3.38	0.000	KRT31	Krt33a
3.38	0.000	TIMP1	Timp1
3.35	0.003	KRTAP9-1	Gm11567
3.33	0.000	KRTAP24-1	Krtap24-1
3.33	0.004	NA	Krtap19-2
3.33	0.000	NA	Nppb
3.32	0.000	NA	Defb3
3.30	0.001	KRTAP4-1	Krtap4-16
3.30	0.000	SLFN12	Slfn2
3.30	0.000	SLFN12L	Slfn2
3.29	0.000	KLK6	Klk6
3.29	0.000	RBP2	Rbp2
3.27	0.000	GBP4	Gbp7
3.27	0.000	GBP7	Gbp7
3.25	0.000	KLK13	Klk13
3.25	0.000	AKR1D1	Akr1d1
3.24	0.004	NA	Krtap16-3
3.24	0.003	KRTAP3-3	Krtap3-3
3.24	0.003	KRTAP3-2	Krtap3-3
3.24	0.000	UBD	Ubd
3.21	0.002	NA	Krtap14
3.18	0.000	CCR2	Ccr5
3.17	0.000	NA	Ifi202b
3.17	0.000	S100A3	S100a3
3.17	0.000	NA	Sprr2i
3.16	0.000	IL6	Il6
3.15	0.002	CCL2	Ccl2
3.13	0.000	SAMHD1	Samhd1
3.12	0.002	NA	Gm11569
3.10	0.000	NA	Gm4841
3.04	0.000	NA	Sprr2j-ps
2.99	0.000	GZMB	Gzmb
2.98	0.000	NA	Krt26
2.97	0.000	PHF11	Phf11d
4.02	0.000	Fpr2	FPR2
4.00	0.000	Gzma	GZMA
3.99	0.000	Klra2	NA
3.92	0.000	Chil1	CHI3L1
3.92	0.000	Prss27	PRSS27
3.92	0.000	Slc13a3	SLC13A3
3.90	0.000	Alox8	ALOX15B
3.90	0.000	Il6	IL6
3.89	0.000	Klk13	KLK13
3.85	0.000	Ccl4	CCL4
3.82	0.000	Cxcl1	CXCL3
3.82	0.000	Cxcl1	CXCL2
3.82	0.000	Cxcl1	CXCL1
3.80	0.000	Slpi	SLPI
3.78	0.000	Mzb1	MZB1
3.77	0.000	Klra7	NA
3.73	0.000	Bcl2l15	BCL2L15
3.67	0.000	Gpr65	GPR65
3.67	0.000	Klra8	NA
3.67	0.000	Clec4e	CLEC4E
3.66	0.000	Cxcl3	NA
3.65	0.000	Sirpb1a	SIRPA
3.65	0.000	Sirpb1a	SIRPG
3.65	0.000	Sirpb1a	SIRPB1
3.64	0.000	Lce3c	LCE3B
3.63	0.000	Timp1	TIMP1
3.62	0.000	Gimap7	GIMAP7
3.61	0.000	Cxcl1	CXCL3
3.61	0.000	Cxcl1	CXCL2
3.61	0.000	Cxcl1	CXCL1
3.58	0.000	Lair1	LAIR1
3.58	0.000	Lair1	LAIR2
3.56	0.000	Slc5a1	SLC5A1
3.56	0.000	Serpinb3a	SERPINB4
3.56	0.000	Serpinb3a	SERPINB3
3.56	0.000	Serpinb3a	SERPINB4
3.56	0.000	Serpinb3a	SERPINB3
3.55	0.000	Cxcl1	CXCL3
3.55	0.000	Cxcl1	CXCL2
3.55	0.000	Cxcl1	CXCL1
3.53	0.000	Gsdmc	GSDMC
3.50	0.000	Sprr2a1	NA
3.45	0.000	Hdc	HDC
3.45	0.000	Cxcl9	CXCL9
3.44	0.000	Pou2af1	POU2AF1
3.44	0.002	Myh3	MYH3
3.43	0.000	Cd5l	CD5L
3.41	0.000	Fasl	FASLG
3.41	0.000	Mcemp1	MCEMP1
3.40	0.000	Il1f6	IL36A
3.39	0.000	Mrgpra2b	MRGPRX3
3.39	0.000	Mrgpra2b	MRGPRX4
3.39	0.000	Mrgpra2b	MRGPRX2
3.39	0.000	Mrgpra2b	MRGPRX1
3.36	0.000	Tlr13	NA
3.36	0.001	Tnnc1	TNNC1
3.35	0.000	Sh2d1a	SH2D1A
3.32	0.000	Cdhr1	CDHR1
3.29	0.000	Il1rl1	IL1RL1
3.29	0.000	Gimap3	GIMAP1-GI
3.29	0.000	Gimap3	GIMAP5
3.28	0.000	Ifit1bl1	IFIT1B
3.28	0.000	Tnc	TNC
3.27	0.000	Slc7a11	SLC7A11
3.26	0.000	Ptx3	PTX3
3.26	0.000	Ubd	UBD
3.24	0.000	Lair1	LAIR1
3.24	0.000	Lair1	LAIR2

ACCEPTED MANUSCRIPT

1.18	0.002	TNFAIP6	Tnfaip6
1.17	0.010	TMPRSS11	Tmprss11e
1.17	0.043	SLC7A8	Slc7a8
1.16	0.004	RBP2	Rbp2
1.16	0.001	IDI1	Idi1
1.15	0.010	NA	AI504432
1.15	0.029	KRT17	Krt17
1.15	0.022	LURAP1L	Lurap1l
1.15	0.000	KRT1	Krt1
1.15	0.013	SYTL2	Sytl2
1.14	0.001	AADACL4	Gm13177
1.14	0.031	RNASE2	Ear1
1.14	0.031	RNASE3	Ear1
1.14	0.000	FAR1	Far1
1.14	0.008	JMJD7-PLA	Pla2g4b
1.14	0.008	JMJD7-PLA	Pla2g4b
1.14	0.008	PLA2G4B	Pla2g4b
1.13	0.026	LEF1	Lef1
1.13	0.009	DGAT1	Dgat1
1.13	0.029	CSTA	BC100530
1.12	0.002	ACOT2	Acot5
1.12	0.002	ACOT1	Acot5
1.12	0.029	MKRN2OS	Mkrn2os
1.12	0.002	KLK6	Klk6
1.12	0.004	RBP1	Rbp1
1.11	0.002	IL17A	Il17a
1.10	0.002	TAC4	Tac4
1.10	0.003	SLC39A10	Slc39a10
1.09	0.025	ATF3	Atf3
1.08	0.001	BARX2	Barx2
1.07	0.006	CCL28	Ccl28
1.07	0.016	NA	Gm5538
1.07	0.002	MANSC1	Mansc1
1.07	0.013	SYT4	Syt4
1.06	0.002	SLC16A7	Slc16a7
1.06	0.001	DGAT2L6	Dgat2l6
1.05	0.018	SLC27A6	Slc27a6
1.05	0.034	SLC39A8	Slc39a8
1.04	0.036	NA	Sprr1a
1.04	0.037	NA	Gm20736
1.04	0.003	DEGS2	Degs2
1.04	0.001	SPON2	Spon2
1.03	0.000	TMEM56-R	Tmem56
1.03	0.025	BMP8B	Bmp8a
1.03	0.025	BMP8A	Bmp8a
1.02	0.004	DCT	Dct
1.01	0.022	FAM167A	Fam167a
1.01	0.022	PMEL	Pmel
1.01	0.000	SOX7	Sox7
1.00	0.000	STEAP4	Steap4
1.00	0.014	CASP14	Casp14
-1.00	0.000	SLC6A4	Slc6a4
-1.00	0.000	ALOXE3	Aloxe3
-1.00	0.000	IL22RA1	Il22ra1
-1.01	0.032	TRAT1	Trat1
-1.02	0.002	NA	Calm5
-1.02	0.000		Il6ra
-1.04	0.001	ATP1B2	Atp1b2
-1.05	0.001	WNK4	Wnk4
-1.06	0.002	TNNT2	Tnnt2
-1.06	0.005	PROB1	Prob1
-1.07	0.000	NA	Lce1m
-1.08	0.003	NA	Lce1d
-1.09	0.020	KCNJ16	Kcnj16
-1.10	0.003	NA	Gm5127
-1.11	0.000	NA	Mirlet7c-2
-1.11	0.005	NA	1700030C10Rik
-1.12	0.000	SERPINA12	Serpina12

2.23	0.004	LILRB4	Lilrb4a
2.23	0.004	LILRA6	Lilrb4a
2.23	0.004	LILRB3	Lilrb4a
2.23	0.004	LILRB5	Lilrb4a
2.23	0.004	LILRA1	Lilrb4a
2.23	0.004	LILRB3	Lilrb4a
2.22	0.001	GSDMC	Gsdmc3
2.20	0.006	MRGPRX4	Mrgpra2a
2.20	0.006	MRGPRX1	Mrgpra2a
2.20	0.006	MRGPRX2	Mrgpra2a
2.20	0.006	MRGPRX3	Mrgpra2a
2.19	0.001	MS4A6E	Ms4a6d
2.19	0.001	MS4A6A	Ms4a6d
2.18	0.000	NA	Tdh
2.18	0.004	MMP3	Mmp3
2.15	0.009	LILRB2	Lilr4b
2.15	0.009	LILRB3	Lilr4b
2.15	0.009	LILRB4	Lilr4b
2.15	0.009	LILRB3	Lilr4b
2.15	0.009	LILRB3	Lilr4b
2.15	0.009	LILRA4	Lilr4b
2.15	0.009	LILRA6	Lilr4b
2.15	0.009	LILRB1	Lilr4b
2.15	0.009	LILRA5	Lilr4b
2.15	0.009	LILRA6	Lilr4b
2.15	0.009	LILRB5	Lilr4b
2.15	0.009	LILRA1	Lilr4b
2.15	0.009	LILRA2	Lilr4b
2.14	0.010	NA	Tlr13
2.12	0.010	CLEC6A	Clec4n
2.11	0.001	OLAH	Olah
2.10	0.000	PLA2G4E	Pla2g4e
2.09	0.002	NA	Sprr2g
2.09	0.001	KLK6	Klk6
2.06	0.003	LCN2	Lcn2
2.05	0.001	FBN2	Fbn2
2.05	0.027	TREML4	Treml4
2.04	0.002	SELP	Selp
2.03	0.001	CDHR1	Cdhr1
2.03	0.015	NA	Sprr2j-ps
2.02	0.001	VCAN	Vcan
2.00	0.001	FHL2	Fhl2
1.99	0.006	HAS3	Has3
1.98	0.004	CPXM1	Cpxm1
1.97	0.001	CCL15-CCL	Ccl6
1.97	0.001	CCL23	Ccl6
1.97	0.001	CCL15	Ccl6
1.96	0.002	CCL8	Ccl12
1.96	0.000	CASP14	Casp14
1.96	0.004	FCGR1B	Fcgr1
1.96	0.004	FCGR1A	Fcgr1
1.96	0.001	CHI3L1	Chil1
1.95	0.015	OSM	Osm
1.93	0.012	MMP9	Mmp9
1.92	0.014	LRRC15	Lrrc15
1.92	0.003	MS4A4E	Ms4a4a
1.92	0.003	MS4A4A	Ms4a4a
1.92	0.028	SERPINE1	Serpine1
1.90	0.019	P4HA3	P4ha3
1.89	0.006	SELE	Sele
1.89	0.005	MMP19	Mmp19
1.88	0.018	NR4A3	Nr4a3
1.87	0.005	IL19	Il19
1.86	0.006	TUBB6	Tubb6
1.86	0.001	RBP1	Rbp1
1.86	0.011	AREG	Areg
1.85	0.034	NA	Sprr2a3
1.84	0.013	PI15	Pi15

1.82	0.046	TPSD1	Tpsb2
1.82	0.046	TPSAB1	Tpsb2
1.82	0.046	TPSB2	Tpsb2
1.82	0.000	NA	Teddm3
1.81	0.016	DIO2	Dio2
1.79	0.001	HILPDA	Hilpda
1.78	0.001	HSD3B1	Hsd3b6
1.78	0.001	HSD3B2	Hsd3b6
1.77	0.023	LCN2	Lcn2
1.77	0.001	CYP2B6	Cyp2b9
1.77	0.020	IDI2	Idi2
1.76	0.005	SERPINB1	Serpinb1a
1.75	0.026	VCAN	Vcan
1.75	0.001	TLCD2	Tlcd2
1.74	0.031	SERPINE1	Serpine1
1.73	0.000	LPL	Lpl
1.72	0.001	AWAT1	Awat1
1.72	0.002	COL6A3	Col6a3
1.72	0.032	CYP11A1	Cyp11a1
1.71	0.000	HMGCR	Hmgcr
1.71	0.013	CYSLTR2	Cysltr2
1.71	0.002	TMEM45B	Tmem45b
1.71	0.011	CCL2	Ccl2
1.70	0.002	FETUB	Fetub
1.70	0.038	MS4A4A	Ms4a4a
1.70	0.038	MS4A4E	Ms4a4a
1.70	0.037	MMP19	Mmp19
1.68	0.001	FAR1	Far1
1.67	0.004	SELE	Sele
1.66	0.000	TCF24	Tcf24
1.65	0.000	AADAC	Aadac
1.62	0.020	OAS1	Oas1g
1.59	0.006	CDH11	Cdh11
1.59	0.000	PLA2G4E	Pla2g4e
1.59	0.001	NAV3	Nav3
1.58	0.017	GPR65	Gpr65
1.58	0.013	NA	Gm5538
1.57	0.013	WFDC12	Wfdc12
1.57	0.020	NA	Gzmc
1.57	0.001	SOAT1	Soat1
1.56	0.000	GLRX	Glrx
1.56	0.048	ELF3	Elf3
1.55	0.001	NA	Lce1f
1.54	0.002	CD36	Cd36
1.54	0.011	LGI2	Lgi2
1.54	0.003	TAC4	Tac4
1.54	0.007	ACOX2	Acox2
1.54	0.025	CHIA	Chil3
1.53	0.000	KRT1	Krt1
1.53	0.000	ADAM12	Adam12
1.53	0.010	CYP1A1	Cyp1a1
1.53	0.000	HRNR	Hrnr
1.52	0.000	SLC5A1	Slc5a1
1.51	0.001	NA	Tdh
1.50	0.019	NA	Olfr1286
1.50	0.007	AADACL4	Gm13177
1.50	0.005	STMN2	Stmn2
1.50	0.001	CCBE1	Ccbe1
1.49	0.004	PANX3	Panx3
1.48	0.040	C15orf48	AA467197
1.48	0.041	S100A9	S100a9
1.47	0.004	NA	Akr1b8
1.47	0.001	PRSS27	Prss27
1.47	0.036	CXCL10	Cxcl10
1.46	0.007	DGAT2L6	Dgat2l6
1.45	0.006	XPNPEP2	Xpnpep2
1.43	0.002	LSS	Lss
1.43	0.011	CA2	Car2

2.95	0.004	NA	Krtap19-1
2.93	0.007	NA	Krtap19-5
2.93	0.000	DTX3L	Dtx3l
2.91	0.000	MX1	Mx2
2.90	0.000	KRTAP10-7	Krtap10-4
2.90	0.000	KRTAP10-5	Krtap10-4
2.90	0.000	KRTAP10-1	Krtap10-4
2.90	0.000	KRTAP10-3	Krtap10-4
2.90	0.000	KRTAP10-1	Krtap10-4
2.90	0.000	KRTAP10-1	Krtap10-4
2.90	0.000	KRTAP10-6	Krtap10-4
2.90	0.000	KRTAP10-2	Krtap10-4
2.90	0.000	KRTAP10-1	Krtap10-4
2.90	0.000	KRTAP10-9	Krtap10-4
2.90	0.000	KRTAP10-4	Krtap10-4
2.90	0.000	KRTAP10-8	Krtap10-4
2.89	0.001	NA	Krtap4-7
2.87	0.000	RGS4	Rgs4
2.87	0.000	CD274	Cd274
2.86	0.000	SRGN	Srgn
2.85	0.000	SERPINB3	Serpinb3a
2.85	0.000	SERPINB4	Serpinb3a
2.85	0.001	NA	Krtap5-5
2.85	0.000	CRNN	Crnn
2.82	0.000	XAF1	Xaf1
2.80	0.000	NA	Sprr2a1
2.79	0.001	NA	LOC102637
2.76	0.000	PARP9	Parp9
2.75	0.000	NA	Sprr2a2
2.75	0.000	MNDA	Ifi204
2.75	0.000	KRTAP3-1	Krtap3-1
2.73	0.000	NA	Krtap5-2
2.73	0.000	KRTAP10-7	Krtap10-10
2.73	0.000	KRTAP10-5	Krtap10-10
2.73	0.000	KRTAP10-1	Krtap10-10
2.73	0.000	KRTAP10-3	Krtap10-10
2.73	0.000	KRTAP10-1	Krtap10-10
2.73	0.000	KRTAP10-1	Krtap10-10
2.73	0.000	KRTAP10-6	Krtap10-10
2.73	0.000	KRTAP10-2	Krtap10-10
2.73	0.000	KRTAP10-1	Krtap10-10
2.73	0.000	KRTAP10-9	Krtap10-10
2.73	0.000	KRTAP10-4	Krtap10-10
2.73	0.000	KRTAP10-8	Krtap10-10
2.73	0.000	SPRR4	Sprr4
2.71	0.000	TRIM5	Trim30a
2.69	0.000	GBP6	Gbp9
2.69	0.000	DEGS2	Degs2
2.67	0.000	IRF1	Irf1
2.66	0.000	DSG4	Dsg4
2.65	0.000	NA	Sprr2h
2.63	0.000	C15orf48	AA467197
2.62	0.000	NA	Krtap5-4
2.60	0.002	NA	Saa3
2.59	0.000	KRT31	Krt31
2.59	0.000	KRT33B	Krt31
2.59	0.000	KRT34	Krt31
2.59	0.000	KRT33A	Krt31
2.58	0.000	HDC	Hdc
2.57	0.001	NA	Gm29779
2.57	0.001	GPRC5D	Gprc5d
2.55	0.001	NA	Krtap4-1
2.55	0.000	HBEGF	Hbegf
2.54	0.000	KRTAP11-1	Krtap11-1
2.54	0.000	PLAC8	Plac8
2.54	0.000	NA	Krtap4-2
2.53	0.000	IRG1	Irg1
2.52	0.000	SOCS3	Socs3

3.24	0.000	Defb4	NA
3.22	0.000	Fcer1a	FCER1A
3.22	0.000	Prg4	PRG4
3.22	0.000	Mmp13	MMP13
3.19	0.000	Sirpb1a	SIRPA
3.19	0.000	Sirpb1a	SIRPG
3.19	0.000	Sirpb1a	SIRPB1
3.17	0.000	Csf3r	CSF3R
3.16	0.000	Siglece	SIGLEC9
3.16	0.000	Siglece	SIGLEC7
3.16	0.000	Siglece	SIGLEC12
3.16	0.000	Siglece	SIGLEC8
3.13	0.000	Mmp8	MMP8
3.12	0.000	Rgs1	RGS1
3.12	0.000	Klra18	NA
3.09	0.000	Ms4a4b	NA
3.09	0.000	Cyp7b1	CYP7B1
3.09	0.000	Serpinb6c	SERPINB6
3.06	0.000	Hdc	HDC
3.05	0.000	Cxcl11	CXCL11
3.05	0.000	Tmprss11g	NA
3.01	0.000	Krt16	KRT16
3.01	0.000	Fcgr4	FCGR3B
3.01	0.000	Fcgr4	FCGR3A
3.00	0.000	Cxcl10	CXCL10
2.99	0.001	Myl4	MYL4
2.96	0.000	Fgr	FGR
2.96	0.000	Il18rap	IL18RAP
2.95	0.000	Ncr1	NCR1
2.95	0.000	Reg1	REG1B
2.95	0.000	Reg1	REG1A
2.94	0.000	Il24	IL24
2.94	0.000	Mefv	MEFV
2.92	0.000	Lair1	LAIR1
2.92	0.000	Lair1	LAIR2
2.91	0.000	Stfa1	CSTA
2.90	0.000	Clec4n	CLEC6A
2.90	0.000	Car4	CA4
2.90	0.000	Tnc	TNC
2.90	0.000	Icos	ICOS
2.90	0.000	Spic	SPIC
2.90	0.000	Msr1	MSR1
2.87	0.011	Actc1	ACTC1
2.87	0.000	Slc15a3	SLC15A3
2.87	0.000	Cfap69	CFAP69
2.87	0.000	Hck	HCK
2.87	0.000	Klra9	NA
2.86	0.000	Cyp7b1	CYP7B1
2.86	0.000	Trem1	TREM1
2.86	0.000	Reg3g	REG3A
2.86	0.000	Reg3g	REG3G
2.86	0.000	Cxcl9	CXCL9
2.85	0.000	Stat4	STAT4
2.85	0.000	Fgr	FGR
2.84	0.000	Pla2g4e	PLA2G4E
2.82	0.000	Cd69	CD69
2.82	0.000	Klrc1	KLRC4
2.82	0.000	Klrc1	KLRC4-KLR
2.82	0.000	Klrc1	KLRC2
2.82	0.000	Klrc1	
2.82	0.000	Klrc1	KLRC1
2.82	0.000	Klrc1	KLRC3
2.81	0.000	Jakmip2	JAKMIP2
2.80	0.000	Slc5a1	SLC5A1
2.80	0.000	Tmprss11a	TMPRSS11
2.79	0.000	Clec4n	CLEC6A
2.76	0.000	Slc5a9	SLC5A9
2.76	0.000	Gm6377	NA

ACCEPTED MANUSCRIPT

-1.13	0.001	SLC2A5	Slc2a5
-1.14	0.010	UCN2	Ucn2
-1.14	0.003	CYP2W1	Cyp2w1
-1.16	0.000	NNT	Nnt
-1.18	0.015	COL6A5	Col6a5
-1.18	0.001	GUCY1B3	Gucy1b3
-1.22	0.001	PAPLN	Papln
-1.23	0.004	DDIT4	Ddit4
-1.24	0.003	IKZF4	Ikzf4
-1.25	0.001	KRT24	Krt24
-1.27	0.015	SCD	Scd3
-1.27	0.049	RXFP1	Rxfp1
-1.27	0.001	NA	Sult5a1
-1.32	0.000	SH3D21	Sh3d21
-1.33	0.019	NA	Lce1g
-1.35	0.001	GLDC	Gldc
-1.38	0.000	SLC43A1	Slc43a1
-1.41	0.008	IBSP	Ibsp
-1.44	0.002	MRGPRX1	Mrgprb3
-1.44	0.002	MRGPRX2	Mrgprb3
-1.44	0.002	MRGPRX4	Mrgprb3
-1.44	0.002	MRGPRX3	Mrgprb3
-1.52	0.000	XCL1	Xcl1
-1.52	0.000	XCL2	Xcl1
-1.56	0.000	NA	Alox12e
-1.74	0.003	MRGPRX1	Mrgpra9
-1.74	0.003	MRGPRX2	Mrgpra9
-1.74	0.003	MRGPRX3	Mrgpra9
-1.74	0.003	MRGPRX4	Mrgpra9
-1.76	0.000	PLS1	Pls1
-1.78	0.002	NA	Olfr466
-1.84	0.000	TGM7	Tgm7
-2.55	0.000	PAQR7	Paqr7
-2.64	0.022	NA	Cyp2g1

1.84	0.006	NA	Tpsab1
1.84	0.003	FCER1A	Fcer1a
1.83	0.042	CD300LF	Cd300lf
1.83	0.042	CD300LD	Cd300lf
1.82	0.001	TUBB3	Tubb3
1.82	0.020	MSR1	Msr1
1.81	0.010	ALOX15B	Alox8
1.81	0.008	NA	B430306N0
1.81	0.007	NA	C920009B1
1.81	0.009	STC1	Stc1
1.80	0.000	CGREF1	Cgref1
1.80	0.002	CCL7	Ccl7
1.80	0.023	NA	Pyhin1
1.79	0.004	TNFAIP6	Tnfaip6
1.79	0.002	SMOX	Smox
1.79	0.014	F10	F10
1.78	0.008	TFEC	Tfec
1.77	0.005	SRGN	Srgn
1.77	0.030	ENTPD3	Entpd3
1.77	0.018	SLC11A1	Slc11a1
1.76	0.005	ADAM8	Adam8
1.76	0.027	BRINP3	Brinp3
1.75	0.015	GPR65	Gpr65
1.75	0.033	IFI44L	Ifi44l
1.74	0.029	ARG2	Arg2
1.73	0.006	IL4R	Il4ra
1.73	0.014	FOSL1	Fosl1
1.73	0.014	NA	LOC102637
1.72	0.021	IFITM3	Ifitm1
1.72	0.021	IFITM2	Ifitm1
1.72	0.001	ALDH1A3	Aldh1a3
1.72	0.001	SIGLEC1	Siglec1
1.71	0.043	TNFSF11	Tnfsf11
1.70	0.000	GALNT6	Galnt6
1.70	0.001	NA	Mir31
1.69	0.028	PLEK	Plek
1.69	0.011	MS4A6A	Ms4a6c
1.69	0.011	MS4A6E	Ms4a6c
1.69	0.016	NA	Lce3b
1.69	0.005	TFPI2	Tfpi2
1.69	0.010	COL6A5	Col6a5
1.69	0.016	FGR	Fgr
1.67	0.000	NA	Teddm3
1.67	0.008	CEMIP	Cemip
1.66	0.009	WISP1	Wisp1
1.65	0.018	CD53	Cd53
1.64	0.019	NA	Klra2
1.64	0.030	PIK3AP1	Pik3ap1
1.63	0.001	LOXL1	Loxl1
1.63	0.008	SLFN12	Slfn2
1.63	0.008	SLFN12L	Slfn2
1.62	0.006	VWA5A	AW551984
1.62	0.004	CCL15-CCL	Ccl9
1.62	0.004	CCL23	Ccl9
1.62	0.004	CCL15	Ccl9
1.62	0.019	SP140	Sp140
1.62	0.004	AOAH	Aoah
1.62	0.002	C1QB	C1qb
1.62	0.008	SPTSSB	Sptssb
1.61	0.034	SLC16A3	Slc16a3
1.60	0.002	TNFRSF9	Tnfrsf9
1.60	0.011	CD300C	AF251705
1.60	0.011	CD300A	AF251705
1.60	0.013	SAMSN1	Samsn1
1.60	0.009	NA	S100a7a
1.60	0.001	KLK9	Klk9
1.60	0.001		Klk9
1.59	0.003	MS4A6A	Ms4a6b

1.43	0.003	CA12	Car12
1.43	0.019	SRPX2	Srpx2
1.43	0.043	NA	Tlr13
1.43	0.003	CHGA	Chga
1.42	0.019	NA	Scgb2b27
1.41	0.000	AIM2	Aim2
1.41	0.001	MLKL	Mlkl
1.40	0.007	SERPINB6	Serpinb6c
1.40	0.000	NA	Teddm3
1.40	0.009	APOL2	Apol8
1.40	0.009	APOL1	Apol8
1.40	0.009	APOL3	Apol8
1.40	0.009	APOL4	Apol8
1.39	0.039	HGF	Hgf
1.39	0.011	NA	Gsdmcl2
1.38	0.008	CD69	Cd69
1.38	0.005	CYP3A5	Cyp3a57
1.38	0.005	CYP3A4	Cyp3a57
1.38	0.005	CYP3A43	Cyp3a57
1.38	0.005	CYP3A7	Cyp3a57
1.38	0.005	CYP3A7-CY	Cyp3a57
1.38	0.016	NA	Iigp1
1.38	0.007	EYA4	Eya4
1.37	0.014	NA	BC021614
1.36	0.040	SEMA3A	Sema3a
1.35	0.000	IL36G	Il1f9
1.35	0.003	SOX15	Sox15
1.34	0.028	NA	Mir743
1.34	0.001	KHDRBS3	Khdrbs3
1.33	0.015	CTSS	Ctss
1.33	0.008	TCF24	Tcf24
1.33	0.002	SLURP1	Slurp1
1.33	0.001	RDH11	Rdh11
1.32	0.034	CCR2	Ccr5
1.32	0.004	SHCBP1	Shcbp1
1.32	0.003		Klk9
1.32	0.003	KLK9	Klk9
1.31	0.033	ETNPPL	Etnppl
1.30	0.002	PLIN2	Plin2
1.30	0.013	CES4A	Ces4a
1.29	0.005	NA	Snhg11
1.28	0.022	ANGPTL1	Angptl1
1.28	0.013	FA2H	Fa2h
1.28	0.014	EHF	Ehf
1.27	0.001	COTL1	Cotl1
1.27	0.040	ERCC6L	Ercc6l
1.26	0.003	SOAT1	Soat1
1.26	0.003	CERS4	Cers4
1.26	0.002	NA	Lce1e
1.26	0.014	LHPP	Lhpp
1.26	0.020	PCTP	Pctp
1.25	0.012	CRISPLD2	Crispld2
1.25	0.008	DBP	Dbp
1.25	0.005	IL13RA2	Il13ra2
1.24	0.021	PNPLA5	Pnpla5
1.24	0.001	DGAT1	Dgat1
1.23	0.000	MASTL	Mastl
1.23	0.002	MGLL	Mgll
1.23	0.002	NRG4	Nrg4
1.23	0.028	C1orf158	1700012P2
1.22	0.004	CCL7	Ccl7
1.22	0.004	ZBTB38	E030011O0
1.21	0.009	MTHFD1L	Mthfd1l
1.21	0.016	CENPU	Cenpu
1.21	0.001	FFAR4	Ffar4
1.21	0.039	CRYGN	Crygn
1.20	0.002	MCTP1	Mctp1
1.20	0.000	SLFN13	Slfn9

2.52	0.000	SLFN11	Slfn8
2.52	0.000	SLFN13	Slfn8
2.52	0.000	CASP5	Casp4
2.51	0.000	CYP7B1	Cyp7b1
2.50	0.000	HERC6	Herc6
2.50	0.000	TNC	Tnc
2.49	0.000	BATF2	Batf2
2.48	0.000	RSAD2	Rsad2
2.47	0.000	STAT1	Stat1
2.46	0.000	KRT73	Krt73
2.46	0.000	PSMB9	Psmb9
2.45	0.000	GSDMC	Gsdmc2
2.45	0.000	LILRB3	Lilrb4a
2.45	0.000	LILRB2	Lilrb4a
2.45	0.000	LILRA6	Lilrb4a
2.45	0.000	LILRB1	Lilrb4a
2.45	0.000	LILRB5	Lilrb4a
2.45	0.000	LILRA4	Lilrb4a
2.45	0.000	LILRB3	Lilrb4a
2.45	0.000	LILRB3	Lilrb4a
2.45	0.000	LILRA5	Lilrb4a
2.45	0.000	LILRB4	Lilrb4a
2.45	0.000	LILRA6	Lilrb4a
2.45	0.000	LILRA2	Lilrb4a
2.45	0.000	LILRA1	Lilrb4a
2.44	0.000	KRTAP9-1	Gm11567
2.44	0.000	SLFN12	Slfn4
2.44	0.000	SLFN12L	Slfn4
2.43	0.000	NA	AW112010
2.42	0.013	CCL7	Ccl7
2.41	0.000	NA	Gm11554
2.41	0.003	KRTAP12-1	Krtap12-1
2.41	0.003	KRTAP12-3	Krtap12-1
2.41	0.003	KRTAP12-2	Krtap12-1
2.41	0.000	PRR9	Prr9
2.40	0.000	ALOX15B	Alox8
2.40	0.001	NA	Krtap1-4
2.39	0.000	TRIM5	Trim30d
2.37	0.000	KRT28	Krt28
2.33	0.000	NA	Ms4a4c
2.33	0.001	CLEC4D	Clec4d
2.32	0.000	CXCR2	Cxcr2
2.31	0.000	SOCS3	Socs3
2.31	0.000	SLFN12L	Slfn1
2.31	0.000	SLFN12	Slfn1
2.31	0.000	FXYD4	Fxyd4
2.31	0.000	LILRB3	Lilr4b
2.31	0.000	LILRA6	Lilr4b
2.31	0.000	LILRA2	Lilr4b
2.31	0.000	LILRA1	Lilr4b
2.31	0.000	LILRA4	Lilr4b
2.31	0.000	LILRB5	Lilr4b
2.31	0.000	LILRA5	Lilr4b
2.31	0.000	LILRB3	Lilr4b
2.31	0.000	LILRB4	Lilr4b
2.31	0.000	LILRA6	Lilr4b
2.31	0.000	LILRB2	Lilr4b
2.31	0.000	LILRB3	Lilr4b
2.31	0.000	LILRB1	Lilr4b
2.31	0.000	IFNG	Ifng
2.30	0.000	IL2RG	Il2rg
2.30	0.001	KRTAP26-1	Krtap26-1
2.29	0.000	NA	Gm11563
2.29	0.000	CCL4	Ccl4
2.28	0.004	NA	Krtap19-9b
2.28	0.001	BCL3	Bcl3
2.27	0.000	LRRC15	Lrrc15
2.27	0.000	KRT72	Krt72

2.75	0.000	Ccr5	CCR2
2.74	0.000	Aoah	AOAH
2.74	0.000	Gsta4	NA
2.74	0.000	Slamf8	SLAMF8
2.73	0.000	Tdh	NA
2.73	0.000	Cxcr2	CXCR2
2.73	0.028	Ankrd1	ANKRD1
2.72	0.000	Spink4	SPINK4
2.72	0.000	Klre1	NA
2.71	0.000	Rptn	RPTN
2.71	0.000	Mcpt8	NA
2.71	0.000	Spic	SPIC
2.70	0.000	Ehf	EHF
2.68	0.000	Sprr2a1	NA
2.68	0.000	Olah	OLAH
2.67	0.000	Slc26a4	SLC26A4
2.67	0.000	Car4	CA4
2.67	0.000	Ear1	RNASE3
2.67	0.000	Ear1	RNASE2
2.66	0.001	Steap1	STEAP1
2.66	0.001	Steap1	STEAP1B
2.66	0.000	Slamf7	SLAMF7
2.66	0.000	Slc7a11	SLC7A11
2.65	0.000	Hpx	HPX
2.64	0.000	Ifng	IFNG
2.64	0.000	Rbp2	RBP2
2.63	0.000	Cacna2d4	CACNA2D4
2.62	0.000	Aox4	NA
2.62	0.000	Il18bp	IL18BP
2.61	0.000	Gpr31b	GPR31
2.61	0.000	Cxcr6	CXCR6
2.60	0.000	Ikzf3	IKZF3
2.60	0.000	Tlr1	TLR1
2.60	0.000	Aif1	AIF1
2.59	0.000	Ms4a4c	NA
2.58	0.000	Ehf	EHF
2.58	0.000	Itgal	ITGAL
2.58	0.000	Spp1	SPP1
2.57	0.000	Clec4a2	CLEC4A
2.57	0.000	Khdc1a	KHDC1
2.57	0.000	Khdc1a	KHDC1L
2.57	0.000	Khdc1a	
2.56	0.000	Sprr2h	NA
2.56	0.000	Atp13a4	ATP13A4
2.56	0.000	Serpinb12	SERPINB12
2.55	0.000	Cd177	NA
2.54	0.000	Msr1	MSR1
2.54	0.000	Plek	PLEK
2.54	0.000	Pilra	PILRA
2.54	0.000	Pilra	PILRB
2.54	0.001	Ccl7	CCL7
2.54	0.000	Slamf6	SLAMF6
2.54	0.000	Oit1	FAM3D
2.53	0.000	Msr1	MSR1
2.53	0.000	Pdcd1lg2	PDCD1LG2
2.52	0.000	Sprr1b	SPRR1B
2.52	0.000	Sprr1b	SPRR1A
2.52	0.005	Gjb6	GJB6
2.52	0.000	Skap1	SKAP1
2.51	0.000	Zc3h12d	ZC3H12D
2.51	0.000	Olah	OLAH
2.51	0.000	Fcgr1	FCGR1A
2.51	0.000	Fcgr1	FCGR1B
2.51	0.000	Il2rb	IL2RB
2.51	0.000	Nfe2l2	NFE2L2
2.50	0.000	Cthrc1	CTHRC1
2.50	0.000	AF251705	CD300A
2.50	0.000	AF251705	CD300C

ACCEPTED MANUSCRIPT

1.59	0.003	MS4A6E	Ms4a6b	1.20	0.000	SLFN11	Slfn9	2.27	0.000	LCE3B	Lce3d	2.50	0.000	Cd22	CD22
1.59	0.000	BCL3	Bcl3	1.20	0.026	NA	Hist1h3f	2.26	0.000	CCR1	Ccr1	2.49	0.000	AB124611	C19orf38
1.59	0.008	S1PR3	S1pr3	1.20	0.035	COLEC12	Colec12	2.25	0.000	KRT86	Krt83	2.49	0.000	Lst1	LST1
1.59	0.005	WISP2	Wisp2	1.20	0.001	CYP51A1	Cyp51	2.25	0.000	KRT83	Krt83	2.49	0.000	Ccrl2	CCRL2
1.59	0.028	VCAM1	Vcam1	1.20	0.002	SLC37A2	Slc37a2	2.25	0.000	KRT81	Krt83	2.48	0.000	Atp13a5	ATP13A5
1.58	0.008	PLAC8	Plac8	1.19	0.002	ACSS2	Acss2	2.24	0.000	SERPINA3	Serpina3f	2.47	0.000	Hcls1	HCLS1
1.58	0.000	UBE2C	Ube2c	1.19	0.006	TMEM56-R	Tmem56	2.24	0.000		Serpina3f	2.47	0.000	Icos	ICOS
1.58	0.007	GLIPR2	Glipr2	1.19	0.012	AADACL4	9430007A2	2.24	0.000	RNASEL	Rnasel	2.46	0.000	Apoc2	APOC2
1.57	0.000	SERPINB12	Serpinb12	1.19	0.003	MFSD2A	Mfsd2a	2.24	0.002	NA	Krtap5-5	2.46	0.000	Apoc2	APOC4-APO
1.57	0.028	CD300LD	Cd300ld	1.18	0.031	CDHR1	Cdhr1	2.23	0.000	NMI	Nmi	2.46	0.000	Pira1	NA
1.57	0.028	CD300LF	Cd300ld	1.18	0.025	CYP2J2	Cyp2j12	2.22	0.000	ZBP1	Zbp1	2.46	0.001	Steap1	STEAP1
1.57	0.036	CLEC5A	Clec5a	1.18	0.002	TCAF2	Tcaf2	2.21	0.000	ISG15	Gm9706	2.46	0.001	Steap1	STEAP1B
1.56	0.045	NA	Defb4	1.18	0.004	KIF26B	Kif26b	2.20	0.000	NA	Gm7609	2.45	0.000	Cd22	CD22
1.55	0.026	ITGAM	Itgam	1.18	0.002	HSD17B7	Hsd17b7	2.19	0.000	GJB2	Gjb2	2.45	0.000	Icos	ICOS
1.55	0.005	ADAMTS4	Adamts4	1.17	0.013	PCDHB14	Pcdhb21	2.19	0.000	KRTAP10-7	Krtap10-10	2.45	0.002	Serpina9	SERPINA9
1.54	0.002	CSF2RB	Csf2rb2	1.17	0.045	CENPK	Cenpk	2.19	0.000	KRTAP10-5	Krtap10-10	2.44	0.011	Gm7325	NA
1.53	0.034	NA	Vmn2r19	1.17	0.023	HELLS	Hells	2.19	0.000	KRTAP10-1	Krtap10-10	2.44	0.000	Klrg1	KLRG1
1.53	0.004	RAC2	Rac2	1.17	0.027	NCAPG	Ncapg	2.19	0.000	KRTAP10-3	Krtap10-10	2.43	0.000	Il18rap	IL18RAP
1.52	0.001	ALDH1L2	Aldh1l2	1.17	0.007	SLFN12L	Slfn2	2.19	0.000	KRTAP10-1	Krtap10-10	2.43	0.000	Fam26f	FAM26F
1.51	0.043	TLR1	Tlr1	1.17	0.007	SLFN12	Slfn2	2.19	0.000	KRTAP10-1	Krtap10-10	2.43	0.000	Il2ra	IL2RA
1.51	0.049	NA	Mirt1	1.16	0.003	TMEM97	Tmem97	2.19	0.000	KRTAP10-6	Krtap10-10	2.42	0.000	Ms4a4c	NA
1.51	0.004	CDH11	Cdh11	1.16	0.001	HSD17B12	Hsd17b12	2.19	0.000	KRTAP10-2	Krtap10-10	2.41	0.000	Gpr84	GPR84
1.50	0.005	EMILIN2	Emilin2	1.16	0.001	BHLHE40	Bhlhe40	2.19	0.000	KRTAP10-1	Krtap10-10	2.41	0.000	Trem1	TREM1
1.49	0.046	NA	Lce3a	1.15	0.003	ELOVL7	Elovl7	2.19	0.000	KRTAP10-9	Krtap10-10	2.40	0.000	Csf3	CSF3
1.49	0.027	KLK2	Klk1	1.15	0.029	EGLN3	Egln3	2.19	0.000	KRTAP10-4	Krtap10-10	2.40	0.000	Ccr7	CCR7
1.49	0.027	KLK3	Klk1	1.15	0.022	COL6A2	Col6a2	2.19	0.000	KRTAP10-8	Krtap10-10	2.40	0.000	Cd8a	CD8A
1.49	0.045	NA	Cd177	1.15	0.003	GALNT6	Galnt6	2.19	0.000	SP100	Sp100	2.39	0.000	Ccr1	CCR1
1.49	0.001	KIF11	Kif11	1.15	0.021	SLC26A9	Slc26a9	2.19	0.000	SP140L	Sp100	2.38	0.000	Stfa3	CSTA
1.49	0.002	TMEM8A	Tmem8	1.15	0.020	NA	Lce1h	2.19	0.019	NA	Rhox4a	2.38	0.000	B430306N0	NA
1.48	0.038	PPBP	Ppbp	1.14	0.006	ADIG	Adig	2.18	0.000	OAS2	Oas2	2.38	0.000	Nkg7	NKG7
1.48	0.034	TNF	Tnf	1.14	0.000	PPA1	Ppa1	2.18	0.001	NA	Sprr2b	2.37	0.000	Ms4a6b	MS4A6A
1.47	0.024	SYK	Syk	1.14	0.047	ALDH1L2	Aldh1l2	2.17	0.000	NA	Ifi203	2.37	0.000	Ms4a6b	MS4A6E
1.47	0.046	C19orf38	AB124611	1.14	0.013	PLA2G2D	Pla2g2d	2.17	0.012	NA	Mup2	2.37	0.000	Mt1	MT1F
1.47	0.013	TLR8	Tlr8	1.13	0.001	SDR16C5	Sdr16c5	2.17	0.000	DHRS9	Dhrs9	2.37	0.000	Mt1	MT1E
1.47	0.022	LRRC25	Lrrc25	1.13	0.020	CD53	Cd53	2.17	0.000	HAS3	Has3	2.37	0.000	Mt1	MT1B
1.46	0.010	AQP5	Aqp5	1.13	0.001	RIPK3	Ripk3	2.15	0.000	PARP12	Parp12	2.37	0.000	Mt1	MT1G
1.46	0.032	MMP10	Mmp10	1.13	0.005	MVD	Mvd	2.15	0.002	CH25H	Ch25h	2.37	0.000	Mt1	MT1A
1.46	0.002	CTHRC1	Cthrc1	1.13	0.026	TMPRSS11	Tmprss11b	2.15	0.001	SELE	Sele	2.37	0.000	Mt1	MT1H
1.45	0.005	SORCS2	Sorcs2	1.13	0.034	C17orf107	4930544D0	2.13	0.000	TFEC	Tfec	2.37	0.000	Mt1	MT1HL1
1.44	0.010	ITGAL	Itgal	1.12	0.010	BRIP1	Brip1	2.12	0.000	NA	Mx1	2.37	0.000	Rel	REL
1.44	0.004	MS4A7	Ms4a7	1.12	0.027	HOXB7	Hoxb7	2.10	0.000	NA	Tpsab1	2.36	0.000	Gdf3	GDF3
1.44	0.003	CDK1	Cdk1	1.12	0.037	MMP2	Mmp2	2.10	0.000	GZMA	Gzma	2.36	0.000	Serpinb6b	SERPINB6
1.44	0.024	HCK	Hck	1.12	0.006	PMAIP1	Pmaip1	2.10	0.000	NA	Gm4559	2.35	0.000	Ada	ADA
1.43	0.009	CXCL14	Cxcl14	1.12	0.002	RDH16	Rdh1	2.09	0.002	KRTAP1-5	Krtap1-5	2.35	0.000	Il2rg	IL2RG
1.43	0.041	IFI44	Ifi44	1.12	0.019	HFE	Hfe	2.09	0.002	KRTAP1-3	Krtap1-5	2.35	0.000	Hk3	HK3
1.43	0.002	FCGR2A	Fcgr2b	1.12	0.022	TMEM196	Tmem196	2.09	0.002	KRTAP1-1	Krtap1-5	2.35	0.000	Ccdc88b	CCDC88B
1.43	0.002	FCGR2B	Fcgr2b	1.12	0.004	CD80	Cd80	2.09	0.002	KRTAP1-4	Krtap1-5	2.34	0.000	Eomes	EOMES
1.43	0.002	FCGR2C	Fcgr2b	1.11	0.023	VNN3	Vnn3	2.09	0.000	PSMB8	Psmb8	2.34	0.000	Dppa5a	DPPA5
1.43	0.002	FCGR2A	Fcgr2b	1.11	0.016	LPO	Lpo	2.06	0.000	SLFN5	Slfn5	2.33	0.000	Gpr171	GPR171
1.42	0.006	KIAA0895	9530077C0	1.11	0.002	PPARG	Pparg	2.06	0.000	SERPINB11	Serpinb11	2.32	0.000	Ifitm1	IFITM2
1.42	0.042	SLC15A3	Slc15a3	1.11	0.004	NA	H60c	2.06	0.000	MS4A6E	Ms4a6d	2.32	0.000	Ifitm1	IFITM3
1.42	0.000	CCNB2	Ccnb2	1.10	0.017	P2RY10	P2ry10	2.06	0.000	MS4A6A	Ms4a6d	2.32	0.000	Ipcef1	IPCEF1
1.42	0.013	PLA1A	Pla1a	1.10	0.001	FABP5	Fabp5	2.06	0.000	TAP1	Tap1	2.31	0.000	Gimap4	GIMAP4
1.41	0.018	INHBA	Inhba	1.10	0.016	CES2	Ces2g	2.06	0.000	VSIG8	Vsig8	2.30	0.000	Klk6	KLK6
1.41	0.001	SLC5A8	Slc5a8	1.10	0.001	FABP5	Fabp5	2.05	0.000	MLKL	Mlkl	2.30	0.000	Limd2	LIMD2
1.40	0.015	CD101	Cd101	1.10	0.006	TNFSF12-T	Tnfsfm13	2.04	0.000	SLC5A8	Slc5a8	2.29	0.000	Pik3ap1	PIK3AP1
1.40	0.020	CCL2	Ccl2	1.10	0.005	CEP55	Cep55	2.04	0.002	LY6G6D	Ly6g6d	2.29	0.000	Gk	GK
1.40	0.001	FBN1	Fbn1	1.10	0.002	BCL3	Bcl3	2.03	0.000	NA	Lce3b	2.29	0.001	Ccl2	CCL2
1.40	0.001	NUF2	Nuf2	1.10	0.032	TMEM150C	Tmem150c	2.01	0.000	EIF2AK2	Eif2ak2	2.28	0.000	Tbx21	TBX21
1.40	0.002	BUB1	Bub1	1.09	0.012	WDHD1	Wdhd1	2.01	0.000	SECTM1	Sectm1a	2.28	0.004	Slfn3	SLFN12L
1.40	0.042	APLN	Apln	1.09	0.001	MAL2	Mal2	2.01	0.000	RNF213	Rnf213	2.28	0.004	Slfn3	SLFN12
1.40	0.020	DIO2	Dio2	1.09	0.019	ACOXL	Acoxl	2.00	0.000	RNF213	Rnf213	2.28	0.000	Gimap4	GIMAP4
1.39	0.004	FSCN1	Fscn1	1.09	0.001	PSAT1	Psat1	2.00	0.000	TNIP3	Tnip3	2.28	0.000	Cst7	CST7
1.39	0.004	ARSJ	Arsj	1.08	0.004	NA	Gm20939	1.99	0.009	KRTAP12-1	Gm10024	2.28	0.000	Cd79b	CD79B
1.39	0.003	ADA	Ada	1.08	0.008	NA	Ceacam3	1.99	0.009	KRTAP12-2	Gm10024	2.28	0.000	Batf	BATF
1.38	0.001	CCNA2	Ccna2	1.08	0.020	SEC14L4	Sec14l4	1.99	0.009	KRTAP12-3	Gm10024	2.27	0.000	Degs2	DEGS2
1.38	0.002	SHCBP1	Shcbp1	1.08	0.009	CD274	Cd274	1.99	0.000	SPRR1A	Sprr1b	2.26	0.000	Cflar	CFLAR
1.38	0.005	SLFN12	Slfn3	1.08	0.048	ALS2CR12	Als2cr12	1.99	0.000	SPRR1B	Sprr1b	2.25	0.000	Tlr2	TLR2

ACCEPTED MANUSCRIPT

1.38	0.005	SLFN12L	Slfn3	1.07	0.000	TFRC	Tfrc	1.99	0.000	DDX60	Ddx60	2.25	0.000	Sh2d5	SH2D5
1.38	0.021	LRAT	Lrat	1.07	0.027	LIX1L	Lix1l	1.98	0.000	NA	Slfn10-ps	2.24	0.000	Clec7a	CLEC7A
1.38	0.017	MEST	Mest	1.06	0.011	NUF2	Nuf2	1.98	0.000	NT5C1A	Nt5c1a	2.24	0.000	Clec5a	CLEC5A
1.37	0.003	MNDA	Ifi204	1.06	0.002	PER2	Per2	1.96	0.000	KRTAP2-2	Gm11938	2.24	0.000	Ebi3	EBI3
1.37	0.027	STX11	Stx11	1.06	0.008	NR4A3	Nr4a3	1.96	0.000	KRTAP2-3	Gm11938	2.24	0.000	Itgal	ITGAL
1.36	0.003	TSPAN11	Tspan11	1.06	0.028	RTP4	Rtp4	1.96	0.000	KRTAP2-4	Gm11938	2.23	0.000	Glrx	GLRX
1.36	0.036	UPP1	Upp1	1.05	0.007	RGS5	Rgs5	1.96	0.000	KRTAP2-1	Gm11938	2.23	0.000	Cxcr6	CXCR6
1.36	0.000	TPX2	Tpx2	1.05	0.044	OR51E1	Olfr558	1.96	0.000	SERPINB1	Serpinb1a	2.22	0.005	Myh4	MYH4
1.35	0.007	SLC39A14	Slc39a14	1.05	0.008	PANK1	Pank1	1.96	0.000	HAS2	Has2	2.22	0.000	Gpr18	GPR18
1.35	0.001	CKS2	Cks2	1.04	0.022	TMEM45A	Tmem45a2	1.96	0.000	IFIT3	Ifit3	2.21	0.000	Gbp2b	GBP2
1.35	0.001	CKS2	Cks2	1.04	0.003	AQP3	Aqp3	1.95	0.000	TNFSF10	Tnfsf10	2.21	0.000	Epgn	EPGN
1.35	0.001	CKS2	Cks2	1.04	0.001	FABP5	Fabp5	1.94	0.000	LCE3B	Lce3c	2.21	0.000	F10	F10
1.35	0.031	NA	Saa1	1.04	0.003	NPL	Npl	1.94	0.000	IFIH1	Ifih1	2.21	0.000	H2-Q10	NA
1.35	0.000	NA	Hist1h2ab	1.04	0.020	TBX15	Tbx15	1.93	0.000	PYY	Pyy	2.20	0.000	Cbln1	CBLN1
1.35	0.019	HBEGF	Hbegf	1.04	0.018		2810417H1	1.92	0.000	NA	Gm8979	2.20	0.000	Klrb1c	KLRB1
1.34	0.002	TGM3	Tgm3	1.04	0.018	KIAA0101	2810417H1	1.91	0.000	CSF2RB	Csf2rb	2.20	0.000	Fyb	FYB
1.33	0.004	NDC80	Ndc80	1.04	0.004	PER3	Per3	1.90	0.000	CTSC	Ctsc	2.20	0.000	Sprr2k	NA
1.33	0.001	FAM162A	Fam162a	1.03	0.002	DSG1	Dsg1b	1.90	0.000	ELF3	Elf3	2.19	0.000	Pou2f2	POU2F2
1.33	0.004	CCNB1	Ccnb1	1.03	0.014	EREG	Ereg	1.89	0.000	NA	Gm4847	2.19	0.000	Gk	GK
1.33	0.001	STAB1	Stab1	1.03	0.001	SLC27A4	Slc27a4	1.89	0.001	NA	Krtap19-4	2.19	0.001	Gbp8	GBP6
1.32	0.004	CYTH4	Cyth4	1.03	0.008	SLC18A2	Slc18a2	1.89	0.000	RNF213	Rnf213	2.18	0.000	Rac2	RAC2
1.32	0.001	PLK1	Plk1	1.03	0.004	DNM1	Dnm1	1.88	0.000	NA	Tdh	2.18	0.000	Bcl2a1a	BCL2A1
1.32	0.000	KRT1	Krt1	1.03	0.004	GPD1	Gpd1	1.88	0.001	SIRPB2	Gm5150	2.18	0.000	Sh2d2a	SH2D2A
1.32	0.011	GDA	Gda	1.03	0.021	TMIGD1	Tmigd1	1.87	0.000	PLAUR	Plaur	2.18	0.000	Osm	OSM
1.31	0.031	NA	Rnu1b1	1.03	0.018	CH25H	Ch25h	1.87	0.000	IL10	Il10	2.17	0.004	Bcat1	BCAT1
1.31	0.031	NA	Rnu1b1	1.02	0.003	NUCB2	Nucb2	1.87	0.000	NA	H2-Q8	2.17	0.023	Ankrd1	ANKRD1
1.31	0.031	NA	Rnu1b1	1.02	0.003	NUCB2	Nucb2	1.86	0.001	NA	Pyhin1	2.17	0.000	Vav1	VAV1
1.31	0.031	NA	Rnu1b1	1.02	0.007	ZWILCH	Zwilch	1.85	0.000	KRTAP2-2	Gm11938	2.17	0.000	Gpr132	GPR132
1.31	0.031	NA	Rnu1b1	1.02	0.015	CHCHD10	Chchd10	1.85	0.000	KRTAP2-3	Gm11938	2.17	0.000	Krt6a	KRT6B
1.31	0.031	NA	Rnu1b1	1.02	0.001	HMGCS1	Hmgcs1	1.85	0.000	KRTAP2-4	Gm11938	2.17	0.000	Krt6a	KRT6C
1.31	0.031	NA	Rnu1b1	1.02	0.007	RAB31	Rab31	1.85	0.000	KRTAP2-1	Gm11938	2.17	0.000	Krt6a	KRT6A
1.31	0.031	NA	Rnu1b1	1.01	0.001	FAM162A	Fam162a	1.85	0.000	CLEC7A	Clec7a	2.16	0.000	Cd27	CD27
1.31	0.031	NA	Rnu1b1	1.01	0.006	LY75-CD30	Ly75	1.84	0.000	CASP14	Casp14	2.16	0.000	Il13ra2	IL13RA2
1.31	0.007	C1QA	C1qa	1.01	0.006	LY75	Ly75	1.84	0.000	NLRC5	Nlrc5	2.15	0.001	Zbp1	ZBP1
1.31	0.034	NCF4	Ncf4	1.01	0.040	MEF2C	Mef2c	1.82	0.000	GJB6	Gjb6	2.15	0.000	Pira6	NA
1.31	0.036	NA	Sprr2i	1.00	0.006	FAT4	Fat4	1.82	0.000	CD53	Cd53	2.14	0.015	Ccl12	CCL8
1.31	0.015	NEK6	Nek6	1.00	0.008	LIPK	Lipk	1.82	0.000	USP41	Usp18	2.14	0.000	Milr1	MILR1
1.31	0.000	HIST1H2AB	Hist1h2af	1.00	0.008	HMMR	Hmmr	1.82	0.000	USP18	Usp18	2.14	0.000	Serpinb12	SERPINB12
1.31	0.009	GPR35	Gpr35	1.00	0.023	SLC25A33	Slc25a33	1.82	0.000	KLK10	Klk10	2.14	0.000	Jakmip1	JAKMIP1
1.30	0.006	NA	Mir1983	1.00	0.023	ABCG2	Abcg2	1.82	0.000	MPEG1	Mpeg1	2.14	0.000	Il1f8	IL36B
1.29	0.003	MMP25	Mmp25	1.00	0.031	CA5B	Car5b	1.82	0.002	MMP13	Mmp13	2.13	0.000	Spn	SPN
1.29	0.006	LUM	Lum	1.00	0.034	BUB1	Bub1	1.81	0.000	NLRC5	Nlrc5	2.13	0.000	Spn	SPN
1.29	0.011	APLNR	Aplnr	1.00	0.027	MFAP4	Mfap4	1.81	0.000	UPP1	Upp1	2.13	0.000	Lck	LCK
1.29	0.019	NA	Uox	-1.01	0.001	KCTD12	Kctd12	1.81	0.000	GSAP	Gsap	2.13	0.000	Krt6a	KRT6B
1.29	0.037	C5AR1	C5ar1	-1.01	0.004	SNORD89	Snord89	1.81	0.000	CA2	Car2	2.13	0.000	Krt6a	KRT6C
1.29	0.010	SLC7A8	Slc7a8	-1.01	0.012	USP41	Usp18	1.81	0.000		Sp110	2.13	0.000	Krt6a	KRT6A
1.28	0.004	NA	Tmprss11g	-1.01	0.012	USP18	Usp18	1.81	0.000	SP110	Sp110	2.12	0.000	Msr1	MSR1
1.28	0.006	NA	Gm5593	-1.02	0.010	DMPK	Dmpk	1.81	0.000	LGALS3BP	Lgals3bp	2.12	0.000	Il10ra	IL10RA
1.28	0.002	TOP2A	Top2a	-1.02	0.022	ABLIM2	Ablim2	1.80	0.000	MNDA	Ifi205	2.11	0.000	Ly9	LY9
1.28	0.025	LYN	Lyn	-1.02	0.014	CXCL14	Cxcl14	1.80	0.000	GDA	Gda	2.11	0.000	Tnfrsf9	TNFRSF9
1.28	0.006	SFRP2	Sfrp2	-1.02	0.029	ATG16L1	Atg16l1	1.77	0.000	RNF213	Rnf213	2.11	0.000	Slamf1	SLAMF1
1.28	0.001	AURKB	Aurkb	-1.02	0.013	SLC6A4	Slc6a4	1.77	0.000	C1S	C1s1	2.11	0.003	Slfn1	SLFN12L
1.28	0.002	PGLYRP3	Pglyrp3	-1.03	0.014	GAL3ST1	Gal3st1	1.76	0.000	NLRC5	Nlrc5	2.11	0.003	Slfn1	SLFN12
1.27	0.004	COL5A2	Col5a2	-1.03	0.004	FAM117A	Fam117a	1.76	0.000	RNF213	Rnf213	2.11	0.000	Klrk1	KLRK1
1.26	0.017	CLEC4A	Clec4a2	-1.03	0.006	PTGDS	Ptgds	1.76	0.000	IL4R	Il4ra	2.11	0.000	Klrk1	KLRK1
1.26	0.030	IL33	Il33	-1.04	0.004	CTTNBP2	Cttnbp2	1.76	0.000	TCHHL1	Tchhl1	2.11	0.000	Trem3	NA
1.26	0.004	CRABP1	Crabp1	-1.04	0.003	DAPL1	Dapl1	1.76	0.000	NA	Tdh	2.10	0.000	Slc5a9	SLC5A9
1.26	0.003	CXCL12	Cxcl12	-1.04	0.007	TRIML2	Triml2	1.75	0.000	NA	9930111J21	2.10	0.000	Eomes	EOMES
1.25	0.001	NA	Urah	-1.04	0.002	TMEM177	Tmem177	1.75	0.000	MSR1	Msr1	2.10	0.000	Klk12	KLK12
1.25	0.005	COL5A1	Col5a1	-1.05	0.010	ASB4	Asb4	1.74	0.000	COL1A1	Col1a1	2.08	0.000	Tcf23	TCF23
1.25	0.009	RIPK3	Ripk3	-1.05	0.004	PLA2G16	Pla2g16	1.74	0.000	STAT2	Stat2	2.08	0.000	Ankrd66	ANKRD66
1.25	0.049	DSC2	Dsc2	-1.05	0.022		Rnaset2a	1.74	0.000	PLEK	Plek	2.07	0.000	Pik3ap1	PIK3AP1
1.25	0.042	KLRG1	Klrg1	-1.05	0.022	RNASET2	Rnaset2a	1.74	0.000	NLRC5	Nlrc5	2.07	0.000	Tnfrsf9	TNFRSF9
1.24	0.004	TMEM173	Tmem173	-1.06	0.040	NCKAP5	Nckap5	1.74	0.000	GK	Gk	2.07	0.000	Otud7a	OTUD7A
1.24	0.017	AKR1C1	Akr1c18	-1.06	0.032	NA	Mir365-1	1.74	0.000	SLC7A11	Slc7a11	2.07	0.000	Samsn1	SAMSN1
1.24	0.017		Akr1c18	-1.06	0.006	CCDC27	Ccdc27	1.74	0.000	SLFN13	Slfn9	2.06	0.000	Pilrb1	PILRB
1.24	0.017	AKR1C4	Akr1c18	-1.06	0.019	MORN4	Morn4	1.74	0.000	SLFN11	Slfn9	2.06	0.000	Pilrb1	PILRA
1.24	0.017	AKR1C3	Akr1c18	-1.07	0.015		Rnaset2a	1.73	0.000	NA	H2-Q4	2.06	0.000	Rnd1	RND1

ACCEPTED MANUSCRIPT

1.24	0.017	AKR1C2	Akr1c18	-1.07	0.015	RNASET2	Rnaset2a	1.73	0.000	NLRC5	Nlrc5	2.06	0.000	Abcc3	ABCC3
1.24	0.037	NA	Oasl2	-1.07	0.008	IL1F10	Il1f10	1.73	0.018	PRL	Prl2c3	2.06	0.000	Aoah	AOAH
1.24	0.024	NCF2	Ncf2	-1.07	0.006	NA	Skint5	1.73	0.000	SAMD9L	Samd9l	2.06	0.000	C3ar1	C3AR1
1.24	0.028	SEMA6B	Sema6b	-1.07	0.038	SLC25A37	Slc25a37	1.73	0.000	TRIM21	Trim21	2.05	0.000	Fabp7	FABP7
1.24	0.006	FKBP11	Fkbp11	-1.07	0.014	ACCS	Accs	1.72	0.000	IRF4	Irf4	2.04	0.003	Pyhin1	NA
1.24	0.024	IL24	Il24	-1.08	0.005	SLC2A12	Slc2a12	1.71	0.000	TPH1	Tph1	2.04	0.002	Tnnt1	TNNT1
1.24	0.004	PDPN	Pdpn	-1.08	0.018	LRRC31	Lrrc31	1.71	0.001	APOL4	Apol9a	2.04	0.000	Cd40	CD40
1.24	0.003	ASPM	Aspm	-1.08	0.003	RHO	Rho	1.71	0.001	APOL2	Apol9a	2.04	0.000	Cd3d	CD3D
1.24	0.004	MRGPRX1	Mrgprx1	-1.08	0.001	DOK4	Dok4	1.71	0.001	APOL3	Apol9a	2.04	0.001	Bst1	BST1
1.24	0.004	MRGPRX4	Mrgprx1	-1.09	0.029	TRPV6	Trpv6	1.71	0.001	APOL1	Apol9a	2.03	0.000	Abi3	ABI3
1.24	0.004	MRGPRX2	Mrgprx1	-1.09	0.003	CD82	Cd82	1.71	0.000	KRT39	Krt39	2.03	0.000	Ccr5	CCR2
1.24	0.004	MRGPRX3	Mrgprx1	-1.09	0.005	PAQR8	Paqr8	1.70	0.000	GPR171	Gpr171	2.03	0.000	Atp8b4	ATP8B4
1.24	0.001	IL36B	Il1f8	-1.09	0.001	TRIM2	Trim2	1.70	0.000	SLC26A9	Slc26a9	2.03	0.000	Atp13a4	ATP13A4
1.24	0.000	MKI67	Mki67	-1.09	0.001	WNK2	Wnk2	1.70	0.000	PTGES	Ptges	2.03	0.000	Rptn	RPTN
1.24	0.001	JMJD7-PLA	Pla2g4b	-1.09	0.001	PKIB	Pkib	1.70	0.010	TNFAIP6	Tnfaip6	2.03	0.000	Irf7	IRF7
1.24	0.001	JMJD7-PLA	Pla2g4b	-1.10	0.028	NA	Gm13238	1.70	0.000	COL12A1	Col12a1	2.03	0.000	Gpr35	GPR35
1.24	0.001	PLA2G4B	Pla2g4b	-1.10	0.001	SEMA3D	Sema3d	1.69	0.000	NA	AI504432	2.02	0.008	Ccr1	CCR1
1.24	0.001	ECT2	Ect2	-1.10	0.036	GOLGA7B	Golga7b	1.69	0.000	FCGR3B	Fcgr4	2.02	0.000	Has3	HAS3
1.23	0.032	NA	Hist1h2bk	-1.10	0.004	ARG1	Arg1	1.69	0.000	FCGR3A	Fcgr4	2.02	0.005	Oasl1	OASL
1.23	0.000	KLK8	Klk8	-1.10	0.006	IFNGR1	Ifngr1	1.68	0.000	RNF213	Rnf213	2.00	0.000	Rac2	RAC2
1.23	0.001	KIF20A	Kif20a	-1.11	0.026	PM20D1	Pm20d1	1.68	0.000	OSMR	Osmr	2.00	0.000	Slco1a5	SLCO1A2
1.23	0.003	CENPE	Cenpe	-1.11	0.029	CYP4V2	Cyp4v3	1.67	0.000	LYG2	Lyg2	2.00	0.000	Klrd1	KLRD1
1.23	0.018	ANXA3	Anxa3	-1.12	0.000	PTPN14	Ptpn14	1.67	0.000	VCAN	Vcan	2.00	0.000	Slc37a2	SLC37A2
1.23	0.036	NA	Gsta4	-1.12	0.001	SLC7A6	Slc7a6	1.67	0.000	RBP1	Rbp1	2.00	0.000	Ctla4	CTLA4
1.23	0.019	LCP1	Lcp1	-1.12	0.001	KRT15	Krt15	1.66	0.000	KRTAP4-3	Gm11564	1.99	0.000	Cotl1	COTL1
1.23	0.014	PARM1	Parm1	-1.12	0.000	GLDC	Gldc	1.66	0.000	FCER1A	Fcer1a	1.99	0.000	Trim30b	NA
1.23	0.025	FAM65B	Fam65b	-1.13	0.038	TRPC4	Trpc4	1.66	0.004	MRGPRX3	Mrgpra2a	1.99	0.000	Gbp2	GBP2
1.23	0.040	CD300LB	Cd300lb	-1.13	0.033	DCLK3	Dclk3	1.66	0.004	MRGPRX2	Mrgpra2a	1.99	0.000	Fasl	FASLG
1.22	0.002	IKZF3	Ikzf3	-1.13	0.009	ARMC2	Armc2	1.66	0.004	MRGPRX4	Mrgpra2a	1.99	0.000	Pla2g7	PLA2G7
1.22	0.007	SELPLG	Selplg	-1.14	0.021	FGF5	Fgf5	1.66	0.004	MRGPRX1	Mrgpra2a	1.98	0.000	Lat	LAT
1.22	0.001	IL36G	Il1f9	-1.14	0.031	RNF180	Rnf180	1.66	0.000	HMCN1	Hmcn1	1.98	0.000	C130050O1	NA
1.22	0.045	PILRB	Pilra	-1.14	0.037	HLA-E	Gm10499	1.66	0.003	NA	Ifitm6	1.98	0.000	Mmp9	MMP9
1.22	0.045	PILRA	Pilra	-1.14	0.037	HLA-A	Gm10499	1.66	0.000	SBNO2	Sbno2	1.98	0.000	Socs3	SOCS3
1.22	0.014	BIN2	Bin2	-1.14	0.037	HLA-B	Gm10499	1.65	0.000	NA	Teddm3	1.98	0.000	Slc11a1	SLC11A1
1.22	0.002	KIF15	Kif15	-1.14	0.037	HLA-G	Gm10499	1.65	0.001	LIPG	Lipg	1.98	0.000	Slc1a1	SLC1A1
1.22	0.002	PLVAP	Plvap	-1.14	0.037	HLA-F	Gm10499	1.65	0.000	GBP6	Gbp8	1.97	0.000	Mmp12	MMP12
1.22	0.029	PLA2G7	Pla2g7	-1.14	0.037	HLA-C	Gm10499	1.65	0.000	CCRL2	Ccrl2	1.97	0.000	Cd160	CD160
1.21	0.004	LGMN	Lgmn	-1.14	0.016	PYY	Pyy	1.65	0.004	CD14	Cd14	1.97	0.000	H2-Q5	HLA-A
1.21	0.007	EMILIN1	Emilin1	-1.15	0.008	RHPN2	Rhpn2	1.65	0.000	IL36A	Il1f6	1.97	0.000	H2-Q5	HLA-C
1.21	0.001	LRRC17	Lrrc17	-1.15	0.001	FBXO32	Fbxo32	1.65	0.000	RNF19B	Rnf19b	1.97	0.000	H2-Q5	HLA-B
1.21	0.001	CD44	Cd44	-1.15	0.001	DNAJC6	Dnajc6	1.64	0.000	SLC7A8	Slc7a8	1.97	0.000	H2-Q5	HLA-G
1.21	0.005	NA	Cmah	-1.15	0.014	WNT16	Wnt16	1.64	0.001	CXCL5	Cxcl5	1.97	0.000	H2-Q5	HLA-E
1.21	0.006	TARM1	Tarm1	-1.16	0.003	HS3ST6	Hs3st6	1.64	0.001	CXCL6	Cxcl5	1.97	0.000	H2-Q5	HLA-F
1.21	0.011	P2RY12	P2ry12	-1.16	0.010	ARL4D	Arl4d	1.63	0.000	NA	Olfr1396	1.96	0.000	Klk9	KLK9
1.20	0.023	IL1RL1	Il1rl1	-1.16	0.001	HSPB1	Hspb1	1.63	0.000	CHI3L1	Chil1	1.96	0.000	Klk9	
1.20	0.002	BIRC5	Birc5	-1.16	0.008	C12orf56	D930020B1	1.62	0.000	ATF3	Atf3	1.96	0.000	Cd300lf	CD300LD
1.20	0.007	CDC25C	Cdc25c	-1.17	0.034	TNFSF18	Tnfsf18	1.62	0.001	NA	Krtap5-4	1.96	0.000	Cd300lf	CD300LF
1.20	0.009		Entpd1	-1.18	0.011	ABTB2	Abtb2	1.61	0.000	CASP1	Casp1	1.95	0.000	Il2rb	IL2RB
1.20	0.009	ENTPD1	Entpd1	-1.18	0.002	NKD2	Nkd2	1.61	0.000		Sp110	1.95	0.000	Lgi2	LGI2
1.20	0.000	NCAPH	Ncaph	-1.18	0.004	BMP4	Bmp4	1.61	0.000	SP110	Sp110	1.95	0.000	Apol7c	APOL4
1.20	0.004	PRSS27	Prss27	-1.18	0.022	KCNA1	Kcna1	1.60	0.001	LCN2	Lcn2	1.95	0.000	Apol7c	APOL3
1.20	0.023	PTAFR	Ptafr	-1.18	0.003	EFHD1	Efhd1	1.60	0.000	SLC34A2	Slc34a2	1.95	0.000	Apol7c	APOL2
1.20	0.011	NA	Gm12603	-1.19	0.010	LGALS12	Lgals12	1.60	0.000	PI15	Pi15	1.95	0.000	Apol7c	APOL1
1.20	0.009	MS4A14	Ms4a14	-1.22	0.001	C10orf90	D7Ertd443e	1.60	0.001	NA	Gm10153	1.95	0.000	Rasal3	RASAL3
1.20	0.001	PBK	Pbk	-1.23	0.001	KIF21A	Kif21a	1.60	0.000	NLRC5	Nlrc5	1.95	0.000	F10	F10
1.20	0.005	CSF2RB	Csf2rb	-1.23	0.016	SLC6A13	Slc6a13	1.59	0.000	CPXM1	Cpxm1	1.95	0.000	Havcr2	HAVCR2
1.20	0.003	HMMR	Hmmr	-1.23	0.002	BMP3	Bmp3	1.59	0.001	RNF213	Rnf213	1.95	0.000	Slc28a3	SLC28A3
1.19	0.025	ANGPTL4	Angptl4	-1.23	0.022	WIPF3	Wipf3	1.58	0.000	STOM	Stom	1.95	0.000	Pglyrp1	PGLYRP1
1.19	0.023	MS4A8	Ms4a8a	-1.24	0.016	HOXC13	Hoxc13	1.58	0.000	KRT82	Krt82	1.94	0.001	AA467197	C15orf48
1.19	0.010	BASP1	Basp1	-1.24	0.011	CYBRD1	Cybrd1	1.58	0.000	CCDC71L	Ccdc71l	1.94	0.000	Slc2a6	SLC2A6
1.19	0.012	LRG1	Lrg1	-1.24	0.008	MRGPRX2	Mrgprb2	1.56	0.000	PGLYRP3	Pglyrp3	1.94	0.002	Ccr5	CCR2
1.19	0.000	CA12	Car12	-1.24	0.008	MRGPRX4	Mrgprb2	1.56	0.000	SCNN1G	Scnn1g	1.94	0.000	Slc5a9	SLC5A9
1.19	0.042	NFKBID	Nfkbid	-1.24	0.008	MRGPRX3	Mrgprb2	1.56	0.002	TMPRSS11	Tmprss11b	1.93	0.000	F7	F7
1.19	0.002	TCF23	Tcf23	-1.24	0.008	MRGPRX1	Mrgprb2	1.56	0.000	BST2	Bst2	1.93	0.000	Txk	TXK
1.18	0.011	PCSK5	Pcsk5	-1.24	0.001	HSPB8	Hspb8	1.56	0.000	SMIM3	Smim3	1.93	0.000	Pde1b	PDE1B
1.18	0.001	TAGLN2	Tagln2	-1.24	0.007	EP400	Ep400	1.56	0.001	KRTAP1-1	Krtap9-3	1.93	0.000	Cd14	CD14
1.18	0.005	EPHA3	Epha3	-1.25	0.004	ABLIM3	Ablim3	1.56	0.001	KRTAP1-3	Krtap9-3	1.93	0.000	Ncf4	NCF4
1.18	0.006	TNFAIP2	Tnfaip2	-1.26	0.004	NA	n-R5s136	1.56	0.001	KRTAP1-4	Krtap9-3	1.93	0.020	Tnni1	TNNI1

ACCEPTED MANUSCRIPT

1.18	0.006	FCER1G	Fcer1g	-1.28	0.008	KCTD16	Kctd16	1.56	0.001	KRTAP1-5	Krtap9-3	1.92	0.000	Clca1	CLCA1
1.18	0.002	BUB1B	Bub1b	-1.28	0.002	DAGLB	Daglb	1.56	0.000	HMCN1	Hmcn1	1.92	0.001	Igsf6	IGSF6
1.18	0.010	LAIR1	Lair1	-1.29	0.001	ADH6	Adh6a	1.55	0.001	KRTAP4-7	Gm11555	1.92	0.000	Cfap69	CFAP69
1.18	0.010	LAIR2	Lair1	-1.29	0.001	CITED4	Cited4	1.55	0.001	KRTAP4-9	Gm11555	1.92	0.000	Cxadr	CXADR
1.17	0.000	TREX2	Trex2	-1.30	0.046	PRSS53	Prss53	1.55	0.001	KRTAP4-8	Gm11555	1.91	0.000	Galnt6	GALNT6
1.17	0.001	KIF18B	Kif18b	-1.30	0.004	NA	Wfdc21	1.55	0.000	PHLDA1	Phlda1	1.91	0.000	A630001G2	NA
1.17	0.004	KDELR3	Kdelr3	-1.30	0.002	SATB1	Satb1	1.55	0.000	GPR65	Gpr65	1.91	0.000	Pik3r5	PIK3R5
1.17	0.049	GZMB	Gzmb	-1.33	0.023	SLC7A8	Slc7a8	1.54	0.000	CISH	Cish	1.91	0.001	Plek	PLEK
1.17	0.011	C1QC	C1qc	-1.34	0.009	CCR4	Ccr4	1.54	0.000	HTR1B	Htr1b	1.90	0.000	Hk3	HK3
1.17	0.004	PTPRZ1	Ptprz1	-1.34	0.001	GPNMB	Gpnmb	1.54	0.000	KLK9	Klk9	1.90	0.000	Serpina3n	SERPINA3
1.17	0.003	NFIL3	Nfil3	-1.35	0.001	CPXM2	Cpxm2	1.54	0.000		Klk9	1.90	0.000	Serpina3n	
1.17	0.004	DEPDC1	Depdc1a	-1.35	0.046	UPP1	Upp1	1.53	0.000	NLRC5	Nlrc5	1.90	0.000	Cd8b1	CD8B
1.17	0.014	NA	Ifi202b	-1.35	0.016	FAM49A	Fam49a	1.53	0.001	NA	D730001G1	1.89	0.000	Il17a	IL17A
1.16	0.024	ITGB2	Itgb2	-1.36	0.002	IL20RA	Il20ra	1.53	0.000	SLC39A8	Slc39a8	1.89	0.000	Pira11	NA
1.16	0.002	IQGAP3	Iqgap3	-1.38	0.009	OR4C15	Olfr1226	1.53	0.000	NA	H2-Q7	1.89	0.000	Rgs4	RGS4
1.16	0.014	ALOX5AP	Alox5ap	-1.39	0.013	SLAIN1	Slain1	1.52	0.000	KLRC1	Klrc1	1.89	0.000	Gna13	GNA13
1.16	0.001	SPON2	Spon2	-1.40	0.043	EIF4A2	Snora81	1.52	0.000	KLRC2	Klrc1	1.89	0.000	Gpr176	GPR176
1.16	0.002	AURKA	Aurka	-1.41	0.026	DLX2	Dlx2	1.52	0.000	KLRC4-KLR	Klrc1	1.89	0.011	Slfn4	SLFN12
1.16	0.039	IGSF6	Igsf6	-1.42	0.040	SLCO5A1	Slco5a1	1.52	0.000		Klrc1	1.89	0.011	Slfn4	SLFN12L
1.15	0.004	HIST1H2AE	Hist1h2ag	-1.43	0.003	SLC23A1	Slc23a1	1.52	0.000	KLRC3	Klrc1	1.89	0.000	Nfkbid	NFKBID
1.15	0.046	ARG1	Arg1	-1.44	0.002	TMOD4	Tmod4	1.52	0.000	KLRC4	Klrc1	1.89	0.000	Ddah1	DDAH1
1.15	0.009	BCL2A1	Bcl2a1b	-1.44	0.001	HSD17B14	Hsd17b14	1.52	0.001	RNF213	Rnf213	1.89	0.000	Parvg	PARVG
1.15	0.001	FABP5	Fabp5	-1.45	0.002	GPHA2	Gpha2	1.52	0.000	ICOS	Icos	1.88	0.001	Klk1	KLK2
1.15	0.032	MPEG1	Mpeg1	-1.45	0.001	PROB1	Prob1	1.51	0.000	APOL4	Apol9a	1.88	0.001	Klk1	KLK3
1.15	0.002	SERPINH1	Serpinh1	-1.46	0.000	SH3D21	Sh3d21	1.51	0.000	APOL2	Apol9a	1.88	0.000	Cd160	CD160
1.15	0.013	EFEMP2	Efemp2	-1.46	0.002	RAB11FIP4	Rab11fip4	1.51	0.000	APOL3	Apol9a	1.86	0.000	Slc34a2	SLC34A2
1.15	0.008	UNC93B1	Unc93b1	-1.46	0.009	DLX3	Dlx3	1.51	0.000	APOL1	Apol9a	1.86	0.000	Cela1	CELA1
1.15	0.046	PPP1R3B	Ppp1r3b	-1.49	0.002	MRGPRX1	Mrgprb3	1.50	0.022	TREM1	Trem1	1.86	0.000	Mmp10	MMP10
1.15	0.000	GLRX	Glrx	-1.49	0.002	MRGPRX4	Mrgprb3	1.50	0.000	NLRC5	Nlrc5	1.85	0.000	Zc3h12a	ZC3H12A
1.14	0.047	TNFRSF1B	Tnfrsf1b	-1.49	0.002	MRGPRX3	Mrgprb3	1.50	0.000	NA	Sprr2d	1.85	0.000	Glrx	GLRX
1.14	0.004	SPAG5	Spag5	-1.49	0.002	MRGPRX2	Mrgprb3	1.50	0.000	COL3A1	Col3a1	1.85	0.005	Tgm3	TGM3
1.14	0.004		Spag5	-1.49	0.003	SERPINA1	Serpina1e	1.50	0.001	NA	Adamts9	1.85	0.000	Arhgap4	ARHGAP4
1.14	0.001	H2AFX	H2afx	-1.49	0.003	SERPINA2	Serpina1e	1.50	0.000	MMP12	Mmp12	1.85	0.000	Spink12	NA
1.14	0.004	DCLK1	Dclk1	-1.49	0.015	ZNF618	Zfp618	1.49	0.000	PINLYP	Pinlyp	1.85	0.000	Pstpip1	PSTPIP1
1.13	0.001	ENG	Eng	-1.50	0.001	PRRG3	Prrg3	1.49	0.001	KRT35	Krt35	1.84	0.000	Tmem8	TMEM8A
1.13	0.015	NA	Mir493	-1.51	0.002	FOXN1	Foxn1	1.49	0.000	DDR2	Ddr2	1.84	0.000	5430427O1	CXorf21
1.13	0.000	KIF22	Kif22	-1.52	0.000	CSRNP2	Csrnp2	1.49	0.000		Serpina3n	1.84	0.005	Tgm3	TGM3
1.12	0.003	ADAMTS15	Adamts15	-1.52	0.036	RSPO3	Rspo3	1.49	0.000	SERPINA3	Serpina3n	1.84	0.000	Slc7a7	SLC7A7
1.12	0.045	MARCKSL1	Marcksl1	-1.53	0.002	NA	Gm12436	1.48	0.001	TNFAIP2	Tnfaip2	1.84	0.000	Dnmt3l	
1.12	0.025	TRAV23DV	Trav14-1	-1.54	0.002	FGF18	Fgf18	1.48	0.000	PXDC1	Pxdc1	1.84	0.000	Dnmt3l	DNMT3L
1.12	0.024	PLA2G4D	Pla2g4d	-1.55	0.001	NA	Lce1m	1.48	0.000	AHCY	Ahcy	1.84	0.000	Cd274	CD274
1.12	0.010		Serpina3m	-1.57	0.015	CARNS1	Carns1	1.48	0.000	NLRC5	Nlrc5	1.84	0.000	Cfb	CFB
1.12	0.010	SERPINA3	Serpina3m	-1.58	0.001	PVRL3	Pvrl3	1.47	0.001	ARC	Arc	1.84	0.000	Cfb	
1.12	0.001	ANLN	Anln	-1.58	0.047	CDH6	Cdh6	1.47	0.000	PDCD1LG2	Pdcd1lg2	1.84	0.000	Ltb	LTB
1.12	0.019	NA	Fcrls	-1.59	0.002	PAQR7	Paqr7	1.47	0.000	NLRC5	Nlrc5	1.83	0.000	Myo1f	MYO1F
1.11	0.002	DEGS2	Degs2	-1.60	0.048	KRTAP4-3	Gm11564	1.47	0.000	MS4A6E	Ms4a6c	1.83	0.000	Gbp2	GBP2
1.11	0.006	IL2RG	Il2rg	-1.66	0.039	GPRC5A	Gprc5a	1.47	0.000	MS4A6A	Ms4a6c	1.82	0.003	Zbp1	ZBP1
1.11	0.030	GFRA1	Gfra1	-1.68	0.001	UPK3B	Upk3b	1.47	0.000	TRIM6-TRIM	Trim34a	1.82	0.000	Glipr1	GLIPR1
1.11	0.029	NA	Mir453	-1.68	0.001	UPK3B	Upk3b	1.47	0.000	TRIM34	Trim34a	1.82	0.000	Gk	GK
1.11	0.002	OLFML2B	Olfml2b	-1.68	0.002	NA	F830045P1	1.47	0.000	PRSS27	Prss27	1.82	0.000	Hist1h2br	NA
1.10	0.001	COL6A2	Col6a2	-1.69	0.036	TM4SF4	Tm4sf4	1.46	0.000	RNF213	Rnf213	1.82	0.000	4930538K1	NA
1.10	0.005	NA	Lce1e	-1.69	0.047	MSX2	Msx2	1.46	0.000	PROCR	Procr	1.82	0.000	Klrb1f	KLRB1
1.10	0.001	NA	Teddm3	-1.70	0.001	SLC24A3	Slc24a3	1.46	0.000	IL36B	Il1f8	1.82	0.000	Stat1	STAT1
1.10	0.004	ICOS	Icos	-1.72	0.007	RAB3B	Rab3b	1.46	0.000	FYB	Fyb	1.82	0.000	Hbegf	HBEGF
1.10	0.002	SAMHD1	Samhd1	-1.73	0.033	NA	1700063D0	1.46	0.000	SLC25A48	Slc25a48	1.82	0.000	Lcp2	LCP2
1.10	0.031	TYROBP	Tyrobp	-1.74	0.009	KRT75	Krt75	1.45	0.000	CASP12	Casp12	1.82	0.000	Hbegf	HBEGF
1.10	0.010	GPR176	Gpr176	-1.75	0.003	SLC9A3	Slc9a3	1.45	0.000	SLC10A6	Slc10a6	1.82	0.000	Slc5a9	SLC5A9
1.10	0.003	FSTL1	Fstl1	-1.76	0.009	BAMBI	Bambi	1.45	0.000	CSF2RB	Csf2rb2	1.81	0.000	Ccr2	CCR2
1.10	0.008	CTSC	Ctsc	-1.76	0.018	MLANA	Mlana	1.45	0.000	JAK2	Jak2	1.81	0.001	Cybb	CYBB
1.09	0.005	C3AR1	C3ar1	-1.76	0.000	ABCA5	Abca5	1.45	0.000	MMP19	Mmp19	1.81	0.000	Coro1a	CORO1A
1.09	0.023	VAV1	Vav1	-1.78	0.049	OTOP2	Otop2	1.45	0.000	RNF213	Rnf213	1.80	0.000	Cxcl16	CXCL16
1.09	0.013	NDNF	Ndnf	-1.78	0.021	CHRNB4	Chrnb4	1.45	0.000	SOCS2	Socs2	1.80	0.001	Col8a1	COL8A1
1.09	0.003	THBS2	Thbs2	-1.79	0.000	NA	Nlrp1c-ps	1.44	0.000	CTSE	Ctse	1.80	0.000	Htr7	HTR7
1.09	0.003	NCF1	Ncf1	-1.89	0.000	NPAS2	Npas2	1.44	0.000	KRT17	Krt17	1.80	0.000	Was	WAS
1.09	0.003	PLAT	Plat	-1.91	0.028	TGM6	Tgm6	1.44	0.000	CCR2	Ccr2	1.80	0.000	Pirb	NA
1.09	0.001	FKBP10	Fkbp10	-1.94	0.027	STOX1	Stox1	1.44	0.000	XDH	Xdh	1.80	0.000	Igf2bp2	IGF2BP2
1.09	0.014	NGF	Ngf	-1.94	0.026	IL22RA2	Il22ra2	1.44	0.000	TCAF2	Tcaf2	1.79	0.000	Slc6a20a	SLC6A20
1.08	0.004	PF4V1	Pf4	-1.94	0.009	NA	Crisp3	1.43	0.001	NA	Tmprss11g	1.79	0.000	Acap1	ACAP1

ACCEPTED MANUSCRIPT

1.08	0.004	PF4	Pf4	-1.95	0.000	KCNJ16	Kcnj16	1.43	0.005	CLEC4E	Clec4e	1.79	0.000	Ptgs2	PTGS2
1.08	0.002	LPO	Lpo	-1.95	0.018	SCD	Scd3	1.43	0.000	HLA-G	H2-T24	1.79	0.000	Tnfaip2	TNFAIP2
1.08	0.000	SLC37A2	Slc37a2	-1.96	0.008	KRT32	Krt32	1.43	0.000	HLA-A	H2-T24	1.79	0.000	Klra17	NA
1.08	0.017	LYVE1	Lyve1	-2.01	0.001	TGM7	Tgm7	1.43	0.000	HLA-C	H2-T24	1.79	0.000	Aldh3b3	ALDH3B2
1.08	0.003	IL2RA	Il2ra	-2.03	0.001	BTC	Btc	1.43	0.000	HLA-E	H2-T24	1.79	0.001	Sox11	SOX11
1.08	0.030	LAMC2	Lamc2	-2.04	0.014	KRT36	Krt36	1.43	0.000	HLA-B	H2-T24	1.78	0.000	Vav1	VAV1
1.08	0.022	HCLS1	Hcls1	-2.06	0.006	KRTAP12-1	Gm10024	1.43	0.000	HLA-F	H2-T24	1.78	0.000	Tmigd1	TMIGD1
1.07	0.002	GALNT16	Galnt16	-2.06	0.006	KRTAP12-2	Gm10024	1.43	0.000	NA	Sprr2k	1.78	0.000	Plek	PLEK
1.07	0.047	CD80	Cd80	-2.06	0.006	KRTAP12-3	Gm10024	1.42	0.000	ST5	St5	1.78	0.000	Ptprcap	PTPRCAP
1.07	0.010	CLEC12B	Clec12b	-2.08	0.006	KRTAP12-2	Gm10142	1.42	0.000	COL1A2	Col1a2	1.78	0.001	Ccr2	CCR2
1.07	0.003	CENPN	Cenpn	-2.08	0.006	KRTAP12-3	Gm10142	1.42	0.001	HMCN1	Hmcn1	1.78	0.002	Gm9706	ISG15
1.07	0.013	LOX	Lox	-2.08	0.006	KRTAP12-1	Gm10142	1.42	0.001	OSM	Osm	1.77	0.000	U90926	NA
1.07	0.029	NA	C130050O1	-2.14	0.026	NA	Krtap4-13	1.41	0.005	CMPK2	Cmpk2	1.77	0.000	Itgb7	ITGB7
1.07	0.005	TPH1	Tph1	-2.15	0.033	KRTAP27-1	Krtap27-1	1.41	0.000	TRIM5	Trim12c	1.77	0.001	Il10	IL10
1.07	0.002	KNSTRN	Knstrn	-2.16	0.041	CHAC1	Chac1	1.41	0.000	THEMIS2	Themis2	1.77	0.000	Zap70	ZAP70
1.07	0.021	SUSD1	Susd1	-2.19	0.041	KCNE1	Kcne1	1.40	0.000	IRF7	Irf7	1.77	0.000	AI504432	NA
1.06	0.005	NA	Mir1949	-2.19	0.041		Kcne1	1.40	0.001	FBP1	Fbp1	1.77	0.002	Serpinb9b	HMSD
1.06	0.005	LRRC32	Lrrc32	-2.22	0.047	CRYBA4	Cryba4	1.40	0.000	PARP8	Parp8	1.77	0.000	Otud7a	OTUD7A
1.06	0.008	ATP13A4	Atp13a4	-2.25	0.049	SPTSSB	Sptssb	1.40	0.000	PLA2G4E	Pla2g4e	1.77	0.000	H3f3b	H3F3A
1.06	0.002	CENPA	Cenpa	-2.26	0.005	DEFB105A	Defb35	1.40	0.000	SMOX	Smox	1.77	0.000	Gla	GLA
1.06	0.004	CTSE	Ctse	-2.26	0.005	DEFB105B	Defb35	1.39	0.000	MCOLN2	Mcoln2	1.77	0.000	Cd4	CD4
1.06	0.036	CD84	Cd84	-2.26	0.008	ALOX15B	Alox8	1.39	0.000	MYD88	Myd88	1.76	0.000	Ehf	EHF
1.06	0.009	NA	Gm21188	-2.26	0.041	DSG4	Dsg4	1.39	0.018	NA	Gm30858	1.76	0.000	Themis	THEMIS
1.06	0.041	OAS2	Oas2	-2.27	0.037	NA	Gm11571	1.38	0.001	RNF213	Rnf213	1.76	0.001	Aldh3b3	ALDH3B2
1.05	0.005	MRC1	Mrc1	-2.27	0.035	KRT40	Krt40	1.38	0.021	SELP	Selp	1.76	0.000	Tnfsf14	TNFSF14
1.05	0.004	C1QTNF3-A	C1qtnf3	-2.30	0.000	LAMA1	Lama1	1.38	0.000	IFI35	Ifi35	1.76	0.000	Mcoln2	MCOLN2
1.05	0.004	C1QTNF3	C1qtnf3	-2.30	0.018	NA	Krtap5-4	1.38	0.001	AQP3	Aqp3	1.76	0.000	Zmynd15	ZMYND15
1.05	0.022	COL4A1	Col4a1	-2.42	0.000	SLC38A3	Slc38a3	1.38	0.000	PNP	Pnp	1.76	0.000	Gosr1	GOSR1
1.05	0.004	CDH5	Cdh5	-2.44	0.046	KRT39	Krt39	1.38	0.000	IRF9	Irf9	1.75	0.004	Pydc4	NA
1.05	0.008	CYP7B1	Cyp7b1	-2.47	0.036	KRT84	Krt84	1.38	0.000	HPGDS	Hpgds	1.75	0.001	Lcp2	LCP2
1.04	0.039	HK3	Hk3	-2.53	0.016	PSORS1C2	Psors1c2	1.37	0.000	MS4A7	Ms4a7	1.75	0.002	Slfn2	SLFN12
1.04	0.033	LCP2	Lcp2	-2.53	0.008	SCGB1A1	Scgb1a1	1.37	0.002	GCH1	Gch1	1.75	0.002	Slfn2	SLFN12L
1.04	0.012	DOCK2	Dock2	-2.57	0.008	KRTAP10-3	Gm19668	1.37	0.000	FHL2	Fhl2	1.75	0.000	Gna13	GNA13
1.04	0.037	CHODL	Chodl	-2.57	0.008	KRTAP10-5	Gm19668	1.37	0.000	AIF1	Aif1	1.75	0.000	Cemip	CEMIP
1.04	0.004	PXDN	Pxdn	-2.57	0.008	KRTAP10-7	Gm19668	1.37	0.002	MMP9	Mmp9	1.75	0.000	Hcst	HCST
1.03	0.022	GK	Gk	-2.57	0.008	KRTAP10-9	Gm19668	1.37	0.000	NRG1	Nrg1	1.75	0.000	Nfkbiz	NFKBIZ
1.03	0.004	ALOX15	Alox15	-2.57	0.008	KRTAP10-4	Gm19668	1.37	0.001	RNF213	Rnf213	1.75	0.001	Myo1f	MYO1F
1.03	0.004	NA	Lce1f	-2.57	0.008	KRTAP10-1	Gm19668	1.37	0.000	KRT84	Krt84	1.74	0.000	Limd2	LIMD2
1.03	0.005	COL18A1	Col18a1	-2.57	0.008	KRTAP10-6	Gm19668	1.37	0.000	PDPN	Pdpn	1.74	0.002	Cybb	CYBB
1.03	0.003	DBF4	Dbf4	-2.57	0.008	KRTAP10-1	Gm19668	1.37	0.000	SERPINB6	Serpinb6c	1.74	0.000	Nav3	NAV3
1.03	0.014	CD300LD	Cd300lh	-2.57	0.008	KRTAP10-8	Gm19668	1.36	0.000	IL2RA	Il2ra	1.74	0.000	Tbc1d10c	TBC1D10C
1.03	0.014	CD300LF	Cd300lh	-2.57	0.008	KRTAP10-1	Gm19668	1.36	0.007	JAKMIP2	Jakmip2	1.74	0.003	Rsad2	RSAD2
1.03	0.000	CWH43	Cwh43	-2.57	0.008	KRTAP10-1	Gm19668	1.36	0.000	FCER1G	Fcer1g	1.73	0.000	Itk	ITK
1.03	0.009	NCAPG	Ncapg	-2.57	0.008	KRTAP10-2	Gm19668	1.36	0.000	ALDH1A3	Aldh1a3	1.73	0.000	Ptk6	PTK6
1.02	0.006	LOXL2	Loxl2	-2.57	0.040	KRTAP10-8	Gm2696	1.36	0.000	SAMSN1	Samsn1	1.73	0.000	Stx11	STX11
1.02	0.003	EPHB2	Ephb2	-2.57	0.040	KRTAP10-2	Gm2696	1.36	0.000	DUSP6	Dusp6	1.73	0.000	Cyp2a5	CYP2A7
1.02	0.006	FBLN2	Fbln2	-2.57	0.040	KRTAP10-1	Gm2696	1.36	0.000	UBE2L6	Ube2l6	1.73	0.000	Cyp2a5	CYP2A13
1.02	0.049	ITGA1	Itga1	-2.57	0.040	KRTAP10-3	Gm2696	1.35	0.002	RGS16	Rgs16	1.73	0.000	Cyp2a5	CYP2A6
1.02	0.004	P2RY6	P2ry6	-2.57	0.040	KRTAP10-1	Gm2696	1.35	0.000	DDAH1	Ddah1	1.72	0.000	5830411N0	NA
1.02	0.025	GREM2	Grem2	-2.57	0.040	KRTAP10-9	Gm2696	1.35	0.000	HMCN1	Hmcn1	1.72	0.000	Il7r	IL7R
1.02	0.003	CKAP2	Ckap2	-2.57	0.040	KRTAP10-1	Gm2696	1.35	0.002	NA	Krtap1-3	1.72	0.000	Vcam1	VCAM1
1.02	0.017	P3H1	P3h1	-2.57	0.040	KRTAP10-6	Gm2696	1.35	0.000	CCL1	Ccl1	1.72	0.008	Oas3	OAS3
1.02	0.007	MTHFD2	Mthfd2	-2.57	0.040	KRTAP10-7	Gm2696	1.34	0.000	TRIM15	Trim15	1.72	0.000	Il4i1	IL4I1
1.01	0.001	CKAP4	Ckap4	-2.57	0.040	KRTAP10-4	Gm2696	1.34	0.000	NLRC5	Nlrc5	1.72	0.000	Camk2d	CAMK2D
1.01	0.012	ELK3	Elk3	-2.57	0.040	KRTAP10-5	Gm2696	1.34	0.000	EGLN3	Egln3	1.72	0.004	Pyhin1	NA
1.01	0.007	SLC10A6	Slc10a6	-2.57	0.040	KRTAP10-1	Gm2696	1.34	0.000	FCGR2A	Fcgr2b	1.72	0.000	Cpxm1	CPXM1
1.01	0.018	PPP1R3B	Ppp1r3b	-2.62	0.019	NA	D730001G1	1.34	0.000	FCGR2C	Fcgr2b	1.71	0.000	Endou	ENDOU
1.01	0.005	TACR1	Tacr1	-2.68	0.016	KRTAP10-3	Gm3238	1.34	0.000	FCGR2B	Fcgr2b	1.71	0.000	Lpxn	LPXN
1.01	0.014	ADM	Adm	-2.68	0.016	KRTAP10-1	Gm3238	1.34	0.000	FCGR2A	Fcgr2b	1.71	0.000	Rgs4	RGS4
1.01	0.027	NA	Mir380	-2.68	0.016	KRTAP10-8	Gm3238	1.34	0.002	LPO	Lpo	1.71	0.000	Bcl3	BCL3
1.01	0.007	MFAP4	Mfap4	-2.68	0.016	KRTAP10-7	Gm3238	1.34	0.000	MS4A4E	Ms4a4a	1.71	0.000	Nr1h3	NR1H3
1.01	0.001	CDCA8	Cdca8	-2.68	0.016	KRTAP10-2	Gm3238	1.34	0.000	MS4A4A	Ms4a4a	1.71	0.000	Cytip	CYTIP
1.01	0.001	KIF2C	Kif2c	-2.68	0.016	KRTAP10-9	Gm3238	1.34	0.022	NA	Krtap31-1	1.71	0.000	Cp	CP
1.01	0.046	LGI2	Lgi2	-2.68	0.016	KRTAP10-1	Gm3238	1.33	0.001	HMCN1	Hmcn1	1.71	0.000	Gngt2	GNGT2
1.01	0.004	CASC5	Casc5	-2.68	0.016	KRTAP10-6	Gm3238	1.33	0.000	NA	Akr1b8	1.71	0.000	Gm12606	NA
1.00	0.001	FABP5	Fabp5	-2.68	0.016	KRTAP10-4	Gm3238	1.33	0.000	CSF3R	Csf3r	1.71	0.038	Fxyd4	FXYD4
1.00	0.001	FABP5	Fabp5	-2.68	0.016	KRTAP10-1	Gm3238	1.33	0.000	ARG1	Arg1	1.70	0.000	Rhof	RHOF
1.00	0.007	APBB1IP	Apbb1ip	-2.68	0.016	KRTAP10-1	Gm3238	1.32	0.001	INHBA	Inhba	1.70	0.000	Stap1	STAP1

ACCEPTED MANUSCRIPT

1.00	0.012	C1QTNF6	C1qtnf6	-2.68	0.016	KRTAP10-5	Gm3238	1.32	0.000	IL13	Il13	1.70	0.000	Klrb1a	KLRB1
-1.00	0.005	HFE2	Hfe2	-2.69	0.016	KRTAP10-5	Krtap10-10	1.32	0.010	KRTAP12-1	Gm10142	1.70	0.000	Itk	ITK
-1.00	0.003	AMY2A	Amy1	-2.69	0.016	KRTAP10-6	Krtap10-10	1.32	0.010	KRTAP12-2	Gm10142	1.70	0.000	Lat2	LAT2
-1.00	0.003	AMY1C	Amy1	-2.69	0.016	KRTAP10-1	Krtap10-10	1.32	0.010	KRTAP12-3	Gm10142	1.70	0.000	Traf3ip3	TRAF3IP3
-1.00	0.003	AMY1B	Amy1	-2.69	0.016	KRTAP10-1	Krtap10-10	1.32	0.000	BAK1	Bak1	1.70	0.000	Cd300a	CD300C
-1.00	0.003	AMY2B	Amy1	-2.69	0.016	KRTAP10-1	Krtap10-10	1.32	0.000	PNP	Pnp2	1.70	0.000	Cd300a	CD300A
-1.00	0.003	AMY1A	Amy1	-2.69	0.016	KRTAP10-4	Krtap10-10	1.31	0.001	SLPI	Slpi	1.70	0.000	AW112010	NA
-1.00	0.003	ABCA5	Abca5	-2.69	0.016	KRTAP10-7	Krtap10-10	1.31	0.000	NA	Il3	1.70	0.000	Il4ra	IL4R
-1.00	0.005	PCP4L1	Pcp4l1	-2.69	0.016	KRTAP10-3	Krtap10-10	1.31	0.000	CA12	Car12	1.69	0.000	Ctsg	CTSG
-1.01	0.005	TNNI2	Tnni2	-2.69	0.016	KRTAP10-9	Krtap10-10	1.31	0.000	OAS3	Oas3	1.69	0.000	Ddah1	DDAH1
-1.01	0.002	TRIM63	Trim63	-2.69	0.016	KRTAP10-2	Krtap10-10	1.31	0.001	BCL2L15	Bcl2l15	1.69	0.000	Cd6	CD6
-1.01	0.004	LRRC31	Lrrc31	-2.69	0.016	KRTAP10-1	Krtap10-10	1.31	0.005	EPGN	Epgn	1.68	0.000	Gpr85	GPR85
-1.02	0.006	HRC	Hrc	-2.69	0.016	KRTAP10-8	Krtap10-10	1.30	0.010	CCL11	Ccl11	1.68	0.000	Batf2	BATF2
-1.02	0.004	MYBPC1	Mybpc1	-2.77	0.000	ZBTB16	Zbtb16	1.29	0.000	ADA	Ada	1.68	0.001	Cd300ld	CD300LD
-1.02	0.006	ASB14	Asb14	-2.78	0.032	NA	Krtap17-1	1.29	0.021	NA	Mcpt2	1.68	0.001	Cd300ld	CD300LF
-1.03	0.003	C17orf67	Gm525	-2.80	0.032	S100A3	S100a3	1.29	0.001	CPA3	Cpa3	1.68	0.001	Ms4a6d	MS4A6A
-1.03	0.011	ANO5	Ano5	-2.90	0.021	KRTAP3-2	Krtap3-2	1.29	0.006	CA4	Car4	1.68	0.001	Ms4a6d	MS4A6E
-1.03	0.009	CBSL	Cbs	-2.90	0.021	KRTAP3-3	Krtap3-2	1.29	0.001	HMCN1	Hmcn1	1.67	0.000	Nfam1	NFAM1
-1.03	0.009	CBS	Cbs	-3.01	0.026	KRT34	Krt31	1.29	0.000	ZC3H12C	Zc3h12c	1.67	0.000	Klrb1f	KLRB1
-1.03	0.008	NOTUM	Notum	-3.01	0.026	KRT33B	Krt31	1.29	0.000	GSDMC	Gsdmc2	1.67	0.000	AI504432	NA
-1.03	0.003	GLB1L2	Glb1l2	-3.01	0.026	KRT33A	Krt31	1.29	0.000	IL1A	Il1a	1.67	0.001	4930403D0	NA
-1.03	0.015	NA	Mrln	-3.01	0.026	KRT31	Krt31	1.29	0.003	GABRP	Gabrp	1.66	0.000	Smim3	SMIM3
-1.04	0.024	SCARA5	Scara5	-3.04	0.028	NA	Krtap19-3	1.28	0.000	PSMB10	Psmb10	1.66	0.000	Socs3	SOCS3
-1.05	0.015	PIK3C2G	Pik3c2g	-3.10	0.023	KRTAP2-4	Gm11937	1.28	0.010	ICAM1	Icam1	1.66	0.000	Ctsw	CTSW
-1.05	0.025	CCER2	Gm6537	-3.10	0.023	KRTAP2-3	Gm11937	1.28	0.000	NA	Adamts9	1.66	0.001	Cd38	CD38
-1.05	0.002	TMOD1	Tmod1	-3.10	0.023	KRTAP2-2	Gm11937	1.28	0.000	C1S	C1s2	1.66	0.000	Cd8a	CD8A
-1.05	0.012	NA	Calm5	-3.10	0.023	KRTAP2-1	Gm11937	1.28	0.048	CCL8	Ccl12	1.66	0.000	Stom	STOM
-1.05	0.011	KRT23	Krt23	-3.11	0.027	KRTAP10-8	Gm7137	1.27	0.000	PSORS1C2	Psors1c2	1.65	0.000	Cd5	CD5
-1.06	0.018	PPARGC1A	Ppargc1a	-3.11	0.027	KRTAP10-2	Gm7137	1.27	0.000	HPSE	Hpse	1.65	0.005	Bst1	BST1
-1.06	0.002	NPR3	Npr3	-3.11	0.027	KRTAP10-1	Gm7137	1.27	0.000	NA	H2-T22	1.65	0.004	Fcgr1	FCGR1A
-1.06	0.008	HLF	Hlf	-3.11	0.027	KRTAP10-3	Gm7137	1.26	0.001	NA	Mcpt4	1.65	0.004	Fcgr1	FCGR1B
-1.06	0.002	C4orf47	1700029J07	-3.11	0.027	KRTAP10-1	Gm7137	1.26	0.000	IFI44L	Ifi44l	1.65	0.000	Slamf6	SLAMF6
-1.07	0.004	FITM1	Fitm1	-3.11	0.027	KRTAP10-9	Gm7137	1.26	0.000	S1PR3	S1pr3	1.65	0.002	Ptgis	PTGIS
-1.07	0.018	SH3D21	Sh3d21	-3.11	0.027	KRTAP10-1	Gm7137	1.26	0.000	RGS1	Rgs1	1.65	0.007	Mug1	PZP
-1.07	0.003	TRIM54	Trim54	-3.11	0.027	KRTAP10-6	Gm7137	1.25	0.000	NEK6	Nek6	1.65	0.000	Igtp	IRGM
-1.07	0.006	WNK2	Wnk2	-3.11	0.027	KRTAP10-7	Gm7137	1.25	0.000	CDHR1	Cdhr1	1.64	0.007	Rsad2	RSAD2
-1.08	0.004	MURC	Murc	-3.11	0.027	KRTAP10-4	Gm7137	1.24	0.005	TNFAIP3	Tnfaip3	1.64	0.000	Il33	IL33
-1.08	0.022	NA	Skint8	-3.11	0.027	KRTAP10-5	Gm7137	1.24	0.001	TNF	Tnf	1.64	0.000	Cdk5r1	CDK5R1
-1.09	0.028	TIMP4	Timp4	-3.11	0.027	KRTAP10-1	Gm7137	1.24	0.000	PLA2G7	Pla2g7	1.64	0.000	Il12rb1	IL12RB1
-1.09	0.008	MC5R	Mc5r	-3.11	0.023	NA	Gm10013	1.24	0.001	KRT34	Krt33b	1.64	0.000	Prf1	PRF1
-1.09	0.002	LMOD3	Lmod3	-3.15	0.031	KRTAP10-5	Krtap10-4	1.24	0.001	KRT33B	Krt33b	1.64	0.000	Isg20	ISG20
-1.09	0.002	ITGA10	Itga10	-3.15	0.031	KRTAP10-6	Krtap10-4	1.24	0.001	KRT31	Krt33b	1.63	0.001	Tifab	TIFAB
-1.09	0.003	TMEM182	Tmem182	-3.15	0.031	KRTAP10-1	Krtap10-4	1.24	0.001	KRT33A	Krt33b	1.63	0.000	Smox	SMOX
-1.10	0.003	CKM	Ckm	-3.15	0.031	KRTAP10-1	Krtap10-4	1.24	0.000		Gm15753	1.63	0.001	Cd180	CD180
-1.10	0.023	CCL27	Gm13306	-3.15	0.031	KRTAP10-1	Krtap10-4	1.24	0.000	SP110	Gm15753	1.63	0.000	Cd40	CD40
-1.10	0.040	C10orf10	8430408G2	-3.15	0.031	KRTAP10-4	Krtap10-4	1.24	0.000	CDK6	Cdk6	1.63	0.000	Ptges	PTGES
-1.11	0.001	CTTNBP2	Cttnbp2	-3.15	0.031	KRTAP10-7	Krtap10-4	1.23	0.000	PTPRC	Ptprc	1.63	0.001	Ube2l6	UBE2L6
-1.11	0.011	TRDN	Trdn	-3.15	0.031	KRTAP10-3	Krtap10-4	1.23	0.002	HMCN1	Hmcn1	1.62	0.000	Ptprz1	PTPRZ1
-1.11	0.031	NA	Mir30a	-3.15	0.031	KRTAP10-9	Krtap10-4	1.23	0.000	NA	H2-D1	1.62	0.003	Clec4a2	CLEC4A
-1.11	0.009	KLRD1	Klrd1	-3.15	0.031	KRTAP10-2	Krtap10-4	1.22	0.000	OSBPL8	Osbpl8	1.62	0.001	Cxcl13	CXCL13
-1.11	0.002	BTC	Btc	-3.15	0.031	KRTAP10-1	Krtap10-4	1.22	0.001	HMCN1	Hmcn1	1.62	0.000	Cd2	CD2
-1.12	0.034	FAM57B	Fam57b	-3.15	0.031	KRTAP10-8	Krtap10-4	1.22	0.003	HMCN1	Hmcn1	1.62	0.000	Ms4a7	MS4A7
-1.12	0.017	ANGPTL7	Angptl7	-3.17	0.000	B4GALNT2	B4galnt2	1.22	0.000	SIRPA	Sirpb1a	1.62	0.000	Fgd3	FGD3
-1.12	0.002	COL4A6	Col4a6	-3.20	0.047	NA	LOC102637	1.22	0.000	SIRPB1	Sirpb1a	1.62	0.000	Folr1	FOLR1
-1.13	0.004	ART1	Art1	-3.20	0.019	KRT31	Krt34	1.22	0.000	SIRPG	Sirpb1a	1.62	0.000	Spi1	SPI1
-1.13	0.001	CDO1	Cdo1	-3.20	0.019	KRT34	Krt34	1.22	0.000	CSRNP1	Csrnp1	1.62	0.000	Ptpn22	PTPN22
-1.14	0.004	SERPINB7	Serpinb7	-3.20	0.019	KRT33A	Krt34	1.21	0.001	ZC3H12C	Zc3h12c	1.62	0.000	Vcam1	VCAM1
-1.14	0.006	RAB11FIP4	Rab11fip4	-3.20	0.019	KRT33B	Krt34	1.21	0.000	SP140	C130026I21	1.62	0.000	Chl1	CHL1
-1.14	0.043	IBSP	Ibsp	-3.29	0.021	NA	Krtap5-1	1.21	0.002	NA	AI607873	1.61	0.000	Plscr1	NA
-1.15	0.013	MYOC	Myoc	-3.32	0.025	KRTAP26-1	Krtap26-1	1.21	0.003	NA	Spink12	1.61	0.000	Mthfs	ST20-MTHF
-1.15	0.012	TGM7	Tgm7	-3.39	0.035	KRT83	Krt83	1.21	0.000	OGFR	Ogfr	1.61	0.000	Mthfs	MTHFS
-1.15	0.013	NA	F830045P1	-3.39	0.035	KRT86	Krt83	1.21	0.001	NA	Krtap5-1	1.61	0.001	Apobr	APOBR
-1.16	0.011	KLHL31	Klhl31	-3.39	0.035	KRT81	Krt83	1.21	0.000	SCRG1	Scrg1	1.61	0.003	Epsti1	EPSTI1
-1.16	0.002	C10orf90	D7Ertd443e	-3.40	0.029	KRT86	Krt86	1.20	0.000	IL36G	Il1f9	1.61	0.000	Ccr6	CCR6
-1.17	0.013	PGAM2	Pgam2	-3.40	0.029	KRT81	Krt86	1.20	0.000	CDH11	Cdh11	1.61	0.000	Draxin	DRAXIN
-1.17	0.001	RPL3L	Rpl3l	-3.40	0.029	KRT83	Krt86	1.20	0.005	NA	LOC102637	1.61	0.000	Krt6a	KRT6B
-1.17	0.005	MYPN	Mypn	-3.41	0.044	KRTAP9-1	Krtap9-1	1.20	0.000	GALNT3	Galnt3	1.61	0.000	Krt6a	KRT6C
-1.18	0.007	FCER2	Fcer2a	-3.51	0.046	NA	Gm4559	1.20	0.000	CTSK	Ctsk	1.61	0.000	Krt6a	KRT6A

ACCEPTED MANUSCRIPT

-1.18	0.007	COX7A1	Cox7a1
-1.18	0.003	MYOM2	Myom2
-1.19	0.018	KRT77	Krt77
-1.19	0.011	ASB12	Asb12
-1.19	0.028	NA	Mir365-1
-1.20	0.009		Zfp872
-1.20	0.009	ZNF709	Zfp872
-1.20	0.004	MYLPF	Mylpf
-1.21	0.003	PHKG1	Phkg1
-1.21	0.003	MYOT	Myot
-1.21	0.004	ATP1A2	Atp1a2
-1.21	0.004	TNNC2	Tnnc2
-1.22	0.039	COX6A2	Cox6a2
-1.22	0.004	CES1	Ces1d
-1.22	0.014	PROB1	Prob1
-1.23	0.014	CHAD	Chad
-1.23	0.006	NA	Lce1m
-1.24	0.009	AMPD1	Ampd1
-1.24	0.005	PYGM	Pygm
-1.25	0.014	MYBPC2	Mybpc2
-1.25	0.000	TMEM45A	Tmem45a2
-1.26	0.005	MYOM1	Myom1
-1.26	0.003	ENO3	Eno3
-1.27	0.005	A4GNT	A4gnt
-1.27	0.016	TPBGL	Gm4980
-1.27	0.003	TNNT3	Tnnt3
-1.28	0.009	ATP2A1	Atp2a1
-1.28	0.010	CORO6	Coro6
-1.28	0.004	KLHL38	Klhl38
-1.30	0.004	SERPINB6	Serpinb6d
-1.30	0.003	LMOD2	Lmod2
-1.30	0.002	KIF21A	Kif21a
-1.31	0.008	PAPLN	Papln
-1.31	0.002	MYOZ1	Myoz1
-1.32	0.009	ASB15	Asb15
-1.33	0.001	FGF18	Fgf18
-1.33	0.004	MSTN	Mstn
-1.33	0.008	NA	Skint10
-1.34	0.007	CASQ1	Casq1
-1.35	0.013	PLS1	Pls1
-1.35	0.004	TXLNB	Txlnb
-1.38	0.010	PVALB	Pvalb
-1.38	0.002	RORC	Rorc
-1.39	0.004	CKMT2	Ckmt2
-1.40	0.005	ACTN3	Actn3
-1.40	0.004	NA	Sln
-1.40	0.007	BPIFA2	Bpifa2
-1.41	0.002	FMO2	Fmo2
-1.42	0.001	PLSCR4	Plscr4
-1.42	0.008	KRT15	Krt15
-1.45	0.001	LEP	Lep
-1.47	0.004	GALNT15	Galnt15
-1.47	0.001	KLHL33	Klhl33
-1.49	0.002	PPP1R3A	Ppp1r3a
-1.51	0.001	TNNT2	Tnnt2
-1.56	0.006	MYH4	Myh4
-1.58	0.003	CGN	Cgn
-1.62	0.026	CYP2E1	Cyp2e1
-1.64	0.014	SCGB1A1	Scgb1a1
-1.64	0.002	PAQR7	Paqr7
-1.69	0.001	TCAP	Tcap
-1.80	0.001	MYLK2	Mylk2
-1.83	0.001	NA	Nnat
-1.93	0.001	MYLK4	Mylk4
-1.99	0.022	SERPINA3	Serpina3b
-1.99	0.022		Serpina3b
-2.37	0.001	MRGPRX3	Mrgprb3
-2.37	0.001	MRGPRX4	Mrgprb3

-3.51	0.010	NA	Krtap31-1
-3.54	0.041	KRTAP2-4	Gm11938
-3.54	0.041	KRTAP2-3	Gm11938
-3.54	0.041	KRTAP2-2	Gm11938
-3.54	0.041	KRTAP2-1	Gm11938
-3.56	0.028	KRTAP10-5	Gm19402
-3.56	0.028	KRTAP10-1	Gm19402
-3.56	0.028	KRTAP10-1	Gm19402
-3.56	0.028	KRTAP10-4	Gm19402
-3.56	0.028	KRTAP10-3	Gm19402
-3.56	0.028	KRTAP10-2	Gm19402
-3.56	0.028	KRTAP10-1	Gm19402
-3.56	0.028	KRTAP10-9	Gm19402
-3.56	0.028	KRTAP10-1	Gm19402
-3.56	0.028	KRTAP10-8	Gm19402
-3.56	0.028	KRTAP10-7	Gm19402
-3.56	0.028	KRTAP10-6	Gm19402
-3.58	0.029	KRT81	Krt81
-3.58	0.029	KRT86	Krt81
-3.58	0.029	KRT83	Krt81
-3.60	0.050	NA	Krtap5-5
-3.66	0.012	KRT81	5430421N2
-3.66	0.012	KRT86	5430421N2
-3.66	0.012	KRT83	5430421N2
-3.95	0.045	GPRC5D	Gprc5d
-4.05	0.025	KRT33B	Krt33b
-4.05	0.025	KRT33A	Krt33b
-4.05	0.025	KRT31	Krt33b
-4.05	0.025	KRT34	Krt33b
-4.12	0.034	NA	Krtap19-4
-4.37	0.019	NA	Gm11565
-4.49	0.022	NA	Crisp1
-4.53	0.001	NA	Ifitm6
-4.88	0.002	NA	Krtap31-2
-5.17	0.003	NA	Krtap9-5

1.20	0.001	HMCN1	Hmcn1
1.20	0.003	NA	Gm5431
1.20	0.000	HMCN1	Hmcn1
1.19	0.001	KRT75	Krt75
1.19	0.000	HMCN1	Hmcn1
1.19	0.004	NDUFA4L2	Ndufa4l2
1.19	0.010	IL1RL1	Il1rl1
1.19	0.001	PRSS35	Prss35
1.19	0.000	TMSB10	Tmsb10
1.18	0.001	CTLA4	Ctla4
1.18	0.000	RNF114	Rnf114
1.18	0.000	ATP13A4	Atp13a4
1.18	0.000	COL6A3	Col6a3
1.17	0.000	TUBB3	Tubb3
1.17	0.000	ST3GAL4	St3gal4
1.17	0.000	RRM2	Rrm2
1.17	0.000	THBD	Thbd
1.17	0.001	MFAP4	Mfap4
1.17	0.005	IFIT3	Ifit3b
1.16	0.000	HLA-E	H2-Q5
1.16	0.000	HLA-G	H2-Q5
1.16	0.000	HLA-F	H2-Q5
1.16	0.000	HLA-C	H2-Q5
1.16	0.000	HLA-B	H2-Q5
1.16	0.000	HLA-A	H2-Q5
1.16	0.000	TGFA	Tgfa
1.16	0.000	RAB31	Rab31
1.16	0.000	ENTPD1	Entpd1
1.16	0.000		Entpd1
1.16	0.007	FETUB	Fetub
1.16	0.000	CCL5	Ccl5
1.16	0.012	NA	Cxcl3
1.15	0.001	GRPR	Grpr
1.15	0.000	KLK3	Klk1
1.15	0.000	KLK2	Klk1
1.15	0.000	HMCN1	Hmcn1
1.15	0.000	DSC2	Dsc2
1.15	0.000	DAXX	Daxx
1.15	0.000	IL18RAP	Il18rap
1.14	0.001	KRT32	Krt32
1.14	0.005	NA	Krtap4-6
1.14	0.000	FCGR2A	Fcgr3
1.14	0.000	FCGR2A	Fcgr3
1.14	0.000	FCGR2C	Fcgr3
1.14	0.000	FCGR2B	Fcgr3
1.14	0.005	IFIT2	Ifit2
1.14	0.000	SLC37A2	Slc37a2
1.14	0.000	HMCN1	Hmcn1
1.14	0.033	HMCN1	Hmcn1
1.14	0.003	RND1	Rnd1
1.14	0.000	ENO1	Eno1b
1.13	0.004	HMCN1	Hmcn1
1.12	0.000	IGSF10	Igsf10
1.12	0.000	HK2	Hk2
1.12	0.000	TRIM5	Trim12c
1.12	0.001	HMCN1	Hmcn1
1.12	0.000	TRIM25	Trim25
1.12	0.002	LRG1	Lrg1
1.12	0.000	MRC1	Mrc1
1.11	0.000	C4orf3	1810037I17
1.11	0.000	NA	Sprr1a
1.11	0.047	PTGS2	Ptgs2
1.11	0.001	LAMC2	Lamc2
1.11	0.001	TNFRSF1B	Tnfrsf1b
1.10	0.001	CRYM	Crym
1.10	0.000	TAP2	Tap2
1.10	0.000		Tap2
1.10	0.000	FAM162A	Fam162a

1.61	0.000	Tlr6	TLR6
1.61	0.001	Itgb2	ITGB2
1.61	0.000	Klk1	KLK2
1.61	0.000	Klk1	KLK3
1.61	0.000	Myo1f	MYO1F
1.61	0.000	Irf8	IRF8
1.61	0.001	Gstm6	NA
1.60	0.000	Acap1	ACAP1
1.60	0.000	Ms4a7	MS4A7
1.60	0.000	Rabgap1l	RABGAP1L
1.60	0.000	Apol8	APOL2
1.60	0.000	Apol8	APOL4
1.60	0.000	Apol8	APOL3
1.60	0.000	Apol8	APOL1
1.60	0.000	Tmem51	TMEM51
1.60	0.000	Napsa	NAPSA
1.60	0.000	Ceacam12	NA
1.60	0.001	Tlr7	TLR7
1.60	0.000	Trpv2	TRPV2
1.60	0.000	Nsg2	
1.60	0.000	Stat1	STAT1
1.59	0.000	Pdcd1	PDCD1
1.59	0.001	Pik3cd	PIK3CD
1.59	0.000	Il2rg	IL2RG
1.59	0.000	Gsdma	GSDMA
1.59	0.000	Acp2	ACP2
1.59	0.000	Pde4b	PDE4B
1.59	0.000	Cd160	CD160
1.59	0.000	Selp	SELP
1.58	0.000	Cd72	CD72
1.58	0.000	Cxcl16	CXCL16
1.58	0.000	Ddah1	DDAH1
1.58	0.000	Vcam1	VCAM1
1.58	0.000	Rab20	RAB20
1.58	0.000	Cotl1	COTL1
1.58	0.000	Ptk6	PTK6
1.58	0.001	Ms4a6c	MS4A6E
1.58	0.001	Ms4a6c	MS4A6A
1.58	0.000	Vnn3	VNN3
1.58	0.001	Dock2	DOCK2
1.58	0.000	Btnl2	BTNL2
1.58	0.000	2010107G1	NA
1.58	0.001	Prm1	NA
1.58	0.000	Aqp3	AQP3
1.57	0.000	Tnfrsf1b	TNFRSF1B
1.57	0.002	Atp12a	ATP12A
1.57	0.000	Nckap1l	NCKAP1L
1.57	0.000	Sash3	SASH3
1.57	0.001	Sla	SLA
1.57	0.000	Tlr7	TLR7
1.57	0.000	Runx3	RUNX3
1.57	0.001	Gbp6	GBP6
1.56	0.000	Uba7	UBA7
1.56	0.000	Cntn2	CNTN2
1.56	0.000	Cd163l1	NA
1.56	0.001	Lyn	LYN
1.56	0.000	Stom	STOM
1.56	0.000	Mlkl	MLKL
1.56	0.000	Nfkbie	NFKBIE
1.56	0.000	Spdef	SPDEF
1.56	0.000	Ncf1	NCF1
1.55	0.000	Ptprz1	PTPRZ1
1.55	0.001	Fam3b	FAM3B
1.55	0.000	Slc7a7	SLC7A7
1.55	0.000	Cd200r4	CD200R1L
1.55	0.000	Cd200r4	CD200R1
1.55	0.000	Nppb	NA
1.55	0.000	Mgst2	MGST2

ACCEPTED MANUSCRIPT

-2.37	0.001	MRGPRX2	Mrgprb3
-2.37	0.001	MRGPRX1	Mrgprb3
-2.44	0.004	INMT-FAM1	Inmt
-2.44	0.004	INMT	Inmt
-2.49	0.000	MSMP	Msmp
-2.67	0.005	NA	9130204L05Rik

1.10	0.000	TAPBP	Tapbp
1.10	0.015	IL33	Il33
1.10	0.005	NA	Dynap
1.10	0.004	NA	Ceacam12
1.09	0.000	FST	Fst
1.09	0.000	FGL2	Fgl2
1.09	0.001	DHX58	Dhx58
1.09	0.002	TREX1	Trex1
1.09	0.001	LCP1	Lcp1
1.08	0.002	TARM1	Tarm1
1.08	0.000	NKG7	Nkg7
1.08	0.000	ADAM8	Adam8
1.08	0.006	HMCN1	Hmcn1
1.08	0.000	CMA1	Cma1
1.08	0.001	SLC1A1	Slc1a1
1.08	0.001	B4GALT5	B4galt5
1.07	0.000	TLR3	Tlr3
1.07	0.004	COL6A5	Col6a5
1.07	0.000	TGM3	Tgm3
1.07	0.000		Ecscr
1.07	0.000	ECSCR	Ecscr
1.07	0.000	MFAP2	Mfap2
1.06	0.040	NA	1110057P08
1.06	0.000	SLAMF1	Slamf1
1.06	0.000	KLK8	Klk8
1.06	0.000	PMEPA1	Pmepa1
1.06	0.005	RNF213	Rnf213
1.06	0.000	CX3CL1	Cx3cl1
1.06	0.005	HMCN1	Hmcn1
1.06	0.000		Sp110
1.06	0.000	SP110	Sp110
1.05	0.000	C1R	C1rb
1.05	0.001	GBP6	Gbp11
1.05	0.001	SELL	Sell
1.05	0.000	RNPEP	Rnpep
1.05	0.000	KRT1	Krt1
1.04	0.000	RUNX1	Runx1
1.04	0.000	RUNX1	Runx1
1.04	0.002	LCP2	Lcp2
1.04	0.003	CLEC4A	Clec4a3
1.04	0.000	SP140	A530032D11
1.04	0.003	SERPINA9	Serpina9
1.04	0.000	ADAMTS1	Adamts1
1.04	0.000	HCAR3	Hcar2
1.04	0.000	HCAR2	Hcar2
1.04	0.001	SCNN1B	Scnn1b
1.04	0.000	CTSS	Ctss
1.03	0.001	CLEC6A	Clec4n
1.03	0.000	TMEM50B	Tmem50b
1.03	0.001	BCL2A1	Bcl2a1b
1.03	0.018	NLRP3	Nlrp3
1.03	0.006	CXCL1	Cxcl1
1.03	0.006	CXCL3	Cxcl1
1.03	0.006	CXCL2	Cxcl1
1.03	0.000	NA	Mir146b
1.03	0.013	NA	Gm11565
1.03	0.000	SLAMF7	Slamf7
1.02	0.000	FSCN1	Fscn1
1.02	0.000	TMSB10	Tmsb10
1.02	0.000	ARID5A	Arid5a
1.02	0.003	HMCN1	Hmcn1
1.02	0.000	HMCN1	Hmcn1
1.02	0.000	AMMECR1	Ammecr1
1.02	0.000	GLRX	Glrx
1.02	0.002	LOX	Lox
1.01	0.002	SLC6A14	Slc6a14
1.01	0.000	NA	Ly6a
1.01	0.000	TREX2	Trex2

1.55	0.000	Hsh2d	HSH2D
1.55	0.000	Rdh16	RDH16
1.55	0.000	Ms4a4b	NA
1.55	0.000	Galnt6	GALNT6
1.54	0.001	Iigp1	NA
1.54	0.009	Prss35	PRSS35
1.54	0.003	Cybb	CYBB
1.54	0.002	1-Mar	1-Mar
1.54	0.000	Aldh1l2	ALDH1L2
1.54	0.000	Casp4	CASP5
1.54	0.000	Blk	BLK
1.54	0.000	Plscr1	NA
1.54	0.000	Ppm1h	PPM1H
1.54	0.001	Prm1	NA
1.53	0.000	Il13ra1	IL13RA1
1.53	0.005	Tfec	TFEC
1.53	0.001	Il1f9	IL36G
1.53	0.000	Cuzd1	CUZD1
1.53	0.000	Ccl19	CCL19
1.53	0.000	Ikbke	IKBKE
1.53	0.000	Slc25a53	SLC25A53
1.53	0.000	Serpinb9	SERPINB9
1.52	0.001	Slc28a3	SLC28A3
1.52	0.000	Selplg	SELPLG
1.52	0.000	Slc1a1	SLC1A1
1.52	0.000	Mir142hg	NA
1.52	0.001	Gbp6	GBP6
1.52	0.000	9530059O14	NA
1.52	0.000	Cytip	CYTIP
1.51	0.000	Fmnl1	FMNL1
1.51	0.000	Socs3	SOCS3
1.51	0.000	Gpr15	GPR15
1.51	0.000	Susd3	SUSD3
1.51	0.000	Gm12185	NA
1.51	0.004	Ifit1	IFIT1B
1.51	0.000	Irf8	IRF8
1.51	0.000	Cd40	CD40
1.50	0.000	Cyp3a13	CYP3A5
1.50	0.000	Cyp3a13	CYP3A7-CY
1.50	0.000	Cyp3a13	CYP3A4
1.50	0.000	Cyp3a13	CYP3A7
1.50	0.000	Cyp3a13	CYP3A43
1.50	0.000	Mid1	MID1
1.50	0.000	Mpeg1	MPEG1
1.50	0.017	Mx1	NA
1.50	0.000	Il7r	IL7R
1.50	0.003	Dhx58	DHX58
1.50	0.000	Dok3	DOK3
1.50	0.000	Cyba	CYBA
1.49	0.000	Insl6	INSL6
1.49	0.001	Myo1g	MYO1G
1.49	0.000	Mirt1	NA
1.49	0.000	Them5	THEM5
1.49	0.000	Galns	GALNS
1.49	0.000	Gpd2	GPD2
1.49	0.000	Gbp3	GBP4
1.49	0.000	Gbp3	GBP7
1.49	0.002	Ncf1	NCF1
1.48	0.000	Treml2	TREML2
1.48	0.000	Stk17b	STK17B
1.48	0.000	Pram1	PRAM1
1.48	0.003	Ms4a1	MS4A1
1.48	0.000	Nfkbie	NFKBIE
1.48	0.003	Evi2a	EVI2A
1.48	0.003	Evi2a	
1.47	0.000	Raet1a	NA
1.47	0.005	A530040E14	SP140
1.47	0.000	Cotl1	COTL1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

1.01	0.002	NA	Gm4070	1.47	0.000	Gpr85	GPR85
1.01	0.000	SLA	Sla	1.47	0.001	Atp8b4	ATP8B4
1.01	0.000	ACTBL2	Actbl2	1.47	0.001	Ifi202b	NA
-1.00	0.002	CHAD	Chad	1.47	0.001	Gal	GAL
-1.00	0.000	CYP3A43	Cyp3a59	1.47	0.000	P2ry10	P2RY10
-1.00	0.000	CYP3A7-CY	Cyp3a59	1.47	0.001	Cxcl13	CXCL13
-1.00	0.000	CYP3A4	Cyp3a59	1.47	0.000	Il1f5	IL36RN
-1.00	0.000	CYP3A7	Cyp3a59	1.47	0.000	Lce1g	NA
-1.00	0.000	CYP3A5	Cyp3a59	1.46	0.000	Skil	SKIL
-1.00	0.000	RNF146	Rnf146	1.46	0.002	AI662270	NA
-1.00	0.000	SH2D4A	Sh2d4a	1.46	0.000	Atxn7l1	ATXN7L1
-1.00	0.000	RBP4	Rbp4	1.46	0.005	Epsti1	EPSTI1
-1.01	0.002	TXLNB	Txlnb	1.46	0.000	Camp	CAMP
-1.01	0.000	CGN	Cgn	1.46	0.000	Csf2rb	CSF2RB
-1.01	0.006	NA	Mir205	1.46	0.000	Gch1	GCH1
-1.01	0.000	FOXQ1	Foxq1	1.46	0.000	Cotl1	COTL1
-1.02	0.002	CSRP3	Csrp3	1.45	0.000	Pfkfb4	PFKFB4
-1.02	0.001	NA	Mrln	1.45	0.000	Gpsm3	GPSM3
-1.02	0.000	PDK2	Pdk2	1.45	0.000	Bcl2l11	BCL2L11
-1.02	0.000	NUDT17	Nudt17	1.45	0.005	C3ar1	C3AR1
-1.02	0.000	CMBL	Cmbl	1.45	0.000	Bcat1	BCAT1
-1.03	0.000	HRSP12	Hrsp12	1.45	0.001	Gng2	GNG2
-1.03	0.000	ELL3	Ell3	1.45	0.000	Cotl1	COTL1
-1.03	0.000	GSTM3	Gstm5	1.45	0.000	Arrb2	ARRB2
-1.03	0.000	LDHB	Ldhb	1.45	0.000	Aldh3b1	ALDH3B1
-1.03	0.000	HHATL	Hhatl	1.44	0.000	Adap1	ADAP1
-1.03	0.000	ANO9	Ano9	1.44	0.000	Igf2bp2	IGF2BP2
-1.04	0.001	RTN2	Rtn2	1.44	0.001	Irgm1	IRGM
-1.04	0.000	CCDC3	Ccdc3	1.44	0.000	Ripk3	RIPK3
-1.04	0.002	DKKL1	Dkkl1	1.44	0.000	Slc2a9	SLC2A9
-1.04	0.000	CAT	Cat	1.44	0.001	Cnfn	CNFN
-1.04	0.000	ADTRP	Adtrp	1.44	0.000	Uba7	UBA7
-1.04	0.000	SCIN	Scin	1.44	0.000	1810037I17	C4orf3
-1.05	0.000	DISP1	Disp1	1.44	0.000	Tifab	TIFAB
-1.05	0.021		Akr1c18	1.44	0.000	Hgf	HGF
-1.05	0.021	AKR1C2	Akr1c18	1.44	0.000	Hvcn1	HVCN1
-1.05	0.021	AKR1C1	Akr1c18	1.44	0.001	Adam8	ADAM8
-1.05	0.021	AKR1C3	Akr1c18	1.44	0.000	Gsap	GSAP
-1.05	0.021	AKR1C4	Akr1c18	1.44	0.004	Mmp9	MMP9
-1.05	0.000	KRT15	Krt15	1.43	0.000	Serpinb9	SERPINB9
-1.05	0.000	PANK1	Pank1	1.43	0.009	Ifit2	IFIT2
-1.05	0.000	CYP2J2	Cyp2j9	1.43	0.004	Herc6	HERC6
-1.05	0.000	NMRK2	Nmrk2	1.43	0.001	Samhd1	SAMHD1
-1.05	0.000	RARRES1	Rarres1	1.43	0.000	Arrdc4	ARRDC4
-1.06	0.000	SUOX	Suox	1.43	0.000	Gsdmd	GSDMD
-1.06	0.004	ATP2A1	Atp2a1	1.42	0.000	Sema4d	SEMA4D
-1.06	0.002	ASB12	Asb12	1.42	0.000	Treml4	TREML4
-1.06	0.000	ACKR4	Ackr4	1.42	0.000	Vill	VILL
-1.06	0.000	FBXO31	Fbxo31	1.42	0.000	Il1rn	IL1RN
-1.06	0.000		Fbxo31	1.42	0.000	Ccnb1	CCNB1
-1.06	0.001	TIGD4	Tigd4	1.42	0.000	Abcg1	ABCG1
-1.07	0.001	KLHL41	Klhl41	1.42	0.000	Cp	CP
-1.07	0.001	TRDN	Trdn	1.41	0.005	Itgam	ITGAM
-1.07	0.000	TMEM45A	Tmem45a2	1.41	0.001	Inpp5d	INPP5D
-1.07	0.000	TTC9	Ttc9	1.41	0.006	Gadl1	GADL1
-1.07	0.000	PRSS48	Prss48	1.41	0.001	Tmem8	TMEM8A
-1.08	0.000	ECHDC1	Echdc1	1.41	0.000	Gab2	GAB2
-1.08	0.000	TMEM164	Tmem164	1.41	0.000	Cd53	CD53
-1.08	0.004	NA	Gm5941	1.41	0.000	Gimap6	GIMAP6
-1.08	0.000	NRG4	Nrg4	1.41	0.000	Tnni3	TNNI3
-1.08	0.000	SIX1	Six1	1.41	0.000	Arhgap8	PRR5-ARH
-1.08	0.000	RORC	Rorc	1.41	0.000	Arhgap8	ARHGAP8
-1.08	0.000	PAK3	Pak3	1.40	0.001	Gimap6	GIMAP6
-1.08	0.002	SMPX	Smpx	1.40	0.000	Trim25	TRIM25
-1.08	0.000	CCND2	Ccnd2	1.40	0.005	Cd84	CD84
-1.09	0.007	CIART	Ciart	1.40	0.000	Csf2rb2	CSF2RB
-1.09	0.002	PIGP	Pigp	1.40	0.000	Fhad1	FHAD1
-1.09	0.000	TGM7	Tgm7	1.40	0.001	Fyb	FYB

ACCEPTED MANUSCRIPT

-1.09	0.000	FJX1	Fjx1	1.40	0.001	Cd244	CD244
-1.09	0.000	SERPINB6	Serpinb6d	1.40	0.000	Ptges	PTGES
-1.10	0.002	PPARGC1A	Ppargc1a	1.40	0.000	4930415O2	NA
-1.10	0.003	NA	Skint10	1.40	0.000	Tph1	TPH1
-1.10	0.001	HLF	Hlf	1.40	0.000	Rab19	RAB19
-1.10	0.000	DHRS7	Dhrs7	1.40	0.000	Uba7	UBA7
-1.11	0.001	LMOD3	Lmod3	1.40	0.000	Prss12	PRSS12
-1.11	0.023	ACTN3	Actn3	1.40	0.001	Dhx58	DHX58
-1.12	0.000	MURC	Murc	1.40	0.000	Arl5b	ARL5B
-1.12	0.002	NA	Cox8b	1.39	0.003	Tgtp1	NA
-1.12	0.004	TMEM182	Tmem182	1.39	0.000	Sytl3	SYTL3
-1.12	0.001	IL1R2	Il1r2	1.39	0.000	Pde4b	PDE4B
-1.12	0.004	APOBEC2	Apobec2	1.39	0.000	Nfe2	NFE2
-1.13	0.001	ENO3	Eno3	1.39	0.000	Trex1	TREX1
-1.13	0.001	TRDN	Trdn	1.39	0.001	Cytip	CYTIP
-1.14	0.000	CIDEA	Cidea	1.39	0.000	Endou	ENDOU
-1.14	0.000	OMD	Omd	1.38	0.000	Birc3	BIRC3
-1.14	0.000	ORM2	Orm1	1.38	0.000	Sla2	SLA2
-1.14	0.000	ORM1	Orm1	1.38	0.003	Gmfg	GMFG
-1.14	0.005	NA	Calm5	1.38	0.001	Slc5a8	SLC5A8
-1.15	0.004	NA	Gm15284	1.38	0.006	Slc14a1	SLC14A1
-1.16	0.000	PLA2G16	Pla2g16	1.38	0.000	Exoc3l4	EXOC3L4
-1.16	0.001	RPL13A	Snord32a	1.38	0.000	Cdk5r1	CDK5R1
-1.16	0.000	DECR1	Decr1	1.38	0.000	Sirpa	SIRPA
-1.16	0.002	PRLR	Prlr	1.38	0.000	Sirpa	SIRPB1
-1.16	0.029	TRDN	Trdn	1.38	0.000	Sirpa	SIRPG
-1.16	0.000	LGR6	Lgr6	1.38	0.000	Parp11	PARP11
-1.17	0.001	PEX11A	Pex11a	1.37	0.004	Ncf1	NCF1
-1.17	0.001	SCGB3A2	Scgb3a2	1.37	0.000	Gm16548	NA
-1.17	0.000	FAM57B	Fam57b	1.37	0.000	Ddah1	DDAH1
-1.18	0.000	PXMP4	Pxmp4	1.37	0.001	4632428N0	C10orf54
-1.18	0.000	CYSLTR1	Cysltr1	1.37	0.000	Rasgrp2	RASGRP2
-1.18	0.000	TRDN	Trdn	1.37	0.000	Smox	SMOX
-1.19	0.003	TRDN	Trdn	1.37	0.000	Acap1	ACAP1
-1.19	0.000	MYH3	Myh3	1.37	0.000	Il13ra1	IL13RA1
-1.19	0.000	FGF18	Fgf18	1.37	0.007	Ms4a6b	MS4A6A
-1.20	0.000	ZBTB16	Zbtb16	1.37	0.007	Ms4a6b	MS4A6E
-1.20	0.000	SLC22A4	Slc22a4	1.37	0.002	Ifi202b	NA
-1.20	0.000	OTUD1	Otud1	1.37	0.001	Rhoh	RHOH
-1.21	0.004	CDKN1B	Cdkn1b	1.37	0.000	Sele	SELE
-1.21	0.000	GK5	Gk5	1.36	0.001	P2ry14	P2RY14
-1.21	0.005	CKMT2	Ckmt2	1.36	0.006	Slfn8	SLFN13
-1.22	0.000	MC5R	Mc5r	1.36	0.006	Slfn8	SLFN11
-1.22	0.005	TRDN	Trdn	1.36	0.003	Ptprc	PTPRC
-1.22	0.000	TSC22D3	Tsc22d3	1.36	0.002	Ifit1bl2	IFIT1B
-1.22	0.026	KIAA1147	E330009J07	1.36	0.012	Slc28a2	SLC28A2
-1.23	0.000	PHYHIP	Phyhip	1.36	0.000	Lax1	LAX1
-1.24	0.000	SLC24A3	Slc24a3	1.36	0.000	Cxcr4	CXCR4
-1.24	0.000	ASCL2	Ascl2	1.36	0.000	Cd8a	CD8A
-1.25	0.000	NEXN	Nexn	1.36	0.000	Nbeal2	NBEAL2
-1.25	0.000	IRS1	Irs1	1.36	0.000	Calm3	NA
-1.25	0.000	EMC9	Emc9	1.36	0.000	Stom	STOM
-1.26	0.001	INMT-FAM1	Inmt	1.36	0.000	Slc35f2	SLC35F2
-1.26	0.001	INMT	Inmt	1.36	0.000	2810408I11	NA
-1.26	0.002	CALCB	Calcb	1.35	0.000	Gml2	GML
-1.27	0.000	TTN	LOC102641	1.35	0.004	Gmfg	GMFG
-1.27	0.017	TNNC1	Tnnc1	1.35	0.000	Serpinb1a	SERPINB1
-1.27	0.000	CYP2F1	Cyp2f2	1.35	0.007	Oas1g	OAS1
-1.27	0.000	SPRED2	Spred2	1.35	0.000	Aldh1b1	ALDH1B1
-1.28	0.000	IRS1	Irs1	1.35	0.000	Nts	NTS
-1.28	0.000	PANX3	Panx3	1.35	0.000	Tprg	TPRG1
-1.28	0.001	TRDN	Trdn	1.35	0.010	Rsad2	RSAD2
-1.28	0.000	RPL3L	Rpl3l	1.35	0.000	Tmem125	TMEM125
-1.30	0.000	TMOD4	Tmod4	1.35	0.000	Cyp4f18	CYP4F3
-1.30	0.000	CD207	Cd207	1.34	0.000	Fabp6	FABP6
-1.30	0.000	TMSB15B	Tmsb15b2	1.34	0.000	1-Sep	1-Sep
-1.30	0.000		Tmsb15b2	1.34	0.000	Spib	SPIB
-1.30	0.000	TMSB15A	Tmsb15b2	1.34	0.000	Spib	

ACCEPTED MANUSCRIPT

-1.31	0.000	PGAM2	Pgam2
-1.32	0.002	CASQ1	Casq1
-1.32	0.000	HRC	Hrc
-1.33	0.001	CXCL13	Cxcl13
-1.33	0.000	IL20RA	Il20ra
-1.33	0.001	ADIG	Adig
-1.33	0.000	MYL3	Myl3
-1.34	0.000	SLC2A12	Slc2a12
-1.34	0.048	MYH4	Myh4
-1.34	0.002	PPP1R3A	Ppp1r3a
-1.34	0.000	S100B	S100b
-1.36	0.000	SCCPDH	Sccpdh
-1.37	0.000	NA	C130079G1
-1.38	0.005	TRDN	Trdn
-1.38	0.000	IL22RA2	Il22ra2
-1.39	0.000	AADACL4	Gm13177
-1.39	0.000	TRDN	Trdn
-1.39	0.000	ALAD	Alad
-1.40	0.001	ADH6	Adh6a
-1.41	0.000	MYOC	Myoc
-1.44	0.000	NA	Lce1m
-1.46	0.000	TRDN	Trdn
-1.47	0.000	LHPP	Lhpp
-1.48	0.000	AR	Ar
-1.50	0.000	AVPR1A	Avpr1a
-1.52	0.000	IGFBP3	Igfbp3
-1.54	0.000	CYP3A7-CV	Cyp3a57
-1.54	0.000	CYP3A4	Cyp3a57
-1.54	0.000	CYP3A5	Cyp3a57
-1.54	0.000	CYP3A7	Cyp3a57
-1.54	0.000	CYP3A43	Cyp3a57
-1.55	0.000	ALDH3A1	Aldh3a1
-1.55	0.000	FAM3B	Fam3b
-1.58	0.001	NA	Scgb1b27
-1.58	0.000	IL1F10	Il1f10
-1.61	0.013	RETNLB	Retnla
-1.63	0.001	COX7A1	Cox7a1
-1.63	0.000	BCHE	Bche
-1.66	0.002	TRDN	Trdn
-1.70	0.000	BHLHE41	Bhlhe41
-1.70	0.000	ABCA5	Abca5
-1.70	0.000	ADH1A	Adh1
-1.70	0.000	ADH1B	Adh1
-1.70	0.000	ADH1C	Adh1
-1.71	0.001	DAPL1	Dapl1
-1.71	0.000	GUCA2A	Guca2a
-1.73	0.000	MYL2	Myl2
-1.75	0.000	KIF21A	Kif21a
-1.76	0.000	ACOXL	Acoxl
-1.78	0.000	CYP2J2	Cyp2j12
-1.84	0.000	CFAP57	Cfap57
-1.91	0.000	AADACL4	Gm13178
-1.97	0.015	PVALB	Pvalb
-2.04	0.000	SEMA3D	Sema3d
-2.14	0.000	NA	Gsta3
-2.19	0.000	KAZALD1	Kazald1
-2.24	0.000	SERPINB7	Serpinb7
-2.51	0.000	FMO2	Fmo2
-2.53	0.000	PAQR7	Paqr7
-2.61	0.000	CES1	Ces1d
-3.07	0.000		Serpina3b
-3.07	0.000	SERPINA3	Serpina3b
-3.18	0.000	SCGB1A1	Scgb1a1
-4.85	0.000	KRT24	Krt24

1.34	0.001	Lcp1	LCP1
1.34	0.000	Cp	CP
1.34	0.000	Fes	FES
1.34	0.000	Cp	CP
1.34	0.014	Herc6	HERC6
1.34	0.000	Wdr62	WDR62
1.34	0.000	Fes	FES
1.34	0.000	0610040J01	C4orf19
1.34	0.000	Psmb10	PSMB10
1.34	0.000	Efhd2	EFHD2
1.33	0.000	Nav3	NAV3
1.33	0.007	Slamf9	SLAMF9
1.33	0.000	Sox15	SOX15
1.33	0.000	N4bp2l1	N4BP2L1
1.33	0.000	Rgs20	RGS20
1.33	0.000	Crtam	CRTAM
1.33	0.000	Selp	SELP
1.33	0.000	Fermt3	FERMT3
1.33	0.000	Csf2rb	CSF2RB
1.33	0.000	Fermt3	FERMT3
1.32	0.005	Chil4	CHIA
1.32	0.000	Lacc1	
1.32	0.000	Lacc1	LACC1
1.32	0.000	Fgl2	FGL2
1.32	0.000	Cd44	CD44
1.32	0.001	Fermt3	FERMT3
1.32	0.001	Slfn10-ps	NA
1.32	0.000	Adgrg5	ADGRG5
1.32	0.008	Iigp1	NA
1.32	0.000	Atp1a3	ATP1A3
1.32	0.030	BC147527	NA
1.32	0.000	Ms4a1	MS4A1
1.32	0.000	Ifnar2	IFNAR2
1.32	0.000	Ccnb1	CCNB1
1.32	0.002	Ms4a6d	MS4A6A
1.32	0.002	Ms4a6d	MS4A6E
1.32	0.000	Zc3h12c	ZC3H12C
1.32	0.005	Btk	BTK
1.31	0.000	Apol7b	APOL2
1.31	0.000	Apol7b	APOL3
1.31	0.000	Apol7b	APOL4
1.31	0.000	Apol7b	APOL1
1.31	0.000	Slc10a6	SLC10A6
1.31	0.006	Themis2	THEMIS2
1.31	0.000	Dio2	DIO2
1.31	0.000	Zc3hav1	ZC3HAV1
1.31	0.001	P2rx4	P2RX4
1.31	0.000	Acpp	ACPP
1.31	0.001	Ddx58	DDX58
1.31	0.000	Uchl1	UCHL1
1.31	0.000	Il4ra	IL4R
1.31	0.001	Neurl3	NEURL3
1.31	0.003	Lgi2	LGI2
1.31	0.000	Dcp2	DCP2
1.31	0.002	P2ry13	P2RY13
1.30	0.000	Nlrp3	NLRP3
1.30	0.000	Ifnar2	IFNAR2
1.30	0.000	Map4k5	MAP4K5
1.30	0.006	Ifi47	NA
1.30	0.000	Traf1	TRAF1
1.30	0.000	Psmb8	PSMB8
1.30	0.000	Gfi1	GFI1
1.30	0.005	1600010M0	NA
1.30	0.000	Pdia6	PDIA6
1.30	0.000	Sun3	SUN3
1.29	0.005	Ptpn18	PTPN18
1.29	0.000	Tmem173	TMEM173
1.29	0.000	Wdr95	NA

ACCEPTED MANUSCRIPT

1.29	0.008	Tlr7	TLR7
1.29	0.000	Il18r1	IL18R1
1.29	0.000	Stom	STOM
1.29	0.001	Prex1	PREX1
1.29	0.000	Gimap8	GIMAP8
1.29	0.001	Kcnab2	KCNAB2
1.29	0.000	Adora2a	SPECC1L-A
1.29	0.000	Adora2a	ADORA2A
1.29	0.000	Irak3	IRAK3
1.28	0.000	Tmem173	TMEM173
1.28	0.004	Naip2	NAIP
1.28	0.001	Sla	SLA
1.28	0.008	Car2	CA2
1.28	0.000	Tpm3	TPM3
1.28	0.000	Nmi	NMI
1.28	0.000	Lck	LCK
1.28	0.000	Pglyrp2	PGLYRP2
1.28	0.000	Pmaip1	PMAIP1
1.28	0.000	Pde12	PDE12
1.28	0.000	Erich2	ERICH2
1.28	0.001	Csf2rb	CSF2RB
1.27	0.000	Dbil5	NA
1.27	0.028	Ifi44	IFI44
1.27	0.000	Gsap	GSAP
1.27	0.000	A430093F1	NA
1.27	0.000	Klra7	NA
1.27	0.000	Ttc39a	TTC39A
1.27	0.000	Dapp1	DAPP1
1.26	0.000	Ppih	PPIH
1.26	0.001	Dennd4a	DENND4A
1.26	0.000	4930539E0	C6orf222
1.26	0.000	Nlrc3	NLRC3
1.26	0.000	1110008P1	C9orf16
1.26	0.000	Hgf	HGF
1.26	0.000	Apbb1ip	APBB1IP
1.26	0.000	Cenpw	CENPW
1.26	0.000	Tnfrsf11a	TNFRSF11A
1.26	0.026	Elf5	ELF5
1.26	0.000	Coro2a	CORO2A
1.26	0.000	Arrb2	ARRB2
1.26	0.003	Lilrb4a	LILRB3
1.26	0.003	Lilrb4a	LILRB3
1.26	0.003	Lilrb4a	LILRA1
1.26	0.003	Lilrb4a	LILRA4
1.26	0.003	Lilrb4a	LILRA2
1.26	0.003	Lilrb4a	LILRB3
1.26	0.003	Lilrb4a	LILRB2
1.26	0.003	Lilrb4a	LILRA6
1.26	0.003	Lilrb4a	LILRB5
1.26	0.003	Lilrb4a	LILRB1
1.26	0.003	Lilrb4a	LILRA6
1.26	0.003	Lilrb4a	LILRB4
1.26	0.003	Lilrb4a	LILRA5
1.26	0.000	Ptpn6	PTPN6
1.25	0.003	LOC100041	SP110
1.25	0.003	LOC100041877	
1.25	0.000	Fkbp11	FKBP11
1.25	0.000	Nkpd1	NKPD1
1.25	0.001	Akr1b8	NA
1.25	0.000	Slc39a9	SLC39A9
1.25	0.008	Nfam1	NFAM1
1.25	0.000	Kif26b	KIF26B
1.25	0.000	6-Sep	6-Sep
1.25	0.000	Ddias	DDIAS
1.25	0.000	Bcl2l11	BCL2L11
1.25	0.000	Sh2b2	SH2B2
1.25	0.012	1-Mar	1-Mar
1.25	0.000	Dnah2	DNAH2

ACCEPTED MANUSCRIPT

1.25	0.000	B4galnt1	B4GALNT1
1.25	0.003	Clec4a3	CLEC4A
1.25	0.000	Apol7a	APOL1
1.25	0.000	Apol7a	APOL2
1.25	0.000	Apol7a	APOL3
1.25	0.000	Apol7a	APOL4
1.25	0.000	Scarf1	SCARF1
1.25	0.003	Tnfrsf13b	TNFRSF13E
1.24	0.002	Adgre1	ADGRE1
1.24	0.000	Mab21l3	MAB21L3
1.24	0.000	Ptpn6	PTPN6
1.24	0.001	Gab3	GAB3
1.24	0.000	Inpp5d	INPP5D
1.24	0.000	Btg1	BTG1
1.24	0.001	Steap2	STEAP2
1.24	0.007	Sox11	SOX11
1.24	0.003	Ikzf1	IKZF1
1.24	0.001	Arhgap30	ARHGAP30
1.23	0.000	Map4k5	MAP4K5
1.23	0.000	Ifitm5	IFITM5
1.23	0.000	Tifa	TIFA
1.23	0.001	Gm8369	NA
1.23	0.002	Rtp4	RTP4
1.23	0.001	Rinl	RINL
1.23	0.000	Pak1	PAK1
1.23	0.015	Slc14a1	SLC14A1
1.23	0.000	Stc2	STC2
1.23	0.000	Myl7	MYL7
1.23	0.001	Clrn3	CLRN3
1.23	0.000	Gfpt1	GFPT1
1.23	0.000	Ccnb1	CCNB1
1.23	0.006	Nrros	NRROS
1.23	0.001	Psmb9	PSMB9
1.23	0.000	Fam46c	FAM46C
1.23	0.004	Apobec3	APOBEC3D
1.23	0.004	Apobec3	APOBEC3B
1.23	0.004	Apobec3	APOBEC3F
1.23	0.004	Apobec3	APOBEC3G
1.23	0.004	Apobec3	APOBEC3C
1.23	0.000	Treml2	TREML2
1.23	0.000	Nlrp12	NLRP12
1.23	0.000	Syn1	SYN1
1.23	0.006	P2ry6	P2RY6
1.23	0.000	Cgref1	CGREF1
1.22	0.002	Arhgap15	ARHGAP15
1.22	0.000	Btla	BTLA
1.22	0.018	Herc6	HERC6
1.22	0.002	Lrrc4	LRRC4
1.22	0.000	Pkn1	PKN1
1.22	0.000	Sirpa	SIRPA
1.22	0.000	Sirpa	SIRPB1
1.22	0.000	Sirpa	SIRPG
1.22	0.003	Gbp7	GBP7
1.22	0.003	Gbp7	GBP4
1.22	0.004	Naip6	NAIP
1.22	0.006	Rtp4	RTP4
1.22	0.000	Sectm1a	SECTM1
1.22	0.000	Plekho2	PLEKHO2
1.21	0.000	Elmo1	ELMO1
1.21	0.001	Synj1	SYNJ1
1.21	0.000	Serpine1	SERPINE1
1.21	0.000	Itgax	ITGAX
1.21	0.005	Xlr4b	NA
1.21	0.000	Masp1	NA
1.21	0.002	Gsdma2	GSDMA
1.21	0.000	Cdkn3	CDKN3
1.21	0.000	Gpr132	GPR132
1.21	0.000	Cntn2	CNTN2

ACCEPTED MANUSCRIPT

1.21	0.001	Plaur	PLAUR
1.21	0.004	Gsdma2	GSDMA
1.21	0.000	Gimap9	GIMAP7
1.20	0.000	Bak1	BAK1
1.20	0.000	Pla2g4f	PLA2G4F
1.20	0.001	Glipr2	GLIPR2
1.20	0.001	Orc1	ORC1
1.20	0.009	Trim14	TRIM14
1.20	0.000	Tes	TES
1.20	0.000	Prkcq	PRKCQ
1.19	0.000	Ptpn1	PTPN1
1.19	0.000	Atxn7l1	ATXN7L1
1.19	0.000	Cd163l1	NA
1.19	0.017	Ifit3	IFIT3
1.19	0.000	Nav3	NAV3
1.19	0.007	Tnfaip8l2	TNFAIP8L2
1.19	0.000	Birc3	BIRC3
1.19	0.019	C3ar1	C3AR1
1.19	0.004	Ncf2	NCF2
1.18	0.000	Tmprss4	TMPRSS4
1.18	0.000	Cenpe	CENPE
1.18	0.000	1500011B01	NA
1.18	0.000	Ccbe1	CCBE1
1.18	0.000	Smpdl3b	SMPDL3B
1.18	0.000	Jak3	JAK3
1.18	0.001	Coro1a	CORO1A
1.18	0.000	Ttc39b	TTC39B
1.18	0.000	Rgs20	RGS20
1.18	0.000	Mthfd1l	MTHFD1L
1.18	0.000	Rab31	RAB31
1.18	0.000	Zfand5	ZFAND5
1.17	0.005	Laptm5	LAPTM5
1.17	0.005	Ptgs2	PTGS2
1.17	0.000	Ntpcr	NTPCR
1.17	0.000	Lrp8	LRP8
1.17	0.000	Sfmbt2	SFMBT2
1.17	0.003	Cmpk2	CMPK2
1.17	0.000	Tnfrsf1b	TNFRSF1B
1.17	0.002	Loxl3	LOXL3
1.17	0.000	C330022C2	NA
1.17	0.000	Cflar	CFLAR
1.17	0.001	Fam72a	FAM72D
1.17	0.001	Fam72a	FAM72B
1.17	0.001	Fam72a	FAM72C
1.17	0.001	Fam72a	FAM72A
1.17	0.001	Fam72a	FAM72A
1.17	0.001	Fam72a	FAM72A
1.17	0.007	LOC100041	SP110
1.17	0.007	LOC100041	877
1.17	0.000	Masp1	NA
1.17	0.000	Fbn2	FBN2
1.16	0.001	Helz2	HELZ2
1.16	0.000	Nkap	NKAP
1.16	0.000	Nuak2	NUAK2
1.16	0.015	Phf11a	PHF11
1.16	0.008	Klhl6	KLHL6
1.16	0.000	Apobec1	APOBEC1
1.16	0.000	Cd24a	CD24
1.16	0.000	Itprip	CFAP43
1.16	0.000	Cgref1	CGREF1
1.16	0.004	Unc93b1	UNC93B1
1.16	0.002	Sycp2	SYCP2
1.15	0.000	Teddm3	NA
1.15	0.000	Sod3	SOD3
1.15	0.000	4933430I17	C9orf43
1.15	0.000	D16Ertd472	C21orf91
1.15	0.004	Glipr2	GLIPR2
1.15	0.000	Erap1	ERAP1

ACCEPTED MANUSCRIPT

1.15	0.000	Ugcg	UGCG
1.15	0.000	Pou2f2	POU2F2
1.15	0.000	Plcg2	PLCG2
1.15	0.009	Nckap1l	NCKAP1L
1.15	0.000	Defb2	NA
1.15	0.000	1700097N0	NA
1.15	0.000	Card11	CARD11
1.14	0.010	Chrng	CHRNG
1.14	0.000	Nat8	NAT8
1.14	0.000	Ptges	PTGES
1.14	0.000	Mvp	MVP
1.14	0.003	Dppa2	DPPA2
1.14	0.000	Ciita	CIITA
1.14	0.015	Mx2	MX1
1.14	0.001	Agtrap	AGTRAP
1.14	0.032	Plac8	PLAC8
1.14	0.000	Tnfrsf23	NA
1.14	0.000	Phgdh	PHGDH
1.14	0.001	Klrb1b	KLRB1
1.14	0.001	Ciita	CIITA
1.14	0.000	Sema3a	SEMA3A
1.14	0.000	Aqp3	AQP3
1.14	0.002	Gng2	GNG2
1.14	0.000	Akna	AKNA
1.14	0.001	Alox15	ALOX15
1.14	0.006	Pla2g4b	PLA2G4B
1.14	0.006	Pla2g4b	JMJD7-PLA
1.14	0.006	Pla2g4b	JMJD7-PLA
1.14	0.000	Ets1	ETS1
1.14	0.001	Coro1a	CORO1A
1.13	0.010	AI662270	NA
1.13	0.000	Ddx43	DDX43
1.13	0.000	Naaa	NAAA
1.13	0.002	Acpp	ACPP
1.13	0.000	Epsti1	EPSTI1
1.13	0.000	Ccdc93	CCDC93
1.13	0.000	Parpbp	PARPBP
1.13	0.001	Syk	SYK
1.13	0.000	Dmbt1	DMBT1
1.13	0.003	St8sia4	ST8SIA4
1.13	0.000	Soat2	SOAT2
1.13	0.000	Syk	SYK
1.13	0.000	Nus1	NUS1
1.13	0.000	Tnfaip3	TNFAIP3
1.12	0.000	Parvg	PARVG
1.12	0.011	Trex2	TREX2
1.12	0.003	Apbb1ip	APBB1IP
1.12	0.000	Ppp1r16b	PPP1R16B
1.12	0.000	Tnfsf10	TNFSF10
1.12	0.001	Tpx2	TPX2
1.12	0.000	Kif2c	KIF2C
1.12	0.023	Oasl2	NA
1.12	0.000	Enah	ENAH
1.12	0.001	Samhd1	SAMHD1
1.12	0.004	Cp	CP
1.12	0.000	Myo5b	MYO5B
1.12	0.000	Aprt	APRT
1.12	0.000	Evl	EVL
1.12	0.000	Cd247	CD247
1.12	0.000	Rilpl2	RILPL2
1.12	0.001	Fos	FOS
1.12	0.000	Bak1	BAK1
1.11	0.010	Cyth4	CYTH4
1.11	0.002	Serpinb1a	SERPINB1
1.11	0.004	8430408G2	C10orf10
1.11	0.000	Gpd2	GPD2
1.11	0.000	Psrc1	PSRC1
1.11	0.000	Slc16a3	SLC16A3

ACCEPTED MANUSCRIPT

1.11	0.000	Fscn1	FSCN1
1.11	0.001	Cdc25c	CDC25C
1.11	0.000	Aim2	AIM2
1.11	0.001	Klrb1b	KLRB1
1.11	0.000	Slamf6	SLAMF6
1.11	0.001	Mall	MALL
1.11	0.002	Dennd1c	DENND1C
1.10	0.005	Rassf4	RASSF4
1.10	0.000	Ccl11	CCL11
1.10	0.028	Abcg3	ABCG2
1.10	0.000	Mrpl15	MRPL15
1.10	0.000	Abcg4	ABCG4
1.10	0.022	Mmp3	MMP3
1.10	0.000	Cfap69	CFAP69
1.10	0.000	Masp1	NA
1.10	0.000	Pik3cd	PIK3CD
1.10	0.000	Il1f5	IL36RN
1.10	0.000	Stc2	STC2
1.10	0.000	Spdl1	SPDL1
1.10	0.000	Csrnp1	CSRNP1
1.10	0.000	Gosr2	
1.10	0.000	Gosr2	GOSR2
1.10	0.000	Gm19345	NA
1.10	0.017	Cxcr3	CXCR3
1.09	0.000	Gca	GCA
1.09	0.000	Masp1	NA
1.09	0.000	Skap1	SKAP1
1.09	0.007	Lyn	LYN
1.09	0.003	Ptprj	PTPRJ
1.09	0.001	Cd52	NA
1.09	0.000	Il27ra	IL27RA
1.09	0.000	Sh3bp2	SH3BP2
1.09	0.014	Dock2	DOCK2
1.09	0.000	Uroc1	UROC1
1.09	0.000	Cbln1	CBLN1
1.09	0.000	Pim2	PIM2
1.09	0.000	Nfkbib	NFKBIB
1.09	0.007	Laptm5	LAPTM5
1.09	0.018	Cd300lb	CD300LB
1.09	0.000	Shcbp1l	SHCBP1L
1.09	0.001	Ifi35	IFI35
1.09	0.000	Zap70	ZAP70
1.09	0.006	Sla	SLA
1.09	0.000	BC021614	NA
1.09	0.000	Arhgef10l	ARHGEF10
1.09	0.000	Fgd3	FGD3
1.09	0.000	Mall	MALL
1.09	0.000	Pign	PIGN
1.09	0.006	Ugcg	UGCG
1.08	0.001	Vstm5	VSTM5
1.08	0.000	Arhgap25	ARHGAP25
1.08	0.000	C130026I21	SP140
1.08	0.002	Tnfaip6	TNFAIP6
1.08	0.001	Ttc22	TTC22
1.08	0.006	Pik3r6	PIK3R6
1.08	0.000	Il21r	IL21R
1.08	0.000	5830432E0	NA
1.08	0.001	Entpd1	ENTPD1
1.08	0.001	Entpd1	
1.08	0.001	Rrm2	RRM2
1.08	0.001	Slc39a14	SLC39A14
1.08	0.000	Tgfb1	TGFB1
1.08	0.000	Dnajc2	DNAJC2
1.08	0.000	Pold3	POLD3
1.08	0.000	Rasgrp1	RASGRP1
1.08	0.000	Fam49b	FAM49B
1.08	0.000	Akna	AKNA
1.08	0.000	Hmmr	HMMR

ACCEPTED MANUSCRIPT

1.08	0.002	Kif2c	KIF2C
1.08	0.000	Sit1	SIT1
1.08	0.000	Crk	CRK
1.08	0.000	Lck	LCK
1.08	0.009	Col24a1	COL24A1
1.08	0.000	Tlr12	NA
1.08	0.000	Klrb1b	KLRB1
1.07	0.001	Nrg1	NRG1
1.07	0.000	6430548M0	KIAA0513
1.07	0.028	Wisp2	WISP2
1.07	0.012	Abcg3	ABCG2
1.07	0.010	Ptprj	PTPRJ
1.07	0.000	Erap1	ERAP1
1.07	0.000	Sh2d5	SH2D5
1.07	0.000	Pde12	PDE12
1.07	0.012	Cd37	CD37
1.07	0.003	Adar	ADAR
1.07	0.000	Klhl5	KLHL5
1.07	0.000	Serp1	SERP1
1.07	0.000	Irf5	IRF5
1.07	0.001	Arhgap9	ARHGAP9
1.07	0.000	Gimap1	GIMAP1
1.07	0.000	Nostrin	NOSTRIN
1.06	0.005	Ptprc	PTPRC
1.06	0.000	Mthfr	MTHFR
1.06	0.000	Stx11	STX11
1.06	0.000	Ly75	LY75-CD30
1.06	0.000	Ly75	LY75
1.06	0.000	Ercc6l	ERCC6L
1.06	0.000	Cd19	CD19
1.06	0.000	Dok1	DOK1
1.06	0.050	Bdh1	BDH1
1.06	0.000	Rgs14	RGS14
1.06	0.000	Fam105a	FAM105A
1.06	0.000	Aqp3	AQP3
1.06	0.047	Areg	AREG
1.06	0.000	Cyp8b1	CYP8B1
1.06	0.009	Lce1h	NA
1.06	0.000	Xylt2	XYLT2
1.06	0.000	N4bp1	N4BP1
1.06	0.000	Carhsp1	CARHSP1
1.06	0.000	Orai2	ORAI2
1.06	0.000	Snx10	SNX10
1.06	0.000	Serpina3m	
1.06	0.000	Serpina3m	SERPINA3
1.06	0.000	Entpd7	ENTPD7
1.05	0.000	Entpd7	ENTPD7
1.05	0.000	Crlf2	CRLF2
1.05	0.004	Igll1	IGLL5
1.05	0.004	Igll1	IGLL1
1.05	0.004	Igll1	IGLC2
1.05	0.004	Igll1	IGLC3
1.05	0.004	Igll1	IGLC1
1.05	0.004	Igll1	IGLC7
1.05	0.000	Ubash3b	UBASH3B
1.05	0.000	Syk	SYK
1.05	0.001	Chit1	CHIT1
1.05	0.000	Cdc42	CDC42
1.05	0.000	Rarres2	RARRES2
1.05	0.000	Klk8	KLK8
1.05	0.002	Gm11992	C7orf57
1.05	0.000	Nkap	NKAP
1.05	0.001	Hsd11b1	HSD11B1
1.05	0.006	Dck	DCK
1.05	0.000	Wfikkn1	WFIKKN1
1.05	0.000	Junb	JUNB
1.05	0.001	Cd96	CD96
1.05	0.000	Gpr85	GPR85

ACCEPTED MANUSCRIPT

1.04	0.000	Car12	CA12
1.04	0.000	Arid5a	ARID5A
1.04	0.000	6330416G1	C9orf91
1.04	0.000	Pdss1	PDSS1
1.04	0.000	Kif3b	KIF3B
1.04	0.004	Fam105a	FAM105A
1.04	0.000	Plscr1	NA
1.04	0.001	Prss22	PRSS22
1.04	0.000	Mrs2	MRS2
1.04	0.004	Cd28	CD28
1.04	0.000	Pvrl1	PVRL1
1.04	0.000	S1pr4	S1PR4
1.04	0.000	Pak6	PAK6
1.04	0.000	Pak6	
1.04	0.001	Tmem229b	TMEM229B
1.04	0.010	Tlr4	TLR4
1.04	0.000	Atp13a5	ATP13A5
1.04	0.000	Gapdhs	GAPDHS
1.03	0.023	Trim30d	TRIM5
1.03	0.000	Mastl	MASTL
1.03	0.002	Rgn	RGN
1.03	0.000	Psmg4	PSMG4
1.03	0.000	Mapk6	MAPK6
1.03	0.005	Hif1a	HIF1A
1.03	0.002	Klra5	NA
1.03	0.000	Myd88	MYD88
1.03	0.004	BC035044	NA
1.03	0.008	8430408G2	C10orf10
1.03	0.003	Naaa	NAAA
1.03	0.000	Dram1	DRAM1
1.03	0.000	Irak3	IRAK3
1.03	0.000	Rnase1	RNASE1
1.02	0.029	Akr1d1	AKR1D1
1.02	0.000	Cyp4f16	NA
1.02	0.000	Osmr	OSMR
1.02	0.000	Nceh1	NCEH1
1.02	0.001	Trip13	TRIP13
1.02	0.000	Evl	EVL
1.02	0.000	Hcar2	HCAR3
1.02	0.000	Hcar2	HCAR2
1.02	0.006	Tmem26	TMEM26
1.02	0.001	Irf1	IRF1
1.02	0.000	Plekhf2	PLEKHF2
1.02	0.000	Rnaseh2c	RNASEH2C
1.02	0.025	Naip5	NAIP
1.02	0.010	Pik3r6	PIK3R6
1.02	0.000	Twf1	TWF1
1.02	0.000	Il1rap	IL1RAP
1.02	0.000	Ing5	ING5
1.02	0.026	Sdc3	SDC3
1.02	0.006	BC028528	C1orf54
1.02	0.001	Cklf	CKLF
1.02	0.000	B4galt6	B4GALT6
1.02	0.000	Vav3	VAV3
1.02	0.000	Atxn7l1	ATXN7L1
1.02	0.000	Tmem125	TMEM125
1.02	0.000	Jak2	JAK2
1.02	0.000	Pitpnm1	PITPNM1
1.02	0.000	Snx20	SNX20
1.02	0.000	Hmmr	HMMR
1.02	0.004	Arhgap15	ARHGAP15
1.01	0.001	Ido1	IDO1
1.01	0.000	Zc3h12a	ZC3H12A
1.01	0.002	Trpt1	TRPT1
1.01	0.003	Pik3cg	PIK3CG
1.01	0.000	Plbd1	PLBD1
1.01	0.000	Ccr9	CCR9
1.01	0.000	F10	F10

ACCEPTED MANUSCRIPT

1.01	0.000	Trpm2	TRPM2
1.01	0.000	Cyp4f16	NA
1.01	0.000	Tmsb15a	TMSB15A
1.01	0.000	Tmsb15a	
1.01	0.000	Tmsb15a	TMSB15B
1.01	0.000	Piga	PIGA
1.01	0.000	Galnt3	GALNT3
1.01	0.001	Shcbp1	SHCBP1
1.01	0.000	Tnfaip2	TNFAIP2
1.01	0.008	Lgals3bp	LGALS3BP
1.01	0.005	Rasgrp4	RASGRP4
1.01	0.000	Hgf	HGF
1.01	0.001	Slc1a1	SLC1A1
1.01	0.008	Vcan	VCAN
1.01	0.017	Plcl2	PLCL2
1.00	0.001	Rasa4	RASA4B
1.00	0.001	Rasa4	RASA4
1.00	0.001	Rasa4	RASA4
1.00	0.000	Snx11	SNX11
1.00	0.000	Mst1	MST1
1.00	0.000	6-Sep	6-Sep
1.00	0.000	Haghl	HAGHL
1.00	0.001	Psrc1	PSRC1
1.00	0.006	Osmr	OSMR
1.00	0.000	Ccdc125	CCDC125
1.00	0.035	Herc6	HERC6
1.00	0.000	Slc2a3	SLC2A3
1.00	0.000	Slc2a3	SLC2A14
1.00	0.000	Stk17b	STK17B
1.00	0.001	Fkbp1b	FKBP1B
1.00	0.000	Tnf	TNF
1.00	0.000	Lpin2	LPIN2
1.00	0.002	Nt5dc2	NT5DC2
1.00	0.000	Rpap2	RPAP2
-1.00	0.019	Cfh	CFHR3
-1.00	0.019	Cfh	CFH
-1.00	0.001	Timp4	TIMP4
-1.00	0.018	Ccser1	CCSER1
-1.00	0.000	Cutal	NA
-1.00	0.000	Arvcf	ARVCF
-1.00	0.002	Hoxb8	HOXB8
-1.00	0.000	Al035719	SLC25A27
-1.00	0.002	Bbox1	BBOX1
-1.00	0.000	Elmod1	ELMOD1
-1.00	0.000	Elmod1	ELMOD1
-1.00	0.011	Cubn	CUBN
-1.00	0.003	Ppp1r9a	PPP1R9A
-1.00	0.002	Ptk7	PTK7
-1.00	0.000	Fabp4	FABP4
-1.00	0.000	Trpm3	TRPM3
-1.00	0.000	Dusp18	DUSP18
-1.00	0.000	B4galnt2	B4GALNT2
-1.00	0.000	Zfp606	ZNF606
-1.01	0.000	Krt12	KRT12
-1.01	0.001	Clec4g	CLEC4G
-1.01	0.001	Bche	BCHE
-1.01	0.000	Kitl	KITLG
-1.01	0.000	Matn2	MATN2
-1.01	0.000	Fah	FAH
-1.01	0.009	Fxr1	FXR1
-1.01	0.000	Ccnd2	CCND2
-1.01	0.000	Cdk7	CDK7
-1.01	0.000	Palld	PALLD
-1.01	0.001	Rab17	RAB17
-1.01	0.048	Zfp618	ZNF618
-1.01	0.000	Tusc5	TUSC5
-1.01	0.000	Tra2a	TRA2A
-1.01	0.000	Smoc2	SMOC2

ACCEPTED MANUSCRIPT

-1.01	0.000	Hist1h2bc	HIST1H2BM
-1.01	0.011	Rab15	RAB15
-1.01	0.001	Myo1d	MYO1D
-1.01	0.011	Nckap5	NCKAP5
-1.01	0.000	Akap12	AKAP12
-1.01	0.000	Prkd1	PRKD1
-1.01	0.000	Ntrk2	NTRK2
-1.01	0.002	Fgfr2	FGFR2
-1.01	0.000	Foxd1	NA
-1.01	0.002	Car3	CA3
-1.02	0.000	Arhgap24	ARHGAP24
-1.02	0.000	Cbx7	CBX7
-1.02	0.002	Fbxl7	FBXL7
-1.02	0.000	Hoxa3	HOXA3
-1.02	0.000	Zbtb4	ZBTB4
-1.02	0.001	Hsd17b14	HSD17B14
-1.02	0.003	Sox4	SOX4
-1.02	0.001	Glt8d2	GLT8D2
-1.02	0.000	Gm4980	TPBGL
-1.02	0.000	Ntrk2	NTRK2
-1.02	0.000	Crim1	CRIM1
-1.02	0.000	Timp2	TIMP2
-1.02	0.000	Kcnu1	KCNU1
-1.02	0.003	Myh11	MYH11
-1.02	0.000	Rspo3	RSPO3
-1.02	0.010	Acaa1b	ACAA1
-1.02	0.005	Vldlr	VLDLR
-1.02	0.000	Hspb8	HSPB8
-1.02	0.000	Gpc4	GPC4
-1.02	0.000	Ccl27a	CCL27
-1.02	0.000	Bace1	BACE1
-1.03	0.001	Mn1	MN1
-1.03	0.000	Sdpr	SDPR
-1.03	0.000	Ylpm1	YLPM1
-1.03	0.000	Glcci1	GLCCI1
-1.03	0.002	Wnt5a	WNT5A
-1.03	0.001	Slc38a4	SLC38A4
-1.03	0.000	Zfp318	ZNF318
-1.03	0.000	Spred2	SPRED2
-1.03	0.004	Chrdl1	CHRDL1
-1.03	0.000	Gstm1	NA
-1.03	0.000	Pla2g3	PLA2G3
-1.03	0.000	Pfn2	PFN2
-1.03	0.008	Aif1l	AIF1L
-1.03	0.000	Pde4d	PDE4D
-1.03	0.000	Sox9	SOX9
-1.03	0.000	Plekha5	PLEKHA5
-1.03	0.003	Pkp2	PKP2
-1.03	0.001	Pcp4l1	PCP4L1
-1.03	0.000	Decr1	DECR1
-1.03	0.000	Hlf	HLF
-1.03	0.000	Sema3b	SEMA3B
-1.03	0.000	Ccdc62	CCDC62
-1.03	0.000	Stox2	STOX2
-1.03	0.006	Zfp365	ZNF365
-1.03	0.002	Phkg1	PHKG1
-1.03	0.000	Il17rd	IL17RD
-1.03	0.000	Sema3e	SEMA3E
-1.03	0.001	Rgmb	RGMB
-1.04	0.000	1700049G1	ZNF850
-1.04	0.003	Neu2	NEU2
-1.04	0.000	Ttc28	TTC28
-1.04	0.000	Dnajb4	DNAJB4
-1.04	0.000	Heph	HEPH
-1.04	0.000	Repin1	REPIN1
-1.04	0.011	Mup10	NA
-1.04	0.000	Slc25a23	SLC25A23
-1.04	0.000	Csrnp2	CSRNP2

ACCEPTED MANUSCRIPT

-1.04	0.000	Rragd	RRAGD
-1.04	0.000	Plp1	PLP1
-1.04	0.000	Zfp760	NA
-1.04	0.000	Zc3h4	ZC3H4
-1.04	0.000	Ptn	PTN
-1.04	0.011	Gm2115	NA
-1.04	0.001	Gas6	GAS6
-1.04	0.001	Far2	FAR2
-1.04	0.000	Gstm1	NA
-1.04	0.002	Fras1	FRAS1
-1.04	0.000	Wipf3	WIPF3
-1.04	0.000	Wdr47	WDR47
-1.04	0.001	Hdac11	HDAC11
-1.04	0.001	Abcd2	ABCD2
-1.04	0.001	Mup3	NA
-1.05	0.000	Gm19597	TSC22D1
-1.05	0.000	Igfbp4	IGFBP4
-1.05	0.002	Kalrn	KALRN
-1.05	0.000	Trp53bp1	TP53BP1
-1.05	0.000	Pappa	PAPPA
-1.05	0.000	Syde2	SYDE2
-1.05	0.000	Tmem159	TMEM159
-1.05	0.001	Paqr5	PAQR5
-1.05	0.002	Ypel2	YPEL2
-1.05	0.001	Dusp15	DUSP15
-1.05	0.001	Myh2	MYH2
-1.05	0.000	Acsbg1	ACSBG1
-1.05	0.000	Sulf2	SULF2
-1.05	0.000	Adamtsl5	ADAMTSL5
-1.05	0.000	Chd2	CHD2
-1.05	0.001	Ccl27a	CCL27
-1.05	0.000	Vangl2	VANGL2
-1.05	0.000	Cd59a	CD59
-1.05	0.000	Sesn3	SESN3
-1.05	0.000	3110021A1	NA
-1.05	0.001	Usp13	USP13
-1.06	0.000	Hoxd8	HOXD8
-1.06	0.002	Prkaa2	PRKAA2
-1.06	0.000	Myom2	MYOM2
-1.06	0.000	Kitl	KITLG
-1.06	0.000	Sox13	SOX13
-1.06	0.000	Ldah	LDAH
-1.06	0.000	Kif13a	KIF13A
-1.06	0.000	St6gal1	ST6GAL1
-1.06	0.009	Nkd2	NKD2
-1.06	0.000	Cyb5r2	CYB5R2
-1.06	0.001	Prkaa2	PRKAA2
-1.06	0.001	Ugt8a	UGT8
-1.06	0.015	Thrsp	THRSP
-1.06	0.000	Zbtb20	ZBTB20
-1.06	0.000	Sertad4	SERTAD4
-1.06	0.000	Dnaja4	DNAJA4
-1.06	0.001	Aqp7	AQP7
-1.06	0.001	Aqp7	
-1.06	0.001	Aqp7	
-1.06	0.000	Sostdc1	SOSTDC1
-1.06	0.000	Ednrb	EDNRB
-1.06	0.004	Il20ra	IL20RA
-1.06	0.000	Airn	NA
-1.06	0.001	Apobec2	APOBEC2
-1.06	0.000	Gpc3	GPC3
-1.06	0.000	Rab11fip2	RAB11FIP2
-1.06	0.000	Efnb1	EFNB1
-1.06	0.000	Sspn	SSPN
-1.06	0.000	2700081O1	C11orf95
-1.06	0.001	Pappa	PAPPA
-1.07	0.000	Retn	RETN
-1.07	0.001	Pde4dip	PDE4DIP

ACCEPTED MANUSCRIPT

-1.07	0.000	Cspg4	CSPG4
-1.07	0.000	Cfd	CFD
-1.07	0.005	Chn2	CHN2
-1.07	0.005	Chn2	CHN2
-1.07	0.000	Ar	AR
-1.07	0.000	Tmem57	TMEM57
-1.07	0.000	Fap	FAP
-1.07	0.000	Zc3hav1l	ZC3HAV1L
-1.07	0.000	Reck	RECK
-1.07	0.000	Adcy1	ADCY1
-1.07	0.000	Cep97	CEP97
-1.07	0.000	Kitl	KITLG
-1.07	0.000	Slc22a3	SLC22A3
-1.07	0.003	Synm	SYNM
-1.07	0.000	Slc1a3	SLC1A3
-1.08	0.000	Nfib	NFIB
-1.08	0.000	Zbtb16	ZBTB16
-1.08	0.000	Sdpr	SDPR
-1.08	0.000	Tenm4	TENM4
-1.08	0.000	Fam189a2	FAM189A2
-1.08	0.000	Wasf1	WASF1
-1.08	0.000	Chd3os	NA
-1.08	0.000	Fads6	FADS6
-1.08	0.004	Slc22a22	NA
-1.08	0.000	Mme	MME
-1.08	0.008	Fzd5	FZD5
-1.08	0.000	Rab11fip2	RAB11FIP2
-1.08	0.000	Pcdh18	PCDH18
-1.08	0.000	Ccnd2	CCND2
-1.08	0.000	0610037L13	C1orf123
-1.08	0.000	Plin4	PLIN4
-1.08	0.001	Agmo	AGMO
-1.08	0.000	Cyp17a1	CYP17A1
-1.09	0.000	Myom2	MYOM2
-1.09	0.001	Cmah	NA
-1.09	0.000	Rps24	NA
-1.09	0.001	Foxq1	FOXQ1
-1.09	0.020	Slc39a10	SLC39A10
-1.09	0.000	Flrt2	FLRT2
-1.09	0.000	Irf3	IRF3
-1.09	0.003	Atp1a2	ATP1A2
-1.09	0.000	Fam221a	FAM221A
-1.09	0.001	Lrrc2	LRRC2
-1.09	0.000	Crlf1	CRLF1
-1.09	0.000	Pfn2	PFN2
-1.09	0.000	Sc5d	SC5D
-1.09	0.001	Itih5	ITIH5
-1.09	0.000	Sema3e	SEMA3E
-1.09	0.000	Lgr4	LGR4
-1.09	0.000	Sncaip	SNCAIP
-1.09	0.000	Nap1l5	NAP1L5
-1.09	0.001	Zbtb20	ZBTB20
-1.09	0.000	Gid4	GID4
-1.09	0.000	Camta1	CAMTA1
-1.09	0.002	Asb11	ASB11
-1.09	0.000	Abcd2	ABCD2
-1.10	0.000	Ppargc1a	PPARGC1A
-1.10	0.000	Dzip1	DZIP1
-1.10	0.001	Tiam2	TIAM2
-1.10	0.000	Ntn1	NTN1
-1.10	0.000	Agr3	AGR3
-1.10	0.002	Cyp4b1	CYP4B1
-1.10	0.006	Ddit4l	DDIT4L
-1.10	0.000	Apcdd1	APCDD1
-1.10	0.000	Gpm6a	GPM6A
-1.10	0.002	Cilp	CILP
-1.10	0.002	Akr1c19	NA
-1.10	0.000	Wdr38	WDR38

ACCEPTED MANUSCRIPT

-1.10	0.000	Apcdd1	APCDD1
-1.10	0.001	Gucy1a3	GUCY1A3
-1.10	0.000	Insig2	INSIG2
-1.10	0.000	Slc45a3	SLC45A3
-1.10	0.000	Scn2b	SCN2B
-1.10	0.002	Ryr1	RYR1
-1.10	0.003	Mex3b	MEX3B
-1.11	0.000	Bach2	BACH2
-1.11	0.000	Abcd2	ABCD2
-1.11	0.001	Atp1a2	ATP1A2
-1.11	0.000	Dnajc19	DNAJC19
-1.11	0.008	Irx4	IRX4
-1.11	0.001	Sema6a	SEMA6A
-1.11	0.000	Igfals	IGFALS
-1.11	0.000	Paqr9	PAQR9
-1.11	0.000	Amotl1	AMOTL1
-1.11	0.002	Tgfb2	TGFB2
-1.11	0.001	Slc1a3	SLC1A3
-1.11	0.000	Npas2	NPAS2
-1.11	0.000	Mogat1	MOGAT1
-1.11	0.000	Ppil6	PPIL6
-1.11	0.000	Pdzrn3	PDZRN3
-1.11	0.002	Ogn	OGN
-1.11	0.000	Sostdc1	SOSTDC1
-1.11	0.000	Abhd14b	ABHD14B
-1.11	0.000	Alad	ALAD
-1.12	0.000	Stox2	STOX2
-1.12	0.000	Trim24	TRIM24
-1.12	0.000	Ptpdc1	PTPDC1
-1.12	0.003	Aldh1a1	ALDH1A1
-1.12	0.000	Tgfb2	TGFB2
-1.12	0.001	Fat4	FAT4
-1.12	0.000	Pvrl3	PVRL3
-1.12	0.001	Pdk2	PDK2
-1.12	0.000	Vangl2	VANGL2
-1.12	0.001	Id4	ID4
-1.12	0.002	Tmod2	TMOD2
-1.12	0.000	Ldb3	LDB3
-1.12	0.000	Xirp1	XIRP1
-1.12	0.000	Foxc1	FOXC1
-1.12	0.000	Car3	CA3
-1.12	0.000	Krt19	KRT19
-1.12	0.000	Fgfr1	FGFR1
-1.12	0.000	Rai2	RAI2
-1.12	0.016	Ckmt2	CKMT2
-1.12	0.000	Peg3	PEG3
-1.12	0.014	Unc5b	UNC5B
-1.13	0.000	Cmya5	CMYA5
-1.13	0.001	Reep6	REEP6
-1.13	0.000	Sfpq	SFPQ
-1.13	0.000	Ccdc80	CCDC80
-1.13	0.000	Ttn	TTN
-1.13	0.000	Upk3b	UPK3B
-1.13	0.000	Upk3b	UPK3B
-1.13	0.000	Myh4	MYH4
-1.13	0.000	Nfia	NFIA
-1.13	0.030	Krtap9-1	KRTAP9-1
-1.13	0.004	Rpl3l	RPL3L
-1.13	0.000	Lor	NA
-1.13	0.000	Lims2	LIMS2
-1.13	0.000	Cib2	CIB2
-1.13	0.000	Dmd	DMD
-1.13	0.000	Ppp2r2c	PPP2R2C
-1.13	0.000	Pdgfa	PDGFA
-1.13	0.000	Pgm2l1	PGM2L1
-1.13	0.000	Coro6	CORO6
-1.13	0.000	Acvr1c	ACVR1C
-1.13	0.000	Chpt1	CHPT1

ACCEPTED MANUSCRIPT

-1.13	0.000	Nt5e	NT5E
-1.13	0.001	Kcnma1	KCNMA1
-1.14	0.000	Igfbp4	IGFBP4
-1.14	0.007	Tmeff1	TMEFF1
-1.14	0.007	Tmeff1	MSANTD3-T
-1.14	0.002	Serpinb7	SERPINB7
-1.14	0.011	Pthlh	PTHLH
-1.14	0.000	Robo1	ROBO1
-1.14	0.000	Phldb1	PHLDB1
-1.14	0.014	Mylk3	MYLK3
-1.14	0.001	Lgr5	LGR5
-1.14	0.005	Kif26a	KIF26A
-1.14	0.000	Cat	CAT
-1.14	0.000	Mettl7a2	METTL7A
-1.14	0.017	Galnt15	GALNT15
-1.14	0.000	Ar	AR
-1.14	0.001	Pygm	PYGM
-1.14	0.000	Micalcl	MICALCL
-1.14	0.001	Dpp4	DPP4
-1.14	0.023	Il31ra	IL31RA
-1.14	0.000	Ncald	NCALD
-1.14	0.000	Ccnd2	CCND2
-1.14	0.001	Clec3b	CLEC3B
-1.14	0.000	Scmh1	SCMH1
-1.15	0.002	Rab11fip1	RAB11FIP1
-1.15	0.000	Utp18	UTP18
-1.15	0.000	Adamts12	ADAMTS12
-1.15	0.000	Adamtsl4	ADAMTSL4
-1.15	0.000	Nedd4l	NEDD4L
-1.15	0.000	Ppargc1a	PPARGC1A
-1.15	0.000	Wnt3	WNT3
-1.15	0.000	Wnt3	WNT3
-1.15	0.000	Lama2	LAMA2
-1.15	0.000	F3	F3
-1.15	0.000	Neo1	NEO1
-1.15	0.000	Dzip1	DZIP1
-1.15	0.000	Abtb2	ABTB2
-1.15	0.001	Vldlr	VLDLR
-1.15	0.001	Lmod1	LMOD1
-1.16	0.000	Igfbp2	IGFBP2
-1.16	0.000	Stox2	STOX2
-1.16	0.001	Slco5a1	SLCO5A1
-1.16	0.000	Marveld2	MARVELD2
-1.16	0.000	BC006965	NA
-1.16	0.002	Ntn4	NTN4
-1.16	0.000	Hnrnpr	HNRNPR
-1.16	0.004	Cd163	CD163
-1.16	0.000	Zak	
-1.16	0.000	Zfp503	ZNF503
-1.16	0.003	Gm14137	C15orf62
-1.16	0.006	Penk	PENK
-1.16	0.000	Hoxb6	HOXB6
-1.16	0.006	Glrb	GLRB
-1.16	0.000	Fam19a5	FAM19A5
-1.16	0.000	Rorc	RORC
-1.16	0.000	Foxc1	FOXC1
-1.16	0.000	Gpc6	GPC6
-1.16	0.000	Abcc9	ABCC9
-1.16	0.001	Nav2	NAV2
-1.16	0.000	Sfrp1	SFRP1
-1.17	0.002	Myoz3	MYOZ3
-1.17	0.000	Axin2	AXIN2
-1.17	0.000	D930015E0	KIAA0922
-1.17	0.020	Cd209d	CLEC4M
-1.17	0.020	Cd209d	CD209
-1.17	0.000	Kitl	KITLG
-1.17	0.000	Flrt1	FLRT1
-1.17	0.000	Ldlrad3	LDLRAD3

ACCEPTED MANUSCRIPT

-1.17	0.000	Epb41l4b	EPB41L4B
-1.17	0.000	Xpo7	XPO7
-1.17	0.000	Arhgef26	ARHGEF26
-1.17	0.000	Apcdd1	APCDD1
-1.17	0.002	Pde4dip	PDE4DIP
-1.17	0.000	Senp6	SENP6
-1.17	0.000	Mettl7a1	METTL7A
-1.17	0.000	Neo1	NEO1
-1.17	0.000	Tmem64	TMEM64
-1.17	0.000	Fzd2	FZD2
-1.17	0.000	Tmem177	TMEM177
-1.17	0.000	Trabd2b	TRABD2B
-1.17	0.002	Tenm2	TENM2
-1.17	0.001	Smtnl2	SMTNL2
-1.18	0.000	Abat	ABAT
-1.18	0.004	Ampd1	AMPD1
-1.18	0.000	Col8a2	COL8A2
-1.18	0.000	Acer2	ACER2
-1.18	0.000	Ovol2	OVOL2
-1.18	0.000	Svip	SVIP
-1.18	0.001	Fmo5	FMO5
-1.18	0.000	Fabp4	FABP4
-1.18	0.001	Prtn3	PRTN3
-1.18	0.000	Tfap2b	TFAP2B
-1.18	0.000	Ccnd2	CCND2
-1.18	0.001	Diras2	DIRAS2
-1.18	0.000	Gstm7	GSTM2
-1.18	0.000	Ptn	PTN
-1.18	0.000	Snap91	SNAP91
-1.19	0.000	Gfra2	GFRA2
-1.19	0.000	Lgr5	LGR5
-1.19	0.000	Hspb1	HSPB1
-1.19	0.000	Fzd7	FZD7
-1.19	0.002	Sardh	SARDH
-1.19	0.006	St8sia6	ST8SIA6
-1.19	0.001	Cdh4	CDH4
-1.19	0.000	Abcc9	ABCC9
-1.19	0.000	Cyp2d22	CYP2D6
-1.19	0.000	Cyp2d22	CYP2D7
-1.19	0.000	Cachd1	CACHD1
-1.19	0.001	Scn4b	SCN4B
-1.19	0.000	Kcna2	KCNA2
-1.19	0.000	Camsap3	CAMSAP3
-1.19	0.000	Hspb1	HSPB1
-1.19	0.011	Hepacam2	HEPACAM2
-1.19	0.000	D7Ertd443e	C10orf90
-1.19	0.000	Zfp950	NA
-1.19	0.020	Trpm1	TRPM1
-1.19	0.000	Zfp612	NA
-1.19	0.002	Ppp1r1a	PPP1R1A
-1.19	0.000	Pard3b	PARD3B
-1.19	0.028	Heyl	HEYL
-1.20	0.000	Kif21a	KIF21A
-1.20	0.000	Fam117a	FAM117A
-1.20	0.000	Hoxa3	HOXA3
-1.20	0.000	Gnas	GNAS
-1.20	0.012	Fgf18	FGF18
-1.20	0.000	Rdx	RDX
-1.20	0.000	Ptprk	PTPRK
-1.20	0.000	Gpc3	GPC3
-1.20	0.007	Fam101a	FAM101A
-1.20	0.007	Fam101a	FAM101A
-1.20	0.000	Gprin3	GPRIN3
-1.20	0.000	Dusp8	DUSP8
-1.20	0.000	Adcy5	ADCY5
-1.20	0.000	BC034902	ANKEF1
-1.20	0.000	Vldlr	VLDLR
-1.20	0.000	Gpm6a	GPM6A

ACCEPTED MANUSCRIPT

-1.20	0.000	Rapgef3	RAPGEF3
-1.20	0.000	Abtb2	ABTB2
-1.20	0.005	Wif1	WIF1
-1.20	0.001	Pappa	PAPPA
-1.21	0.000	Mylk	MYLK
-1.21	0.027	Xlr3a	NA
-1.21	0.000	Sntb1	SNTB1
-1.21	0.000	Sbspon	SBSPON
-1.21	0.001	1110002E22Rik	
-1.21	0.000	Drp2	DRP2
-1.21	0.000	Adhfe1	ADHFE1
-1.21	0.000	Cxcl14	CXCL14
-1.21	0.001	Sp6	SP6
-1.21	0.000	Plcxd2	PLCXD2
-1.21	0.000	Adcy9	ADCY9
-1.22	0.000	Ablim3	ABLIM3
-1.22	0.000	Borcs7	BORCS7
-1.22	0.000	Borcs7	BORCS7-AS
-1.22	0.000	Perm1	PERM1
-1.22	0.000	Plekha4	PLEKHA4
-1.22	0.017	Il31ra	IL31RA
-1.22	0.015	Krt75	KRT75
-1.22	0.000	Mical3	NA
-1.22	0.000	Igfbp5	IGFBP5
-1.22	0.000	Zcchc3	ZCCHC3
-1.22	0.000	Prlr	PRLR
-1.22	0.000	Paqr5	PAQR5
-1.22	0.000	Sox9	SOX9
-1.22	0.000	Plxna2	PLXNA2
-1.22	0.007	Cd209a	NA
-1.22	0.026	Tslp	TSLP
-1.22	0.000	Gm13306	CCL27
-1.22	0.000	Pfn2	PFN2
-1.22	0.000	Dmpk	DMPK
-1.22	0.000	Scml2	SCML2
-1.23	0.000	Id4	ID4
-1.23	0.001	Syt17	SYT17
-1.23	0.000	Tgfb2	TGFB2
-1.23	0.000	S100b	S100B
-1.23	0.000	Tspan12	TSPAN12
-1.23	0.001	Cyp2s1	CYP2S1
-1.23	0.000	Sulf2	SULF2
-1.23	0.000	Gk5	GK5
-1.23	0.001	Prdm8	PRDM8
-1.23	0.000	Nuak1	NUAK1
-1.23	0.000	Rab6b	RAB6B
-1.23	0.000	Plac9a	PLAC9
-1.23	0.000	Zfp160	ZNF160
-1.23	0.000	Zfp160	ZNF665
-1.23	0.000	Pcolce2	PCOLCE2
-1.23	0.014	Trpm1	TRPM1
-1.23	0.000	Plxna2	PLXNA2
-1.23	0.000	Krba1	KRBA1
-1.24	0.000	Hecw2	HECW2
-1.24	0.000	Cbs	CBSL
-1.24	0.000	Cbs	CBS
-1.24	0.000	Irs1	IRS1
-1.24	0.007	Galnt15	GALNT15
-1.24	0.001	Myom2	MYOM2
-1.24	0.035	Zfp618	ZNF618
-1.24	0.000	Ephx1	EPHX1
-1.24	0.000	Bmp6	BMP6
-1.24	0.002	Cpt1b	CPT1B
-1.24	0.000	Bcl7a	BCL7A
-1.24	0.000	Gpha2	GPHA2
-1.24	0.000	Fam57b	FAM57B
-1.24	0.000	Sbspon	SBSPON
-1.25	0.000	Rgmb	RGMB

ACCEPTED MANUSCRIPT

-1.25	0.000	Plp1	PLP1
-1.25	0.000	1110059G0	SNTB1
-1.25	0.001	Tmem132c	TMEM132C
-1.25	0.000	Dpyd	DPYD
-1.25	0.035	Trpm1	TRPM1
-1.25	0.001	A4gnt	A4GNT
-1.25	0.000	Dpp4	DPP4
-1.25	0.000	Bach2	BACH2
-1.25	0.000	Pcdh7	PCDH7
-1.25	0.000	Dapl1	DAPL1
-1.26	0.000	Tra2a	TRA2A
-1.26	0.000	1500017E2	NA
-1.26	0.045	Stra6	STRA6
-1.26	0.000	Dach1	DACH1
-1.26	0.000	Omd	OMD
-1.26	0.000	Sntb1	SNTB1
-1.26	0.000	Alcam	ALCAM
-1.26	0.000	Nfib	NFIB
-1.26	0.001	Wnt5a	WNT5A
-1.26	0.000	Aldh6a1	ALDH6A1
-1.26	0.000	Arhgap24	ARHGAP24
-1.26	0.001	1110002E22	Rik
-1.26	0.014	Msi1	MSI1
-1.26	0.000	Meis1	MEIS1
-1.26	0.005	Bmp8a	BMP8B
-1.26	0.005	Bmp8a	BMP8A
-1.26	0.000	Zkscan3	ZKSCAN4
-1.26	0.000	Tnik	TNIK
-1.26	0.000	Zbtb20	ZBTB20
-1.27	0.000	Phyhip	PHYHIP
-1.27	0.014	Mylk4	MYLK4
-1.27	0.003	Klhl24	KLHL24
-1.27	0.000	Agpat5	AGPAT5
-1.27	0.001	Fer1l6	FER1L6
-1.27	0.001	Krt24	KRT24
-1.27	0.008	Zfp618	ZNF618
-1.27	0.000	Tgfb2	TGFB2
-1.27	0.000	Hspb1	HSPB1
-1.27	0.000	Gpc6	GPC6
-1.27	0.000	Prlr	PRLR
-1.27	0.000	Rgmb	RGMB
-1.27	0.000	Sntb1	SNTB1
-1.27	0.001	Slc22a4	SLC22A4
-1.27	0.000	Rabl6	
-1.27	0.000	Rabl6	RABL6
-1.27	0.000	Nlrp10	NLRP10
-1.27	0.000	Osbpl6	OSBPL6
-1.27	0.000	Abce1	ABCE1
-1.27	0.000	Agt	AGT
-1.27	0.000	Pclo	PCLO
-1.27	0.000	Gipc2	GIPC2
-1.28	0.008	Dlx3	DLX3
-1.28	0.000	Tmem64	TMEM64
-1.28	0.009	Trpv6	TRPV6
-1.28	0.000	Hspa2	HSPA2
-1.28	0.001	Ctxn3	CTXN3
-1.28	0.000	Mprip	MPRIP
-1.28	0.000	Sspn	SSPN
-1.28	0.000	Cyp2f2	CYP2F1
-1.28	0.002	Sp6	SP6
-1.28	0.000	Negr1	NEGR1
-1.28	0.000	Ltbp3	LTBP3
-1.28	0.035	Slc5a5	SLC5A5
-1.28	0.000	Paqr6	PAQR6
-1.28	0.000	Hspb1	HSPB1
-1.29	0.045	Capn8	CAPN8
-1.29	0.001	Entpd2	ENTPD2
-1.29	0.019	Hunk	HUNK

ACCEPTED MANUSCRIPT

-1.29	0.000	Gabbr1	GABBR1
-1.29	0.000	Mettl7a1	METTL7A
-1.29	0.000	Abtb2	ABTB2
-1.29	0.000	Smco3	SMCO3
-1.29	0.001	Prkaa2	PRKAA2
-1.29	0.000	Arxes2	SPCS3
-1.29	0.000	Igfbp3	IGFBP3
-1.30	0.000	Slc45a3	SLC45A3
-1.30	0.000	Fam101b	FAM101B
-1.30	0.000	Kcnma1	KCNMA1
-1.30	0.000	Klhl23	KLHL23
-1.30	0.000	Klhl23	KLHL23
-1.30	0.000	Tppp	TPPP
-1.30	0.014	Pamr1	PAMR1
-1.31	0.000	Hsd17b13	HSD17B13
-1.31	0.000	Hlf	HLF
-1.31	0.000	Ppargc1a	PPARGC1A
-1.31	0.003	Unc5b	UNC5B
-1.31	0.000	Mal	MAL
-1.31	0.000	Ttn	TTN
-1.31	0.000	Pcdh7	PCDH7
-1.31	0.001	Ppp1r9a	PPP1R9A
-1.31	0.000	Atp1a2	ATP1A2
-1.31	0.000	Arhgap44	ARHGAP44
-1.31	0.000	6430571L13	C3orf18
-1.31	0.000	Igfbp3	IGFBP3
-1.31	0.000	Slc38a3	SLC38A3
-1.31	0.000	Rerg	RERG
-1.31	0.002	Krtap5-1	NA
-1.32	0.000	Id4	ID4
-1.32	0.005	Sult1a1	SULT1A1
-1.32	0.005	Sult1a1	SULT1A4
-1.32	0.005	Sult1a1	SULT1A2
-1.32	0.005	Sult1a1	SULT1A3
-1.32	0.005	Sult1a1	SULT1A4
-1.32	0.005	Sult1a1	SULT1A3
-1.32	0.000	Tfap2b	TFAP2B
-1.32	0.001	Paqr7	PAQR7
-1.32	0.000	Tmem246	TMEM246
-1.32	0.000	Hoxb3	HOXB3
-1.32	0.001	Ptger3	PTGER3
-1.32	0.000	Chrdl1	CHRDL1
-1.32	0.000	Dcun1d5	DCUN1D5
-1.32	0.001	Mbp	MBP
-1.32	0.000	Selenbp1	SELENBP1
-1.32	0.000	Mlf1	MLF1
-1.32	0.000	Pard3b	PARD3B
-1.32	0.000	Trpc3	TRPC3
-1.32	0.000	Pax3	PAX3
-1.33	0.000	Ppara	PPARA
-1.33	0.001	Ccdc3	CCDC3
-1.33	0.000	Kirrel	KIRREL
-1.33	0.000	Tshr	TSHR
-1.33	0.000	Sox4	SOX4
-1.33	0.000	Adgra2	ADGRA3
-1.33	0.001	A930009A1	NA
-1.34	0.000	Actg2	ACTG2
-1.34	0.000	Chrdl1	CHRDL1
-1.34	0.000	Tmem229a	TMEM229A
-1.34	0.000	Fam57b	FAM57B
-1.34	0.000	Gdf10	GDF10
-1.34	0.000	Sowaha	SOWAHA
-1.34	0.011	Lef1	LEF1
-1.35	0.000	Tmtc1	TMTC1
-1.35	0.029	Cd209b	CLEC4M
-1.35	0.029	Cd209b	CD209
-1.35	0.000	Nt5e	NT5E
-1.35	0.000	Ell3	ELL3

ACCEPTED MANUSCRIPT

-1.35	0.000	Peli2	PELI2
-1.35	0.000	Adhfe1	ADHFE1
-1.35	0.000	Srr	SRR
-1.35	0.000	Aox1	AOX1
-1.35	0.000	Sema3e	SEMA3E
-1.35	0.000	Ldb3	LDB3
-1.35	0.000	Zfp462	ZNF462
-1.35	0.000	Dusp18	DUSP18
-1.35	0.000	Pkp2	PKP2
-1.36	0.000	Ntrk2	NTRK2
-1.36	0.000	Kera	KERA
-1.36	0.000	Selenbp2	SELENBP1
-1.36	0.000	Scmh1	SCMH1
-1.36	0.001	Cys1	CYS1
-1.36	0.000	Slc7a10	SLC7A10
-1.36	0.000	Slc5a3	SLC5A3
-1.36	0.000	Dixdc1	DIXDC1
-1.36	0.000	Txlnb	TXLNB
-1.36	0.000	Echdc3	ECHDC3
-1.36	0.040	Otop2	OTOP2
-1.36	0.000	2900076A0	NA
-1.36	0.000	Shisa2	SHISA2
-1.36	0.000	Zfp560	NA
-1.37	0.000	Hcar1	HCAR1
-1.37	0.001	Dkk2	DKK2
-1.37	0.000	Pkp2	PKP2
-1.37	0.000	Ypel4	YPEL4
-1.37	0.000	Abhd3	ABHD3
-1.37	0.000	Slc5a3	SLC5A3
-1.37	0.040	Mc1r	MC1R
-1.37	0.000	Adam33	ADAM33
-1.37	0.000	Vldlr	VLDLR
-1.38	0.020	Tyr	TYR
-1.38	0.001	Fbp2	FBP2
-1.38	0.000	Abcc9	ABCC9
-1.38	0.002	Krtap5-1	NA
-1.38	0.000	Vat1l	VAT1L
-1.39	0.001	Fmod	FMOD
-1.39	0.000	Adgrg2	ADGRG2
-1.39	0.000	Rbmx	RBMX
-1.39	0.000	Gprin3	GPRIN3
-1.39	0.000	Ldb3	LDB3
-1.39	0.000	Tenm2	TENM2
-1.39	0.001	Dpyd	DPYD
-1.39	0.000	Aff3	AFF3
-1.39	0.032	Kalrn	KALRN
-1.39	0.009	Col11a1	COL11A1
-1.39	0.000	Ttn	TTN
-1.40	0.000	Zfr2	ZFR2
-1.40	0.000	Ednrb	EDNRB
-1.40	0.000	Klf15	KLF15
-1.40	0.000	Ldah	LDAH
-1.40	0.000	Angptl1	ANGPTL1
-1.40	0.000	Myl9	MYL9
-1.40	0.000	Cttnbp2	CTTNBP2
-1.40	0.008	Adamts18	ADAMTS18
-1.40	0.006	Ear2	RNASE2
-1.40	0.006	Ear2	RNASE3
-1.40	0.000	Osbpl6	OSBPL6
-1.40	0.000	Ivd	IVD
-1.40	0.000	Tmem64	TMEM64
-1.40	0.000	Peg3	PEG3
-1.41	0.001	Slco2b1	SLCO2B1
-1.41	0.000	Igfbp4	IGFBP4
-1.41	0.009	C6	C6
-1.41	0.000	Cplx2	CPLX2
-1.41	0.000	Trim2	TRIM2
-1.41	0.000	Prrg3	PRRG3

ACCEPTED MANUSCRIPT

-1.41	0.000	Mturn	MTURN
-1.42	0.000	Wnk2	WNK2
-1.42	0.000	Arhgef15	ARHGEF15
-1.42	0.000	Dmd	DMD
-1.42	0.000	Notum	NOTUM
-1.42	0.000	Slc2a4	SLC2A4
-1.42	0.000	B3galt2	B3GALT2
-1.42	0.000	Mpz	MPZ
-1.42	0.003	Nkd2	NKD2
-1.42	0.000	Lepr	LEPR
-1.42	0.001	Synpo2	SYNPO2
-1.42	0.004	Lef1	LEF1
-1.43	0.003	St8sia6	ST8SIA6
-1.43	0.010	Col11a1	COL11A1
-1.43	0.000	Sox10	SOX10
-1.43	0.009	Aqp4	AQP4
-1.43	0.001	Mbp	MBP
-1.43	0.000	Syngr1	SYNGR1
-1.43	0.038	Krtap4-13	NA
-1.43	0.003	Rnase2a	RNASE3
-1.43	0.003	Rnase2a	RNASE2
-1.43	0.000	Ror2	ROR2
-1.43	0.000	Zfp704	ZNF704
-1.43	0.000	Rgmb	RGMB
-1.44	0.003	Ccl24	CCL24
-1.44	0.001	Fam26e	FAM26E
-1.44	0.000	Cfap57	CFAP57
-1.44	0.000	Tril	TRIL
-1.44	0.000	Thsd1	THSD1
-1.44	0.000	Ism1	ISM1
-1.44	0.001	St8sia6	ST8SIA6
-1.44	0.000	Sorbs1	SORBS1
-1.44	0.000	Fam198b	FAM198B
-1.44	0.000	Igfbp4	IGFBP4
-1.44	0.000	Nyap1	NYAP1
-1.44	0.000	Ttc9	TTC9
-1.44	0.000	Arhgef28	ARHGEF28
-1.45	0.000	Pdk4	PDK4
-1.45	0.000	Micu1	MICU1
-1.45	0.000	Plekhg3	PLEKHG3
-1.45	0.000	Txlnb	TXLNB
-1.45	0.000	Cldn10	CLDN10
-1.45	0.000	Pck1	PCK1
-1.45	0.000	Sorbs1	SORBS1
-1.45	0.006	Ptch2	PTCH2
-1.45	0.000	Tnfrsf11b	TNFRSF11B
-1.45	0.000	Cgn	CGN
-1.45	0.000	Zfp827	ZNF827
-1.45	0.000	G0s2	G0S2
-1.46	0.025	Dlx4	DLX4
-1.46	0.001	Padi4	PADI4
-1.46	0.000	Kcnk2	KCNK2
-1.46	0.000	Wdr47	WDR47
-1.46	0.000	Hsd17b14	HSD17B14
-1.46	0.000	Mettl7a1	METTL7A
-1.46	0.000	Bach2	BACH2
-1.46	0.010	Dclk3	DCLK3
-1.46	0.043	Stox1	STOX1
-1.46	0.000	Dusp8	DUSP8
-1.46	0.028	Bhlha9	BHLHA9
-1.46	0.000	Gli2	GLI2
-1.46	0.000	Nfib	NFIB
-1.46	0.034	Slc45a2	SLC45A2
-1.46	0.011	Edn2	EDN2
-1.46	0.000	Klb	KLB
-1.46	0.000	Pax3	PAX3
-1.46	0.016	Lyve1	LYVE1
-1.46	0.000	Enpp1	ENPP1

ACCEPTED MANUSCRIPT

-1.46	0.000	Kcna1	KCNA1
-1.46	0.000	Rab11fip4	RAB11FIP4
-1.47	0.009	Lyve1	LYVE1
-1.47	0.000	Cobl	COBL
-1.47	0.000	Kcna2	KCNA2
-1.47	0.000	Igfbp4	IGFBP4
-1.47	0.000	Scara5	SCARA5
-1.47	0.000	Sh3d19	SH3D19
-1.48	0.002	Opcml	OPCML
-1.48	0.000	Adcy1	ADCY1
-1.48	0.000	Zbtb16	ZBTB16
-1.48	0.000	Fzd3	FZD3
-1.48	0.036	Greb1	GREB1
-1.48	0.000	Micu1	MICU1
-1.48	0.036	Corin	CORIN
-1.49	0.000	Plekhb1	PLEKHB1
-1.49	0.000	Npr3	NPR3
-1.49	0.000	Rai14	RAI14
-1.49	0.000	Spock2	SPOCK2
-1.49	0.025	Tgm6	TGM6
-1.50	0.000	Cldn3	CLDN3
-1.51	0.000	Abca5	ABCA5
-1.51	0.000	Plin4	PLIN4
-1.51	0.000	Lepr	LEPR
-1.51	0.000	Fzd3	FZD3
-1.51	0.000	Pnkd	PNKD
-1.52	0.000	Ltbp3	LTBP3
-1.52	0.000	1700029J07	C4orf47
-1.52	0.000	Tmem132c	TMEM132C
-1.52	0.000	Rab11fip4	RAB11FIP4
-1.52	0.000	Sorbs1	SORBS1
-1.52	0.000	Bmp2	BMP2
-1.52	0.035	Crp	CRP
-1.53	0.000	Timp3	TIMP3
-1.53	0.050	Kcnk16	KCNK16
-1.53	0.000	Otud1	OTUD1
-1.53	0.001	Edar	EDAR
-1.53	0.000	Tmem88b	TMEM88B
-1.53	0.000	Dab1	DAB1
-1.53	0.000	Mbp	MBP
-1.53	0.000	Dnajc6	DNAJC6
-1.54	0.000	Shisa2	SHISA2
-1.54	0.000	Cdh19	CDH19
-1.54	0.000	4933431E20	NA
-1.54	0.000	Fmod	FMOD
-1.54	0.000	Ddit4l	DDIT4L
-1.54	0.037	Crisp1	NA
-1.54	0.000	Thsd1	THSD1
-1.54	0.001	Fmod	FMOD
-1.54	0.000	Lor	NA
-1.54	0.001	Hmgcs2	HMGCS2
-1.54	0.000	Sncg	SNCG
-1.54	0.000	Adipoq	ADIPOQ
-1.55	0.000	Dmd	DMD
-1.55	0.000	9330159F19	KIAA0408
-1.55	0.000	Nkd2	NKD2
-1.55	0.000	Nav2	NAV2
-1.55	0.000	B3galt2	B3GALT2
-1.55	0.000	Chsy3	CHSY3
-1.55	0.000	Ces1d	CES1
-1.56	0.000	Hmcn1	HMCN1
-1.56	0.024	Krtap12-1	KRTAP12-1
-1.56	0.024	Krtap12-1	KRTAP12-2
-1.56	0.024	Krtap12-1	KRTAP12-3
-1.56	0.002	Pthlh	PTHLH
-1.56	0.000	Plxna2	PLXNA2
-1.56	0.000	Gm11627	NA
-1.57	0.000	Gsta3	NA

ACCEPTED MANUSCRIPT

-1.57	0.000	Arhgef28	ARHGEF28
-1.57	0.000	Ddit4l	DDIT4L
-1.57	0.000	Timp3	TIMP3
-1.57	0.000	Mc2r	MC2R
-1.57	0.000	Sdk2	SDK2
-1.57	0.000	Sptbn1	SPTBN1
-1.57	0.000	Ptpn21	PTPN21
-1.57	0.000	Slc25a27	SLC25A27
-1.58	0.000	Bnc2	BNC2
-1.58	0.000	Rbm20	RBM20
-1.58	0.024	Vsig8	VSIG8
-1.58	0.000	Timp3	TIMP3
-1.59	0.004	Ear3	RNASE2
-1.59	0.004	Ear3	RNASE3
-1.59	0.000	B3galt2	B3GALT2
-1.59	0.004	Slc6a19	SLC6A19
-1.59	0.000	Slc2a12	SLC2A12
-1.59	0.000	Ntrk3	NTRK3
-1.59	0.000	Wnt5a	WNT5A
-1.59	0.029	Krtap5-3	NA
-1.59	0.000	Fabp4	FABP4
-1.60	0.000	Nos1	NOS1
-1.60	0.000	Sema3d	SEMA3D
-1.60	0.031	Bambi	BAMBI
-1.60	0.000	Ltbp4	LTBP4
-1.60	0.036	Gpr143	GPR143
-1.60	0.000	Rasl11b	RASL11B
-1.61	0.000	Arhgap20	ARHGAP20
-1.61	0.019	Pmel	PMEL
-1.61	0.000	Bco1	BCO1
-1.61	0.001	Slc6a19	SLC6A19
-1.61	0.000	Fmod	FMOD
-1.61	0.000	Aldh1a7	ALDH1A1
-1.61	0.000	Klhl29	KLHL29
-1.61	0.000	Npr3	NPR3
-1.61	0.000	Eya1	EYA1
-1.61	0.007	Pm20d1	PM20D1
-1.62	0.000	Dab1	DAB1
-1.62	0.000	Fbxo32	FBXO32
-1.62	0.000	Ttc9	TTC9
-1.62	0.000	Rgmb	RGMB
-1.63	0.000	Amy1	AMY2B
-1.63	0.000	Amy1	AMY1C
-1.63	0.000	Amy1	AMY1B
-1.63	0.000	Amy1	AMY2A
-1.63	0.000	Amy1	AMY1A
-1.63	0.000	Paqr8	PAQR8
-1.63	0.002	Scube3	SCUBE3
-1.63	0.045	Sptssb	SPTSSB
-1.63	0.000	Ptpn14	PTPN14
-1.64	0.000	Flrt1	FLRT1
-1.64	0.000	Dhtkd1	DHTKD1
-1.64	0.000	Krt77	KRT77
-1.65	0.000	Mlxipl	MLXIPL
-1.65	0.000	Bmp4	BMP4
-1.65	0.000	Kif21a	KIF21A
-1.65	0.001	Tbx1	TBX1
-1.65	0.000	Igfbp4	IGFBP4
-1.65	0.000	Ppp1r3c	PPP1R3C
-1.65	0.000	Wfdc21	NA
-1.65	0.000	Btnl9	BTNL9
-1.65	0.000	Cldn23	CLDN23
-1.66	0.000	Trim2	TRIM2
-1.66	0.000	Trp53	TP53
-1.66	0.000	Wnk4	WNK4
-1.66	0.000	Cpxm2	CPXM2
-1.67	0.007	Golga7b	GOLGA7B
-1.67	0.000	Trim2	TRIM2

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

-1.67	0.000	Upb1	UPB1
-1.67	0.000	Mbp	MBP
-1.68	0.001	Slc9a2	SLC9A2
-1.68	0.003	Kalrn	KALRN
-1.68	0.000	Krt23	KRT23
-1.68	0.000	Pard3b	PARD3B
-1.69	0.000	Gli1	GLI1
-1.69	0.000	Mme	MME
-1.69	0.007	Golga7b	GOLGA7B
-1.69	0.000	Tesc	TESC
-1.69	0.000	Aff3	AFF3
-1.70	0.000	Bnc2	BNC2
-1.70	0.000	Gli2	GLI2
-1.71	0.000	Cxcl14	CXCL14
-1.71	0.000	Fmod	FMOD
-1.71	0.001	Ptprg	PTPRG
-1.71	0.000	Kcnj16	KCNJ16
-1.72	0.003	Msx1	MSX1
-1.72	0.003	Cyp2g1	NA
-1.72	0.000	Mbp	MBP
-1.72	0.000	Paqr8	PAQR8
-1.72	0.000	Trim2	TRIM2
-1.73	0.000	Ednrb	EDNRB
-1.74	0.000	Slco2b1	SLCO2B1
-1.74	0.000	Tnmd	TNMD
-1.74	0.000	Hs3st6	HS3ST6
-1.75	0.000	Peli2	PELI2
-1.76	0.000	Vit	VIT
-1.77	0.001	Krtap3-2	KRTAP3-2
-1.77	0.001	Krtap3-2	KRTAP3-3
-1.77	0.000	Lor	NA
-1.77	0.000	Ppp1r3c	PPP1R3C
-1.77	0.000	Mycl	MYCL
-1.77	0.000	Tpm1	TPM1
-1.77	0.000	Kcna1	KCNA1
-1.79	0.000	Aoc3	AOC3
-1.79	0.002	Ear3	RNASE2
-1.79	0.002	Ear3	RNASE3
-1.79	0.000	Kcna1	KCNA1
-1.79	0.000	Cdo1	CDO1
-1.79	0.000	Timp4	TIMP4
-1.80	0.000	Ces1d	CES1
-1.80	0.000	Rbp4	RBP4
-1.80	0.000	Prima1	PRIMA1
-1.80	0.000	Bnc2	BNC2
-1.81	0.000	Gan	GAN
-1.81	0.033	Pon1	PON1
-1.82	0.001	Wnt5a	WNT5A
-1.82	0.000	Cpxm2	CPXM2
-1.82	0.024	Csdc2	CSDC2
-1.83	0.004	Fcna	NA
-1.83	0.010	Cyp2e1	CYP2E1
-1.83	0.000	Aldh1a2	ALDH1A2
-1.84	0.000	Ntrk3	NTRK3
-1.85	0.000	Paqr8	PAQR8
-1.85	0.001	Rhpn2	RHPN2
-1.85	0.000	Kank4	KANK4
-1.87	0.023	Gnmt	GNMT
-1.87	0.001	Rhpn2	RHPN2
-1.87	0.000	Mamdc2	MAMDC2
-1.87	0.035	Oca2	OCA2
-1.88	0.000	Tesc	TESC
-1.89	0.001	Opcml	OPCML
-1.89	0.012	Syt4	SYT4
-1.89	0.000	Dnajc6	DNAJC6
-1.89	0.000	Glb1l2	GLB1L2
-1.89	0.000	Acvr1c	ACVR1C
-1.90	0.011	Fgf5	FGF5

ACCEPTED MANUSCRIPT

-1.90	0.000	Ptpn21	PTPN21
-1.91	0.000	Ces1d	CES1
-1.91	0.000	Lgals12	LGALS12
-1.92	0.000	Tet1	TET1
-1.92	0.000	Fbxo32	FBXO32
-1.92	0.000	Ccbl1	CCBL1
-1.92	0.000	Fbxo32	FBXO32
-1.93	0.000	Oxtr	OXTR
-1.93	0.000	Ppp1r27	PPP1R27
-1.94	0.000	Slc6a2	SLC6A2
-1.94	0.000	Sema3d	SEMA3D
-1.95	0.023	Tyr	TYR
-1.95	0.000	Hmgcs2	HMGCS2
-1.96	0.001	Mcoln3	MCOLN3
-1.97	0.000	Angptl1	ANGPTL1
-1.98	0.000	Trim2	TRIM2
-2.00	0.000	Rbm3	RBM3
-2.00	0.000	Adrb3	ADRB3
-2.01	0.000	Col4a5	COL4A5
-2.02	0.000	Fmod	FMOD
-2.02	0.000	Btnl9	BTNL9
-2.02	0.001	Ephb1	EPHB1
-2.02	0.000	Camk2n1	CAMK2N1
-2.03	0.000	Ces1f	CES1
-2.03	0.000	Col4a6	COL4A6
-2.03	0.000	Pvrl3	PVRL3
-2.04	0.023	Adamts20	ADAMTS20
-2.04	0.000	Efhd1	EFHD1
-2.04	0.004	Syt4	SYT4
-2.05	0.035	Gja3	GJA3
-2.05	0.000	Itga8	ITGA8
-2.05	0.000	Tshr	TSHR
-2.06	0.000	Dab1	DAB1
-2.07	0.000	Trim2	TRIM2
-2.08	0.000	Fmo2	FMO2
-2.09	0.001	Rnf182	RNF182
-2.09	0.000	Acvr1c	ACVR1C
-2.09	0.001	Fhod3	FHOD3
-2.09	0.000	Akr1cl	AKR1C1
-2.09	0.000	Akr1cl	AKR1C2
-2.09	0.000	Akr1cl	
-2.09	0.000	Akr1cl	AKR1C4
-2.09	0.000	Akr1cl	AKR1C3
-2.10	0.026	D730001G1	NA
-2.10	0.000	Cidec	CIDEC
-2.11	0.000	Tril	TRIL
-2.11	0.000	Frem2	FREM2
-2.12	0.000	Fabp4	FABP4
-2.15	0.000	Cldn8	CLDN8
-2.17	0.000	Paqr8	PAQR8
-2.17	0.000	Glb1l2	GLB1L2
-2.18	0.000	Slc24a3	SLC24A3
-2.19	0.014	Kcne1	
-2.19	0.014	Kcne1	KCNE1
-2.19	0.022	Trpm1	TRPM1
-2.20	0.000	Myh4	MYH4
-2.20	0.000	Timp3	TIMP3
-2.20	0.000	Svopl	SVOPL
-2.21	0.046	AU018091	NA
-2.21	0.000	Cacna2d3	CACNA2D3
-2.21	0.000	Fmo2	FMO2
-2.21	0.000	Abca5	ABCA5
-2.22	0.020	Cps1	CPS1
-2.22	0.000	Tmem35	TMEM35
-2.23	0.000	Abca8a	NA
-2.23	0.015	Krtap10-4	KRTAP10-1
-2.23	0.015	Krtap10-4	KRTAP10-7
-2.23	0.015	Krtap10-4	KRTAP10-5

ACCEPTED MANUSCRIPT

-2.23	0.015	Krtap10-4	KRTAP10-9
-2.23	0.015	Krtap10-4	KRTAP10-1
-2.23	0.015	Krtap10-4	KRTAP10-4
-2.23	0.015	Krtap10-4	KRTAP10-6
-2.23	0.015	Krtap10-4	KRTAP10-1
-2.23	0.015	Krtap10-4	KRTAP10-2
-2.23	0.015	Krtap10-4	KRTAP10-8
-2.23	0.015	Krtap10-4	KRTAP10-1
-2.23	0.015	Krtap10-4	KRTAP10-3
-2.24	0.000	Samd5	SAMD5
-2.24	0.000	Adgra2	ADGRA3
-2.24	0.000	Col4a5	COL4A5
-2.25	0.010	Msx2	MSX2
-2.26	0.000	Pyy	PYY
-2.27	0.000	Fmo2	FMO2
-2.30	0.003	Pm20d1	PM20D1
-2.30	0.000	Dab1	DAB1
-2.31	0.000	Mgl2	NA
-2.31	0.001	Cybrd1	CYBRD1
-2.31	0.000	Kcnj16	KCNJ16
-2.32	0.000	Col4a6	COL4A6
-2.32	0.001	Hoxc13	HOXC13
-2.32	0.000	Lhx2	LHX2
-2.33	0.000	Fmo2	FMO2
-2.34	0.000	Serpinb6e	NA
-2.34	0.008	Krtap4-6	NA
-2.35	0.000	Cbs	CBSL
-2.35	0.000	Cbs	CBS
-2.35	0.000	Tmem229a	TMEM229A
-2.40	0.000	Lep	LEP
-2.41	0.011	Ly6g6d	LY6G6D
-2.41	0.043	Fbp1	FBP1
-2.41	0.000	Scd3	SCD
-2.42	0.000	Pvrl3	PVRL3
-2.42	0.000	Tmem229a	TMEM229A
-2.45	0.000	Egfl6	EGFL6
-2.51	0.011	Krtap3-1	KRTAP3-1
-2.51	0.002	Dlx2	DLX2
-2.52	0.000	Pvrl3	PVRL3
-2.53	0.000	Btc	BTC
-2.54	0.000	Inmt	INMT
-2.54	0.000	Inmt	INMT-FAM1
-2.55	0.009	5430421N2	KRT86
-2.55	0.009	5430421N2	KRT81
-2.55	0.009	5430421N2	KRT83
-2.59	0.006	Shh	SHH
-2.62	0.012	Krt82	KRT82
-2.63	0.000	Paqr7	PAQR7
-2.64	0.000	Enpep	ENPEP
-2.64	0.000	Carns1	CARNS1
-2.68	0.000	Npr3	NPR3
-2.68	0.001	Ptgds	PTGDS
-2.68	0.001	Hamp	HAMP
-2.68	0.000	Pvrl3	PVRL3
-2.71	0.000	Arhgap20	ARHGAP20
-2.75	0.009	Capn8	CAPN8
-2.77	0.007	Krtap12-1	KRTAP12-1
-2.77	0.007	Krtap12-1	KRTAP12-2
-2.77	0.007	Krtap12-1	KRTAP12-3
-2.78	0.007	Krtap5-4	NA
-2.78	0.000	Pck1	PCK1
-2.80	0.007	Krtap5-5	NA
-2.81	0.002	Hamp	HAMP
-2.85	0.009	Gm11567	KRTAP9-1
-2.86	0.000	Serpina12	SERPINA12
-2.86	0.000	Mycn	NA
-2.86	0.005	Krtap21-1	NA
-2.88	0.000	Gng4	GNG4

ACCEPTED MANUSCRIPT

-2.88	0.010	Gm11563	NA
-2.88	0.000	Apcdd1	APCDD1
-2.88	0.007	Krtap6-2	NA
-2.88	0.000	Krt32	KRT32
-2.90	0.000	Ptgds	PTGDS
-2.90	0.000	Dct	DCT
-2.90	0.010	Krtap31-1	NA
-2.91	0.000	Gng4	GNG4
-2.92	0.000	Btc	BTC
-2.97	0.008	Krtap13-1	KRTAP13-2
-2.97	0.008	Krtap13-1	KRTAP13-1
-2.98	0.000	Scd3	SCD
-2.98	0.000	Il1f10	IL1F10
-3.00	0.000	Myoc	MYOC
-3.01	0.001	Gabrp	GABRP
-3.01	0.000	Tyrp1	TYRP1
-3.02	0.001	Gabrp	GABRP
-3.07	0.000	Tyrp1	TYRP1
-3.08	0.000	Gng13	GNG13
-3.08	0.000	Lce1m	NA
-3.09	0.023	Tchhl1	TCHHL1
-3.12	0.004	Krtap5-2	NA
-3.13	0.006	Krtap4-2	NA
-3.23	0.007	Krtap26-1	KRTAP26-1
-3.24	0.002	Mlana	MLANA
-3.28	0.006	Krt33b	KRT34
-3.28	0.006	Krt33b	KRT31
-3.28	0.006	Krt33b	KRT33A
-3.28	0.006	Krt33b	KRT33B
-3.29	0.001	Tyrp1	TYRP1
-3.30	0.001	Crym	CRYM
-3.35	0.013	Prr9	PRR9
-3.38	0.002	Tyr	TYR
-3.39	0.012	Krt35	KRT35
-3.40	0.005	Krt72	KRT72
-3.40	0.004	Krtap19-4	NA
-3.43	0.001	Tchh	TCHH
-3.43	0.006	Padi3	PADI3
-3.48	0.000	Cfap57	CFAP57
-3.58	0.006	Krtap4-16	KRTAP4-1
-3.63	0.004	S100a3	S100A3
-3.66	0.000	Scgb1a1	SCGB1A1
-3.68	0.004	Krt31	KRT33B
-3.68	0.004	Krt31	KRT33A
-3.68	0.004	Krt31	KRT31
-3.68	0.004	Krt31	KRT34
-3.69	0.004	Gprc5d	GPRC5D
-3.70	0.007	Lyg2	LYG2
-3.72	0.005	Krt86	KRT81
-3.72	0.005	Krt86	KRT86
-3.72	0.005	Krt86	KRT83
-3.80	0.004	Krtap28-13	NA
-3.81	0.005	Krt34	KRT33B
-3.81	0.005	Krt34	KRT33A
-3.81	0.005	Krt34	KRT34
-3.81	0.005	Krt34	KRT31
-3.82	0.003	Krt81	KRT81
-3.82	0.003	Krt81	KRT83
-3.82	0.003	Krt81	KRT86
-3.83	0.000	Retnla	RETNLB
-3.83	0.000	Nnat	NA
-3.91	0.003	Krtap4-7	NA
-3.92	0.004	Fam26d	FAM26D
-3.97	0.000	Krtap17-1	NA
-3.99	0.003	Gm11559	KRTAP9-1
-4.04	0.003	Krtap4-1	NA
-4.12	0.004	Krt26	NA
-4.21	0.003	Krtap9-3	KRTAP1-1

ACCEPTED MANUSCRIPT

-4.21	0.003	Krtap9-3	KRTAP1-3
-4.21	0.003	Krtap9-3	KRTAP1-5
-4.21	0.003	Krtap9-3	KRTAP1-4
-4.21	0.000	Krt28	KRT28
-4.26	0.002	Krtap19-9b	NA
-4.27	0.003	Krtap2-4	KRTAP2-3
-4.27	0.003	Krtap2-4	KRTAP2-2
-4.27	0.003	Krtap2-4	KRTAP2-1
-4.27	0.003	Krtap2-4	KRTAP2-4
-4.48	0.002	Krt73	KRT73
-4.48	0.002	Krtap14	NA
-4.51	0.000	Car6	CA6
-4.59	0.000	Serpina12	SERPINA12
-4.60	0.002	Krtap6-1	NA
-4.74	0.002	Krt71	KRT71
-4.79	0.002	Krt27	KRT27
-4.82	0.001	Krtap19-3	NA
-4.87	0.001	Krtap19-1	NA
-4.90	0.001	Krtap3-3	KRTAP3-2
-4.90	0.001	Krtap3-3	KRTAP3-3
-4.91	0.000	Krtap19-1	NA
-4.91	0.000	Krtap22-2	NA
-4.98	0.001	Krtap7-1	KRTAP7-1
-5.14	0.001	Krtap19-2	NA
-5.17	0.001	Krtap1-5	KRTAP1-4
-5.17	0.001	Krtap1-5	KRTAP1-5
-5.17	0.001	Krtap1-5	KRTAP1-3
-5.17	0.001	Krtap1-5	KRTAP1-1
-5.23	0.001	Krt33a	KRT34
-5.23	0.001	Krt33a	KRT31
-5.23	0.001	Krt33a	KRT33B
-5.23	0.001	Krt33a	KRT33A
-5.32	0.000	Mt4	MT4
-5.35	0.001	Krtap6-5	NA
-5.36	0.001	Krtap6-1	NA
-5.43	0.001	Krtap19-5	NA
-5.48	0.001	Krtap16-3	NA
-5.52	0.001	Krtap11-1	KRTAP11-1
-6.05	0.000	Gm10229	NA
-6.12	0.000	Krtap16-3	NA
-6.24	0.000	Krtap15	KRTAP15-1
-6.24	0.000	Krtap15	KRTAP15-1
-6.29	0.000	Krtap8-1	KRTAP8-1
-6.53	0.000	Krt25	KRT25
-6.68	0.000	Hamp2	NA

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

MAP5

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

:K1

A

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ɔC2

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

S

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

'P3A51P

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

\DORA2A

\

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

2G4B
2G4B

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

L

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ГMEFF1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

SMT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

0

2

.88B

!

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

Table E5: Combined DEGs in each mouse model by HGNC Symbol

Gene	Flaky-tail Log FCH	Flaky-tail BHadj P value	Flaky-tail Status	FLG Log FCH	FLG BHadj P value	FLG status	NC/Nga Log FCH	NC/Nga BHadj P value	NC/Nga Status	Ova Log FCH	Ova BHadj P value	Ova Status	Oxa Log FCH	Oxa BHadj P value	Oxa Status	IL-23 Log FCH	IL-23 BHadj P value	IL-23 Status
MC2R	0.00	0.995	0	0.14	0.827	0	-0.23	0.553	0	0.54	0.066	0	-0.29	0.441	0	-1.57	0.000	-1
ATXN7L1	-0.39	0.220	0	-0.14	0.752	0	-0.41	0.056	0	-0.22	0.349	0	0.28	0.114	0	1.46	0.000	1
CLDN8	0.03	0.971	0	0.35	0.557	0	-0.95	0.001	0	-0.82	0.004	0	-0.32	0.222	0	-2.15	0.000	-1
C1QB	-0.06	0.933	0	-0.22	0.674	0	1.62	0.002	1	1.26	0.150	0	0.48	0.031	0	0.66	0.065	0
SMPDL3B	0.73	0.015	0	-0.14	0.750	0	0.42	0.117	0	0.44	0.162	0	0.69	0.003	0	1.18	0.000	1
KIF20A	0.51	0.107	0	0.13	0.779	0	1.23	0.001	1	0.72	0.052	0	0.28	0.063	0	0.56	0.022	0
TTC39B	-0.11	0.771	0	0.14	0.702	0	-0.07	0.724	0	-0.02	0.946	0	0.30	0.055	0	1.18	0.000	1
LY6G6D	1.69	0.103	0	0.54	0.712	0	-0.05	0.952	0	-2.24	0.053	0	2.04	0.002	1	-2.41	0.011	-1
STAP1	0.78	0.005	0	0.52	0.100	0	-0.17	0.440	0	0.28	0.610	0	0.12	0.466	0	1.70	0.000	1
ALOX5AP	-0.09	0.812	0	-0.10	0.793	0	1.16	0.014	1	0.55	0.173	0	0.25	0.330	0	0.80	0.042	0
CHRNB4	-0.55	0.087	0	-0.01	0.991	0	-0.54	0.012	0	-1.78	0.021	-1	-0.35	0.147	0	-0.70	0.001	0
RBMX	-0.14	0.720	0	0.06	0.902	0	-0.22	0.168	0	0.11	0.711	0	0.12	0.599	0	-1.39	0.000	-1
MX1	-0.09	0.888	0	-0.05	0.938	0	0.00	0.994	0	0.25	0.742	0	2.91	0.000	1	1.14	0.015	1
NKAP	-0.06	0.890	0	0.16	0.680	0	-0.30	0.128	0	0.42	0.251	0	-0.34	0.054	0	1.16	0.000	1
CBLN1	0.19	0.633	0	0.04	0.944	0	1.39	0.052	0	-0.15	0.702	0	0.73	0.010	0	2.20	0.000	1
CXorf21	-0.53	0.286	0	0.13	0.858	0	0.47	0.518	0	0.64	0.050	0	0.40	0.145	0	1.84	0.000	1
IL18BP	-0.45	0.073	0	-0.09	0.815	0	0.01	0.969	0	-0.09	0.800	0	0.51	0.000	0	2.62	0.000	1
ADAMTS15	0.05	0.921	0	-0.16	0.711	0	1.12	0.003	1	0.79	0.115	0	0.47	0.034	0	0.93	0.008	0
SLC6A20	-0.49	0.055	0	-0.66	0.027	0	0.39	0.090	0	0.94	0.002	0	0.44	0.008	0	1.79	0.000	1
PSMG4	-0.15	0.674	0	-0.21	0.514	0	-0.17	0.317	0	0.16	0.780	0	-0.29	0.270	0	1.03	0.000	1
DPPA5	0.04	0.917	0	-0.04	0.926	0	-0.09	0.735	0	-0.03	0.947	0	0.02	0.965	0	2.34	0.000	1
PAQR7	-2.55	0.000	-1	0.47	0.352	0	-1.64	0.002	-1	-1.59	0.002	-1	-2.53	0.000	-1	-2.63	0.000	-1

ACCEPTED MANUSCRIPT

TMEM125	0.22	0.583	0	-0.39	0.304	0	0.38	0.103	0	0.12	0.785	0	0.35	0.047	0	1.35	0.000	1
RNF213	-0.05	0.918	0	0.32	0.299	0	0.65	0.025	0	0.39	0.116	0	2.01	0.000	1	0.74	0.044	0
HPX	-0.09	0.824	0	-0.17	0.650	0	0.11	0.681	0	-0.10	0.836	0	-0.13	0.388	0	2.65	0.000	1
DKKL1	-0.93	0.002	0	-0.25	0.497	0	-0.53	0.210	0	-0.55	0.026	0	-1.04	0.002	-1	-0.28	0.447	0
HLA-B	0.02	0.966	0	0.30	0.415	0	0.57	0.197	0	0.38	0.457	0	1.43	0.000	1	0.03	0.924	0
TSC22D3	-0.61	0.003	0	-0.51	0.028	0	-0.94	0.023	0	-0.63	0.096	0	-1.22	0.000	-1	0.84	0.001	0
TCAF2	-0.62	0.013	0	-0.29	0.324	0	-0.50	0.020	0	1.18	0.002	1	1.44	0.000	1	0.61	0.005	0
NDUFA4L2	0.49	0.257	0	0.20	0.725	0	0.93	0.025	0	-0.22	0.577	0	1.19	0.004	1	-0.47	0.104	0
CILP	-0.16	0.786	0	-0.13	0.844	0	-0.10	0.790	0	1.21	0.234	0	-0.14	0.582	0	-1.10	0.002	-1
XPNPEP2	-0.41	0.383	0	-0.21	0.727	0	0.16	0.576	0	1.45	0.006	1	-0.88	0.000	0	-0.16	0.372	0
HRNR	-0.15	0.585	0	-0.33	0.172	0	0.21	0.224	0	1.53	0.000	1	0.22	0.108	0	0.62	0.007	0
STX11	0.27	0.437	0	-0.02	0.974	0	1.37	0.027	1	0.77	0.005	0	0.80	0.002	0	1.73	0.000	1
FBXO31	-0.21	0.544	0	-0.30	0.402	0	-0.41	0.060	0	-0.37	0.204	0	-1.06	0.000	-1	-0.79	0.001	0
SATB1	-0.53	0.036	0	-0.15	0.684	0	-0.77	0.002	0	-1.30	0.002	-1	-0.81	0.001	0	0.78	0.002	0
FLRT1	-0.82	0.052	0	-0.36	0.513	0	-0.76	0.012	0	-0.64	0.053	0	-0.59	0.014	0	-1.64	0.000	-1
FAP	0.15	0.730	0	0.69	0.048	0	0.03	0.909	0	-0.27	0.599	0	-0.40	0.210	0	-1.07	0.000	-1
KLRB1	0.18	0.761	0	0.33	0.546	0	0.46	0.190	0	0.29	0.489	0	0.63	0.001	0	1.82	0.000	1
UGCG	-0.15	0.567	0	-0.16	0.579	0	0.49	0.047	0	0.36	0.138	0	0.88	0.000	0	1.15	0.000	1
COTL1	0.14	0.861	0	-0.42	0.523	0	0.86	0.011	0	1.27	0.001	1	0.75	0.009	0	1.99	0.000	1
SYNPO2	-0.07	0.846	0	0.27	0.306	0	-0.28	0.232	0	0.13	0.819	0	-0.18	0.360	0	-1.42	0.001	-1
ATP1A3	0.13	0.906	0	-0.47	0.579	0	0.98	0.057	0	0.18	0.779	0	0.19	0.340	0	1.32	0.000	1
LCN2	1.58	0.000	1	0.22	0.639	0	2.06	0.003	1	1.77	0.023	1	1.60	0.001	1	4.63	0.000	1
ARK1C3	-0.36	0.576	0	0.31	0.665	0	1.24	0.017	1	-0.40	0.428	0	-1.05	0.021	-1	-0.92	0.000	0
TRPM3	-0.38	0.379	0	0.30	0.538	0	-0.55	0.017	0	-1.06	0.052	0	0.06	0.733	0	-1.00	0.000	-1
NAPSA	-0.15	0.752	0	-0.08	0.878	0	0.26	0.238	0	-0.23	0.624	0	0.01	0.958	0	1.60	0.000	1
RAB3B	-0.58	0.140	0	0.23	0.669	0	0.19	0.505	0	-1.72	0.007	-1	0.00	0.997	0	-0.89	0.000	0
ENTPD1	0.18	0.506	0	0.36	0.157	0	1.20	0.009	1	0.86	0.002	0	1.16	0.000	1	1.08	0.001	1
GNG13	-0.43	0.392	0	-0.03	0.969	0	-0.13	0.558	0	-0.73	0.254	0	-0.07	0.733	0	-3.08	0.000	-1
TPPP	-0.25	0.300	0	0.09	0.782	0	-0.56	0.117	0	-0.43	0.207	0	-0.73	0.001	0	-1.30	0.000	-1
RABL6	-0.20	0.371	0	-0.13	0.617	0	-0.07	0.675	0	0.13	0.551	0	-0.27	0.058	0	-1.27	0.000	-1
KLRB1	0.23	0.729	0	0.43	0.470	0	-0.05	0.951	0	0.34	0.559	0	0.12	0.567	0	1.70	0.000	1
BAMBI	0.41	0.540	0	0.04	0.972	0	-0.24	0.397	0	-1.76	0.009	-1	0.39	0.143	0	-1.60	0.031	-1

PLA2G4E	0.89	0.009	0	-0.29	0.503	0	2.10	0.000	1	1.59	0.000	1	1.40	0.000	1	2.84	0.000	1
TRPT1	-0.06	0.873	0	0.21	0.510	0	-0.63	0.023	0	-0.16	0.714	0	-0.45	0.019	0	1.01	0.002	1
AK1C1	-0.61	0.533	0	0.18	0.893	0	0.42	0.473	0	0.15	0.857	0	0.19	0.167	0	-2.09	0.000	-1
OAS2	-0.19	0.667	0	0.07	0.897	0	1.06	0.041	1	0.34	0.411	0	2.18	0.000	1	0.88	0.055	0
C1R	0.29	0.535	0	0.16	0.780	0	0.58	0.049	0	-0.34	0.510	0	1.05	0.000	1	0.34	0.044	0
DLX4	0.00	0.999	0	-0.38	0.471	0	-0.05	0.905	0	-0.69	0.082	0	-0.03	0.893	0	-1.46	0.025	-1
KLRB1	-0.27	0.614	0	-0.05	0.951	0	0.08	0.804	0	0.56	0.194	0	0.07	0.774	0	1.14	0.001	1
SP110	0.02	0.976	0	0.35	0.199	0	0.87	0.024	0	0.52	0.108	0	1.81	0.000	1	0.65	0.002	0
CHRDL1	0.18	0.613	0	0.70	0.025	0	-0.01	0.966	0	1.04	0.108	0	-0.06	0.832	0	-1.34	0.000	-1
MMP10	-0.08	0.851	0	-0.03	0.951	0	1.46	0.032	1	-0.52	0.270	0	-0.05	0.921	0	1.86	0.000	1
FOS	0.85	0.252	0	0.06	0.966	0	-0.01	0.995	0	0.41	0.624	0	0.84	0.028	0	1.12	0.001	1
LHX2	0.33	0.335	0	0.08	0.874	0	-0.21	0.522	0	-0.60	0.246	0	0.47	0.057	0	-2.32	0.000	-1
ITGAX	-0.28	0.421	0	-0.06	0.905	0	0.53	0.270	0	-0.15	0.838	0	0.17	0.464	0	1.21	0.000	1
ENPP1	0.30	0.478	0	0.65	0.103	0	-0.16	0.304	0	-0.03	0.952	0	-0.18	0.361	0	-1.46	0.000	-1
SCD	-1.27	0.015	-1	1.51	0.015	1	0.60	0.210	0	-1.95	0.018	-1	-0.99	0.005	0	-2.98	0.000	-1
PRR9	2.71	0.084	0	1.03	0.626	0	0.92	0.200	0	-2.21	0.138	0	2.41	0.000	1	-3.35	0.013	-1
BIRC5	0.31	0.310	0	-0.39	0.229	0	1.20	0.002	1	0.74	0.128	0	0.60	0.005	0	0.66	0.005	0
COL18A1	0.37	0.478	0	-0.35	0.529	0	1.03	0.005	1	0.06	0.914	0	0.24	0.042	0	-0.49	0.046	0
EPGN	1.47	0.000	1	0.33	0.449	0	2.40	0.010	1	0.56	0.449	0	1.31	0.005	1	2.21	0.000	1
C1QA	-0.14	0.866	0	-0.30	0.658	0	1.31	0.007	1	0.76	0.188	0	0.59	0.065	0	0.63	0.084	0
PARVG	0.04	0.939	0	-0.04	0.943	0	0.45	0.107	0	0.23	0.538	0	0.17	0.460	0	1.89	0.000	1
CYBA	0.23	0.718	0	0.02	0.979	0	0.67	0.077	0	0.51	0.177	0	0.39	0.057	0	1.50	0.000	1
OAS1	-0.84	0.289	0	-0.45	0.647	0	0.82	0.261	0	1.62	0.020	1	-0.11	0.500	0	1.35	0.007	1
TMEM132C	0.09	0.832	0	0.05	0.916	0	0.56	0.021	0	0.05	0.944	0	0.03	0.906	0	-1.52	0.000	-1
TIMP3	-0.11	0.845	0	0.57	0.150	0	-0.69	0.006	0	-0.05	0.909	0	-0.40	0.110	0	-2.20	0.000	-1
ITIH5	0.22	0.455	0	0.50	0.077	0	0.32	0.251	0	0.34	0.238	0	-0.01	0.973	0	-1.09	0.001	-1
SASH3	0.14	0.747	0	0.02	0.971	0	0.84	0.009	0	0.24	0.627	0	0.17	0.236	0	1.57	0.000	1
NEDD4L	-0.10	0.776	0	0.20	0.496	0	-0.48	0.009	0	-0.41	0.058	0	-0.30	0.068	0	-1.15	0.000	-1
TIAM2	0.10	0.720	0	0.16	0.538	0	-0.15	0.349	0	-0.38	0.411	0	-0.13	0.539	0	-1.10	0.001	-1
EYA1	-0.08	0.877	0	0.46	0.176	0	-0.61	0.014	0	-0.56	0.260	0	-0.41	0.021	0	-1.61	0.000	-1
BCAT1	-0.37	0.183	0	0.15	0.676	0	0.77	0.038	0	0.74	0.019	0	0.37	0.051	0	2.17	0.004	1
ALAD	-0.08	0.861	0	0.01	0.983	0	-0.70	0.030	0	-0.27	0.382	0	-1.39	0.000	-1	-1.11	0.000	-1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

CXCR6	1.50	0.000	1	0.04	0.936	0	0.68	0.079	0	0.20	0.723	0	-0.12	0.645	0	2.61	0.000	1
KRT36	1.69	0.013	1	0.75	0.366	0	0.60	0.467	0	-2.04	0.014	-1	0.45	0.034	0	-0.84	0.100	0
G0S2	-0.23	0.690	0	-0.17	0.793	0	0.37	0.486	0	-0.05	0.920	0	-0.18	0.686	0	-1.45	0.000	-1
RXFP1	-1.27	0.049	-1	0.61	0.460	0	-0.05	0.899	0	0.71	0.050	0	0.07	0.706	0	-0.35	0.048	0
ITGAM	0.47	0.048	0	0.16	0.607	0	1.55	0.026	1	0.84	0.068	0	0.83	0.001	0	1.41	0.005	1
DDX58	0.15	0.573	0	0.33	0.157	0	0.29	0.238	0	0.53	0.038	0	0.95	0.000	0	1.31	0.001	1
PTPRG	-0.15	0.524	0	0.00	0.994	0	0.04	0.830	0	0.09	0.726	0	-0.09	0.662	0	-1.71	0.001	-1
MANSC1	1.07	0.002	1	0.22	0.619	0	-0.02	0.964	0	0.95	0.052	0	-0.57	0.005	0	-0.77	0.001	0
MICAL3	0.05	0.886	0	-0.01	0.981	0	-0.29	0.074	0	-0.35	0.228	0	0.14	0.357	0	-1.22	0.000	-1
APOL3	-0.29	0.582	0	-0.01	0.987	0	-0.13	0.653	0	-0.40	0.650	0	0.32	0.100	0	1.25	0.000	1
APOL1	-0.29	0.582	0	-0.01	0.987	0	-0.13	0.653	0	-0.40	0.650	0	0.32	0.100	0	1.25	0.000	1
SOAT2	-0.18	0.609	0	-0.22	0.528	0	0.98	0.079	0	-0.17	0.595	0	-0.04	0.864	0	1.13	0.000	1
ARRB2	-0.31	0.444	0	-0.32	0.454	0	0.53	0.066	0	-0.13	0.661	0	0.18	0.219	0	1.45	0.000	1
GAB2	-0.14	0.594	0	0.07	0.809	0	0.28	0.135	0	0.30	0.196	0	0.21	0.146	0	1.41	0.000	1
SYNJ1	-0.03	0.951	0	0.06	0.893	0	0.22	0.392	0	-0.22	0.381	0	0.26	0.039	0	1.21	0.001	1
MMP3	0.11	0.867	0	0.09	0.902	0	2.18	0.004	1	2.01	0.022	1	0.08	0.850	0	1.10	0.022	1
GCH1	0.47	0.069	0	-0.23	0.477	0	0.59	0.106	0	0.53	0.228	0	1.37	0.002	1	1.46	0.000	1
ADAM8	0.10	0.807	0	-0.31	0.312	0	1.76	0.005	1	0.29	0.410	0	1.08	0.000	1	1.44	0.001	1
PLAT	0.56	0.005	0	0.32	0.155	0	1.09	0.003	1	0.29	0.431	0	0.62	0.001	0	-0.35	0.040	0
PENK	0.02	0.959	0	0.35	0.197	0	-0.54	0.021	0	0.44	0.487	0	-0.92	0.000	0	-1.16	0.006	-1
SNAP91	-0.11	0.808	0	0.26	0.490	0	-0.75	0.022	0	1.04	0.077	0	-0.42	0.009	0	-1.18	0.000	-1
HAMP	-0.02	0.971	0	0.31	0.450	0	-0.30	0.505	0	-0.41	0.326	0	0.73	0.164	0	-2.81	0.002	-1
TYRP1	1.41	0.001	1	0.29	0.587	0	0.25	0.480	0	-0.82	0.223	0	-0.98	0.011	0	-3.29	0.001	-1
KLF15	-0.81	0.017	0	-0.41	0.310	0	-0.84	0.011	0	-0.45	0.194	0	-0.41	0.013	0	-1.40	0.000	-1
MMP2	0.13	0.572	0	0.29	0.183	0	0.47	0.046	0	1.12	0.037	1	0.44	0.065	0	-0.06	0.775	0
GSTM3	0.12	0.808	0	-0.08	0.890	0	-0.29	0.180	0	-0.27	0.360	0	-1.03	0.000	-1	-0.49	0.000	0
FXR1	-0.26	0.329	0	0.13	0.710	0	-0.27	0.111	0	0.31	0.229	0	-0.28	0.028	0	-1.01	0.009	-1
GIMAP5	-0.07	0.886	0	0.13	0.754	0	-0.07	0.842	0	0.16	0.672	0	0.28	0.056	0	3.29	0.000	1
GIMAP1-GI	-0.07	0.886	0	0.13	0.754	0	-0.07	0.842	0	0.16	0.672	0	0.28	0.056	0	3.29	0.000	1
PTPN1	0.00	0.997	0	-0.24	0.538	0	0.32	0.226	0	0.01	0.978	0	0.32	0.056	0	1.19	0.000	1
PKIB	-0.24	0.591	0	0.00	0.998	0	-0.29	0.390	0	-1.09	0.001	-1	0.15	0.298	0	0.43	0.135	0
NGF	0.21	0.504	0	0.37	0.235	0	1.09	0.014	1	0.52	0.165	0	-0.51	0.162	0	0.58	0.030	0

ACCEPTED MANUSCRIPT

ANGPTL1	0.06	0.906	0	0.76	0.037	0	0.26	0.428	0	1.28	0.022	1	-0.23	0.260	0	-1.97	0.000	-1
HSD3B1	0.06	0.957	0	0.50	0.521	0	-0.30	0.373	0	1.78	0.001	1	-0.36	0.102	0	-0.57	0.076	0
C7orf57	-0.56	0.094	0	-0.25	0.564	0	-0.19	0.370	0	0.64	0.014	0	-0.27	0.227	0	1.05	0.002	1
CCL3L3	-0.29	0.802	0	-0.38	0.721	0	3.56	0.008	1	0.13	0.881	0	5.14	0.000	1	5.09	0.000	1
CCL3L3	-0.29	0.802	0	-0.38	0.721	0	3.56	0.008	1	0.13	0.881	0	5.14	0.000	1	5.09	0.000	1
CCL3	-0.29	0.802	0	-0.38	0.721	0	3.56	0.008	1	0.13	0.881	0	5.14	0.000	1	5.09	0.000	1
CCL18	-0.29	0.802	0	-0.38	0.721	0	3.56	0.008	1	0.13	0.881	0	5.14	0.000	1	5.09	0.000	1
MME	0.21	0.654	0	0.56	0.173	0	0.24	0.620	0	-0.34	0.390	0	0.02	0.952	0	-1.69	0.000	-1
ZC3H12C	0.47	0.039	0	-0.19	0.523	0	-0.01	0.972	0	-0.50	0.186	0	1.29	0.000	1	1.32	0.000	1
CIB2	-0.06	0.840	0	0.18	0.495	0	-0.48	0.028	0	-0.69	0.011	0	-0.51	0.038	0	-1.13	0.000	-1
HFE	0.03	0.942	0	0.06	0.885	0	0.42	0.021	0	1.12	0.019	1	0.13	0.438	0	0.59	0.013	0
PLA2G7	0.32	0.240	0	0.27	0.388	0	1.22	0.029	1	0.94	0.019	0	1.24	0.000	1	1.99	0.000	1
TNNT2	-1.06	0.002	-1	-0.37	0.357	0	-1.51	0.001	-1	-0.58	0.093	0	-0.59	0.003	0	1.12	0.089	0
FCER2	0.00	1.000	0	0.09	0.841	0	-1.18	0.007	-1	0.17	0.740	0	0.06	0.773	0	0.10	0.279	0
IQGAP3	0.17	0.782	0	-0.63	0.190	0	1.16	0.002	1	0.18	0.785	0	0.04	0.862	0	0.53	0.034	0
TMEM8A	-0.09	0.840	0	-0.20	0.620	0	1.49	0.002	1	0.54	0.458	0	0.35	0.060	0	1.84	0.000	1
SERPINB6	-0.09	0.881	0	0.15	0.780	0	0.49	0.068	0	1.40	0.007	1	1.37	0.000	1	3.09	0.000	1
KRTAP9-1	2.11	0.329	0	1.17	0.661	0	0.39	0.715	0	-3.54	0.088	0	3.35	0.003	1	-2.85	0.009	-1
RHOF	-0.12	0.852	0	-0.14	0.832	0	0.60	0.028	0	0.43	0.140	0	0.55	0.013	0	1.70	0.000	1
USP13	-0.16	0.749	0	0.51	0.193	0	-0.70	0.008	0	1.12	0.209	0	-0.44	0.050	0	-1.05	0.001	-1
MPEG1	0.03	0.968	0	0.16	0.793	0	1.15	0.032	1	0.79	0.156	0	1.82	0.000	1	1.50	0.000	1
TMIGD1	0.05	0.941	0	0.14	0.831	0	0.26	0.256	0	1.03	0.021	1	0.77	0.015	0	1.78	0.000	1
NR4A3	-0.12	0.660	0	-0.23	0.353	0	1.88	0.018	1	1.06	0.008	1	0.07	0.863	0	0.47	0.289	0
TNMD	0.38	0.426	0	0.41	0.417	0	0.25	0.459	0	0.28	0.670	0	0.30	0.386	0	-1.74	0.000	-1
LRRC15	2.04	0.039	1	0.83	0.519	0	1.92	0.014	1	-1.59	0.171	0	2.27	0.000	1	-1.63	0.065	0
ZNF704	-0.03	0.954	0	-0.05	0.923	0	-0.51	0.021	0	-0.72	0.026	0	-0.30	0.074	0	-1.43	0.000	-1
LPO	0.44	0.279	0	-0.51	0.229	0	1.08	0.002	1	1.11	0.016	1	1.34	0.002	1	5.07	0.000	1
CYTH4	0.05	0.925	0	-0.03	0.958	0	1.32	0.004	1	0.58	0.352	0	0.33	0.053	0	1.11	0.010	1
APOL3	-0.23	0.770	0	-0.01	0.991	0	0.97	0.064	0	1.27	0.067	0	0.00	0.998	0	1.95	0.000	1
APOL1	-0.23	0.770	0	-0.01	0.991	0	0.97	0.064	0	1.27	0.067	0	0.00	0.998	0	1.95	0.000	1
CCL23	0.06	0.943	0	-0.30	0.640	0	1.97	0.001	1	0.86	0.141	0	0.38	0.261	0	0.53	0.230	0
AADAC	0.72	0.069	0	-0.06	0.934	0	0.06	0.847	0	1.65	0.000	1	-0.67	0.001	0	0.66	0.001	0

ACCEPTED MANUSCRIPT

MYLK4	-0.38	0.543	0	0.27	0.707	0	-1.93	0.001	-1	1.01	0.486	0	-0.88	0.075	0	-1.27	0.014	-1
CD300LF	0.38	0.255	0	0.17	0.698	0	1.83	0.042	1	-0.23	0.526	0	0.88	0.028	0	1.96	0.000	1
ALCAM	0.76	0.004	0	0.49	0.102	0	0.18	0.440	0	0.13	0.783	0	0.41	0.052	0	-1.26	0.000	-1
MRS2	0.00	0.999	0	-0.07	0.805	0	-0.05	0.753	0	0.17	0.386	0	-0.19	0.332	0	1.04	0.000	1
SOX15	-0.13	0.833	0	-0.37	0.475	0	-0.02	0.964	0	1.35	0.003	1	-0.32	0.091	0	1.33	0.000	1
CA2	1.38	0.003	1	0.42	0.473	0	2.85	0.001	1	1.43	0.011	1	1.81	0.000	1	1.28	0.008	1
RTP4	0.06	0.942	0	0.49	0.372	0	0.89	0.015	0	1.06	0.028	1	4.37	0.000	1	1.23	0.002	1
ENO1	-0.51	0.470	0	-0.79	0.255	0	-0.31	0.196	0	0.08	0.857	0	1.14	0.000	1	0.43	0.000	0
INMT	-0.94	0.046	0	0.03	0.970	0	-2.44	0.004	-1	0.32	0.762	0	-1.26	0.001	-1	-2.54	0.000	-1
INMT-FAM1	-0.94	0.046	0	0.03	0.970	0	-2.44	0.004	-1	0.32	0.762	0	-1.26	0.001	-1	-2.54	0.000	-1
AGPAT5	-0.54	0.009	0	-0.20	0.450	0	-0.32	0.095	0	-0.17	0.594	0	-0.64	0.015	0	-1.27	0.000	-1
TNC	0.54	0.047	0	0.35	0.284	0	2.97	0.001	1	1.23	0.117	0	2.50	0.000	1	3.28	0.000	1
KRT17	1.15	0.029	1	0.21	0.793	0	0.76	0.009	0	0.11	0.865	0	1.44	0.000	1	0.48	0.027	0
LILRA2	-0.08	0.894	0	0.07	0.920	0	2.23	0.004	1	1.98	0.009	1	2.45	0.000	1	1.26	0.003	1
LILRB4	-0.08	0.894	0	0.07	0.920	0	2.23	0.004	1	1.98	0.009	1	2.45	0.000	1	1.26	0.003	1
FAR2	0.47	0.109	0	0.44	0.181	0	-0.45	0.054	0	0.69	0.031	0	-0.84	0.000	0	-1.04	0.001	-1
KLK6	1.12	0.002	1	-0.34	0.437	0	2.09	0.001	1	2.14	0.001	1	3.29	0.000	1	2.30	0.000	1
ACSS2	0.48	0.071	0	0.17	0.628	0	-0.43	0.102	0	1.19	0.002	1	-0.81	0.000	0	-0.61	0.002	0
AOC3	-0.33	0.381	0	0.32	0.444	0	-0.73	0.023	0	0.40	0.549	0	-0.06	0.890	0	-1.79	0.000	-1
MLXIPL	-0.46	0.325	0	0.45	0.376	0	-0.76	0.028	0	-0.20	0.618	0	-0.30	0.015	0	-1.65	0.000	-1
EGLN3	-0.30	0.473	0	-0.23	0.631	0	0.65	0.013	0	1.15	0.029	1	1.34	0.000	1	0.93	0.002	0
CCL23	0.38	0.162	0	0.22	0.523	0	1.62	0.004	1	1.50	0.120	0	0.85	0.032	0	0.96	0.060	0
SLC15A3	-0.37	0.385	0	-0.41	0.369	0	1.42	0.042	1	0.49	0.453	0	0.85	0.010	0	2.87	0.000	1
TNFSF14	0.33	0.454	0	0.31	0.515	0	1.13	0.077	0	-0.07	0.920	0	0.26	0.205	0	1.76	0.000	1
TMEM229B	0.52	0.309	0	-0.11	0.884	0	0.93	0.002	0	-0.45	0.324	0	0.96	0.001	0	1.04	0.001	1
HDC	0.18	0.613	0	-0.33	0.306	0	3.16	0.007	1	1.22	0.087	0	2.58	0.000	1	3.45	0.000	1
GNA13	-0.12	0.720	0	-0.03	0.942	0	0.08	0.766	0	-0.14	0.548	0	0.16	0.220	0	1.89	0.000	1
SYCP2	0.07	0.842	0	0.03	0.936	0	1.37	0.134	0	0.04	0.927	0	0.17	0.548	0	1.16	0.002	1
TWF1	0.06	0.907	0	-0.26	0.446	0	0.78	0.003	0	1.00	0.001	0	0.72	0.002	0	1.02	0.000	1
JUNB	0.32	0.665	0	-0.41	0.566	0	0.57	0.203	0	-0.17	0.667	0	0.94	0.000	0	1.05	0.000	1
CFB	0.50	0.047	0	0.06	0.888	0	0.96	0.012	0	0.55	0.339	0	0.79	0.001	0	1.84	0.000	1
PPARGC1A	0.03	0.971	0	0.57	0.295	0	-1.06	0.018	-1	-0.22	0.569	0	-1.10	0.002	-1	-1.31	0.000	-1

CH25H	0.13	0.794	0	0.21	0.635	0	0.77	0.188	0	1.03	0.018	1	2.15	0.002	1	0.71	0.063	0
TREML4	0.10	0.878	0	-0.20	0.715	0	2.05	0.027	1	-0.30	0.414	0	0.63	0.051	0	1.42	0.000	1
GLRB	0.08	0.878	0	0.27	0.530	0	-0.38	0.149	0	0.01	0.991	0	-0.12	0.513	0	-1.16	0.006	-1
OASL	-0.05	0.905	0	-0.11	0.772	0	0.53	0.131	0	0.15	0.726	0	0.61	0.014	0	2.02	0.005	1
PGAM2	-0.09	0.867	0	0.33	0.463	0	-1.17	0.013	-1	0.89	0.195	0	-1.31	0.000	-1	-0.81	0.003	0
ALDH3B2	0.42	0.323	0	-0.29	0.563	0	0.69	0.041	0	0.99	0.020	0	-0.08	0.806	0	1.79	0.000	1
CXCL11	0.02	0.971	0	0.74	0.060	0	0.29	0.411	0	0.96	0.147	0	5.72	0.000	1	3.05	0.000	1
RNPEP	-0.10	0.839	0	-0.08	0.881	0	0.52	0.012	0	0.47	0.071	0	1.05	0.000	1	0.79	0.000	0
GSDMA	0.67	0.010	0	-0.12	0.766	0	0.61	0.005	0	0.30	0.456	0	0.57	0.001	0	1.59	0.000	1
TREX2	-0.18	0.713	0	-0.13	0.799	0	1.17	0.000	1	0.55	0.158	0	1.01	0.000	1	1.12	0.011	1
SULT1A3	-0.55	0.015	0	0.23	0.423	0	-0.61	0.019	0	-0.43	0.350	0	-0.53	0.003	0	-1.32	0.005	-1
SULT1A3	-0.55	0.015	0	0.23	0.423	0	-0.61	0.019	0	-0.43	0.350	0	-0.53	0.003	0	-1.32	0.005	-1
OSM	0.21	0.645	0	0.16	0.745	0	1.95	0.015	1	-0.22	0.659	0	1.42	0.001	1	2.18	0.000	1
PAK6	-0.22	0.611	0	-0.23	0.603	0	0.09	0.644	0	0.19	0.553	0	0.38	0.017	0	1.04	0.000	1
PAK6	-0.22	0.611	0	-0.23	0.603	0	0.09	0.644	0	0.19	0.553	0	0.38	0.017	0	1.04	0.000	1
HILPDA	1.69	0.000	1	-0.27	0.411	0	0.35	0.204	0	1.79	0.001	1	-0.60	0.002	0	0.57	0.049	0
PTGDS	0.56	0.085	0	0.07	0.894	0	-0.45	0.050	0	-1.03	0.006	-1	-0.10	0.623	0	-2.90	0.000	-1
GJA3	0.43	0.143	0	0.20	0.589	0	-0.26	0.253	0	-0.88	0.114	0	0.14	0.422	0	-2.05	0.035	-1
CD207	0.04	0.944	0	-0.03	0.951	0	-0.25	0.381	0	-0.51	0.148	0	-1.30	0.000	-1	0.37	0.199	0
KIAA0922	-0.28	0.257	0	-0.21	0.454	0	-0.15	0.308	0	-0.29	0.122	0	-0.24	0.220	0	-1.17	0.000	-1
SOX4	0.60	0.131	0	-0.17	0.777	0	0.42	0.222	0	-0.31	0.617	0	0.23	0.315	0	-1.33	0.000	-1
SEMA6B	-0.22	0.568	0	-0.20	0.625	0	1.24	0.028	1	0.25	0.570	0	0.37	0.008	0	0.48	0.001	0
ENTPD2	-0.37	0.401	0	0.00	0.996	0	-0.61	0.034	0	-0.33	0.273	0	-0.43	0.007	0	-1.29	0.001	-1
COL8A1	-0.24	0.492	0	0.18	0.669	0	-0.24	0.244	0	0.04	0.970	0	-0.41	0.083	0	1.80	0.001	1
DOK1	-0.28	0.600	0	-0.44	0.393	0	-0.05	0.874	0	0.01	0.992	0	0.31	0.076	0	1.06	0.000	1
GFRA2	0.25	0.442	0	0.66	0.039	0	-0.14	0.772	0	-0.52	0.169	0	-0.21	0.166	0	-1.19	0.000	-1
GZMB	-0.12	0.821	0	0.10	0.863	0	1.17	0.049	1	-0.09	0.855	0	2.99	0.000	1	4.37	0.000	1
TAF1D	1.20	0.043	1	0.74	0.290	0	0.69	0.007	0	-0.44	0.176	0	0.78	0.000	0	0.67	0.001	0
OR51E1	-0.23	0.776	0	0.41	0.577	0	0.49	0.098	0	1.05	0.044	1	0.02	0.941	0	-0.01	0.965	0
MYF6	0.08	0.899	0	1.10	0.016	1	-0.83	0.020	0	0.75	0.440	0	-0.53	0.010	0	-0.59	0.085	0
HSD17B14	-0.85	0.044	0	-0.71	0.146	0	-0.47	0.217	0	-1.44	0.001	-1	-0.16	0.293	0	-1.46	0.000	-1
NCAPH	0.50	0.134	0	-0.09	0.867	0	1.20	0.000	1	0.76	0.091	0	0.39	0.023	0	0.91	0.000	0

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

TRIM21	-0.03	0.952	0	0.21	0.600	0	-0.21	0.375	0	-0.01	0.980	0	1.73	0.000	1	0.85	0.000	0
EPHX1	-0.20	0.503	0	0.34	0.235	0	-0.30	0.237	0	-0.47	0.080	0	-0.80	0.000	0	-1.24	0.000	-1
CD300A	0.17	0.671	0	-0.02	0.979	0	0.77	0.075	0	0.23	0.788	0	0.19	0.212	0	1.70	0.000	1
PTGIS	-0.12	0.796	0	0.05	0.929	0	-0.44	0.026	0	-0.18	0.779	0	-0.46	0.010	0	1.65	0.002	1
CDKN1B	-0.13	0.610	0	0.10	0.737	0	-0.44	0.008	0	-0.28	0.281	0	-1.21	0.004	-1	-0.77	0.000	0
CD300A	0.04	0.925	0	0.00	1.000	0	1.60	0.011	1	0.24	0.536	0	0.67	0.003	0	2.50	0.000	1
ACKR4	-0.67	0.098	0	-0.05	0.948	0	-0.63	0.006	0	-0.80	0.010	0	-1.06	0.000	-1	-0.87	0.007	0
TRIM5	-0.31	0.661	0	0.20	0.805	0	1.09	0.065	0	0.63	0.548	0	2.71	0.000	1	0.98	0.048	0
PDSS1	0.75	0.009	0	-0.04	0.933	0	0.71	0.022	0	2.84	0.001	1	0.70	0.001	0	1.04	0.000	1
MYOM1	0.06	0.938	0	0.59	0.241	0	-1.26	0.005	-1	0.51	0.630	0	-0.99	0.003	0	-0.91	0.004	0
LIMS2	-0.77	0.017	0	0.09	0.866	0	-0.46	0.058	0	-0.29	0.442	0	-0.18	0.360	0	-1.13	0.000	-1
CD300LF	0.41	0.148	0	0.61	0.052	0	1.57	0.028	1	0.74	0.163	0	0.36	0.123	0	1.68	0.001	1
BPIFA2	-0.06	0.918	0	0.99	0.019	0	-1.40	0.007	-1	-0.09	0.878	0	-0.65	0.003	0	0.00	0.997	0
LMOD2	-0.58	0.073	0	0.10	0.857	0	-1.30	0.003	-1	0.89	0.273	0	-0.57	0.017	0	-0.34	0.232	0
MAPK6	0.24	0.695	0	-0.19	0.778	0	0.84	0.004	0	0.67	0.005	0	0.90	0.000	0	1.03	0.000	1
NCEH1	-0.02	0.948	0	0.13	0.665	0	0.30	0.244	0	0.49	0.250	0	-0.60	0.047	0	1.02	0.000	1
TRPM1	0.68	0.048	0	0.16	0.750	0	-0.19	0.498	0	-0.90	0.028	0	-0.08	0.628	0	-2.19	0.022	-1
DDX43	0.38	0.183	0	-0.20	0.581	0	-0.53	0.070	0	-0.13	0.784	0	-0.02	0.947	0	1.13	0.000	1
MMP13	-0.04	0.975	0	-0.52	0.543	0	3.70	0.003	1	0.36	0.820	0	1.82	0.002	1	3.22	0.000	1
IGFALS	0.05	0.945	0	0.08	0.906	0	-0.07	0.846	0	-0.05	0.955	0	0.13	0.462	0	-1.11	0.000	-1
FFAR4	1.49	0.000	1	0.08	0.874	0	-0.02	0.972	0	1.21	0.001	1	-0.40	0.144	0	-0.27	0.271	0
GPC4	0.17	0.442	0	0.09	0.740	0	-0.05	0.798	0	-0.52	0.034	0	-0.35	0.013	0	-1.02	0.000	-1
COX6A2	-0.46	0.214	0	0.56	0.157	0	-1.22	0.039	-1	0.85	0.268	0	-0.88	0.002	0	-0.57	0.030	0
PIGA	0.25	0.267	0	0.05	0.879	0	-0.11	0.619	0	0.32	0.252	0	0.10	0.685	0	1.01	0.000	1
HELZ2	-0.13	0.763	0	-0.01	0.983	0	0.52	0.112	0	-0.13	0.824	0	0.83	0.006	0	1.16	0.001	1
ABCC9	0.07	0.910	0	0.66	0.123	0	-0.09	0.649	0	0.96	0.018	0	-0.51	0.006	0	-1.38	0.000	-1
RBP4	0.22	0.459	0	0.21	0.511	0	-0.62	0.027	0	-0.13	0.788	0	-1.00	0.000	-1	-1.80	0.000	-1
PRSS12	0.93	0.000	0	0.39	0.140	0	0.70	0.004	0	0.73	0.081	0	0.49	0.005	0	1.40	0.000	1
SERPINB11	0.14	0.683	0	0.04	0.922	0	0.21	0.371	0	-0.26	0.579	0	2.06	0.000	1	0.22	0.155	0
MVD	0.09	0.821	0	-0.28	0.353	0	-0.25	0.225	0	1.13	0.005	1	-0.47	0.005	0	0.22	0.264	0
CYP3A5	-0.12	0.785	0	0.04	0.931	0	-0.39	0.056	0	0.28	0.373	0	-0.30	0.069	0	1.50	0.000	1
AKAP12	0.19	0.715	0	0.89	0.036	0	-0.39	0.120	0	0.23	0.492	0	-0.02	0.955	0	-1.01	0.000	-1

SKIL	0.31	0.349	0	0.07	0.889	0	0.32	0.194	0	0.53	0.040	0	0.63	0.003	0	1.46	0.000	1
PLP1	-0.09	0.881	0	0.63	0.131	0	-0.46	0.029	0	-0.53	0.055	0	-0.47	0.007	0	-1.25	0.000	-1
CARD11	-0.11	0.828	0	-0.19	0.684	0	0.09	0.707	0	0.08	0.856	0	-0.08	0.711	0	1.15	0.000	1
APOL3	0.24	0.694	0	-0.13	0.862	0	0.05	0.910	0	0.31	0.582	0	1.71	0.001	1	0.92	0.068	0
APOL1	0.24	0.694	0	-0.13	0.862	0	0.05	0.910	0	0.31	0.582	0	1.71	0.001	1	0.92	0.068	0
HRSP12	0.01	0.993	0	0.31	0.470	0	-0.34	0.127	0	0.06	0.893	0	-1.03	0.000	-1	-0.89	0.000	0
ASB12	0.10	0.878	0	0.63	0.161	0	-1.19	0.011	-1	0.38	0.539	0	-1.06	0.002	-1	-0.91	0.005	0
PDE1B	-0.18	0.571	0	-0.97	0.002	0	0.52	0.023	0	-0.47	0.098	0	0.29	0.041	0	1.93	0.000	1
CCR6	0.16	0.758	0	0.22	0.666	0	0.14	0.711	0	0.27	0.373	0	0.03	0.913	0	1.61	0.000	1
PIK3R6	-0.14	0.764	0	-0.01	0.992	0	0.24	0.409	0	-0.05	0.953	0	-0.02	0.908	0	1.08	0.006	1
MT4	-0.27	0.685	0	-0.31	0.636	0	-0.43	0.267	0	-0.85	0.047	0	-0.10	0.869	0	-5.32	0.000	-1
LURAP1L	1.15	0.022	1	0.27	0.701	0	0.57	0.055	0	-0.19	0.651	0	0.84	0.000	0	-0.36	0.100	0
PDK4	-0.07	0.949	0	-0.76	0.323	0	-0.33	0.290	0	0.22	0.798	0	-0.39	0.369	0	-1.45	0.000	-1
CLCA1	-0.64	0.044	0	-0.42	0.262	0	0.25	0.291	0	0.62	0.180	0	0.90	0.001	0	1.92	0.000	1
BCO1	-0.05	0.916	0	0.20	0.625	0	-0.84	0.052	0	-0.93	0.066	0	-0.35	0.035	0	-1.61	0.000	-1
KHDC1L	-0.17	0.899	0	-0.12	0.930	0	-0.50	0.353	0	-0.65	0.174	0	-0.08	0.873	0	2.57	0.000	1
GREB1	-0.48	0.253	0	-0.37	0.449	0	0.17	0.583	0	0.03	0.975	0	-0.02	0.948	0	-1.48	0.036	-1
TPBGL	0.05	0.949	0	0.20	0.752	0	-1.27	0.016	-1	0.02	0.974	0	-0.14	0.408	0	-1.02	0.000	-1
RARRES2	0.29	0.412	0	0.35	0.334	0	0.56	0.168	0	0.05	0.966	0	0.01	0.988	0	1.05	0.000	1
RSAD2	0.12	0.792	0	0.06	0.899	0	0.62	0.171	0	0.11	0.806	0	2.48	0.000	1	1.74	0.003	1
TPM3	0.22	0.380	0	0.26	0.433	0	-0.57	0.036	0	0.23	0.563	0	-0.82	0.019	0	1.28	0.000	1
CMPK2	0.31	0.393	0	0.27	0.521	0	0.46	0.105	0	-0.17	0.759	0	1.41	0.005	1	1.17	0.003	1
IGFBP3	-0.20	0.461	0	-0.19	0.507	0	-0.54	0.016	0	-0.91	0.005	0	-1.52	0.000	-1	-1.31	0.000	-1
ADAP1	0.31	0.507	0	0.09	0.898	0	0.42	0.117	0	0.18	0.782	0	-0.05	0.820	0	1.44	0.000	1
SPON2	1.04	0.001	1	0.72	0.042	0	1.16	0.001	1	-0.42	0.247	0	0.14	0.641	0	-0.67	0.066	0
PLEKHF2	0.07	0.818	0	-0.15	0.566	0	-0.01	0.985	0	0.02	0.956	0	-0.25	0.070	0	1.02	0.000	1
CD80	0.67	0.006	0	0.67	0.018	0	1.07	0.047	1	1.12	0.004	1	0.67	0.037	0	0.97	0.001	0
AGTRAP	-0.20	0.546	0	-0.17	0.621	0	-0.03	0.861	0	-0.28	0.527	0	0.38	0.036	0	1.14	0.001	1
FZD7	0.22	0.540	0	0.12	0.786	0	-0.24	0.303	0	0.04	0.926	0	-0.37	0.044	0	-1.19	0.000	-1
UGT8	0.03	0.946	0	0.39	0.235	0	-0.68	0.020	0	-0.21	0.729	0	-0.38	0.015	0	-1.06	0.001	-1
SH2B2	-0.17	0.811	0	-0.17	0.804	0	0.36	0.243	0	0.14	0.811	0	0.11	0.557	0	1.25	0.000	1
PCOLCE2	-0.07	0.831	0	0.28	0.264	0	-0.57	0.034	0	0.14	0.897	0	-0.92	0.000	0	-1.23	0.000	-1

ACCEPTED MANUSCRIPT

ZBP1	0.02	0.980	0	0.09	0.925	0	0.95	0.005	0	0.56	0.234	0	2.22	0.000	1	2.15	0.001	1
CYBB	0.14	0.735	0	0.24	0.503	0	0.89	0.023	0	0.66	0.365	0	0.78	0.006	0	1.81	0.001	1
DLX2	-0.28	0.461	0	-0.24	0.577	0	-0.03	0.923	0	-1.41	0.026	-1	-0.39	0.010	0	-2.51	0.002	-1
TMEM177	-0.33	0.314	0	-0.07	0.884	0	-0.89	0.009	0	-1.04	0.002	-1	-0.48	0.042	0	-1.17	0.000	-1
PPP1R1A	0.21	0.633	0	0.22	0.618	0	-0.30	0.272	0	-0.04	0.916	0	-0.20	0.273	0	-1.19	0.002	-1
AMY2A	-0.21	0.762	0	0.41	0.511	0	-1.00	0.003	-1	0.15	0.788	0	-0.93	0.000	0	-1.63	0.000	-1
PTAFR	0.15	0.759	0	0.15	0.763	0	1.20	0.023	1	0.60	0.223	0	0.20	0.474	0	-0.09	0.490	0
LAMC2	-0.10	0.731	0	-0.26	0.273	0	1.08	0.030	1	0.20	0.548	0	1.11	0.001	1	0.40	0.033	0
EDNRB	1.23	0.006	1	0.11	0.887	0	0.96	0.003	0	0.04	0.963	0	0.01	0.985	0	-1.73	0.000	-1
HSD11B1	-0.42	0.205	0	-0.07	0.905	0	0.26	0.425	0	0.28	0.511	0	-0.07	0.828	0	1.05	0.001	1
CYP2B6	0.32	0.639	0	-0.30	0.684	0	-0.07	0.770	0	1.77	0.001	1	-0.08	0.730	0	0.46	0.000	0
SORCS2	0.38	0.366	0	0.24	0.628	0	1.45	0.005	1	-0.04	0.935	0	0.47	0.000	0	0.54	0.205	0
FOXO1	-0.41	0.039	0	-0.17	0.521	0	-0.21	0.273	0	-0.61	0.005	0	-0.31	0.006	0	-0.89	0.000	0
OAS3	-0.25	0.620	0	-0.02	0.982	0	0.68	0.068	0	0.48	0.340	0	1.31	0.000	1	1.72	0.008	1
SLC39A8	1.05	0.034	1	0.45	0.476	0	0.50	0.039	0	-0.58	0.039	0	1.53	0.000	1	-0.20	0.735	0
ZC3H12D	-0.09	0.848	0	-0.09	0.858	0	0.42	0.222	0	0.50	0.067	0	0.17	0.315	0	2.51	0.000	1
PSAT1	-0.03	0.949	0	0.08	0.877	0	0.29	0.133	0	1.09	0.001	1	0.13	0.366	0	0.33	0.009	0
METTL7A	-0.71	0.095	0	0.31	0.580	0	-0.88	0.010	0	-0.14	0.629	0	-0.67	0.002	0	-1.46	0.000	-1
PTPRCAP	-0.14	0.750	0	-0.16	0.716	0	0.02	0.959	0	-0.06	0.838	0	0.29	0.017	0	1.78	0.000	1
IRGM	-0.17	0.807	0	0.40	0.497	0	0.00	1.000	0	0.59	0.267	0	4.56	0.000	1	1.44	0.001	1
DPPA2	-0.07	0.906	0	-0.36	0.420	0	-0.07	0.860	0	0.89	0.037	0	-0.02	0.949	0	1.14	0.003	1
ASCL2	-0.65	0.028	0	-0.06	0.910	0	-0.52	0.229	0	-0.99	0.016	0	-1.24	0.000	-1	0.11	0.307	0
DEGS2	1.04	0.003	1	-0.60	0.119	0	1.11	0.002	1	2.35	0.000	1	2.69	0.000	1	2.27	0.000	1
NLRC3	0.06	0.905	0	0.00	0.999	0	0.19	0.392	0	0.21	0.674	0	-0.18	0.327	0	1.26	0.000	1
NPR3	-0.28	0.503	0	0.49	0.209	0	-1.06	0.002	-1	-0.15	0.839	0	-0.60	0.013	0	-2.68	0.000	-1
MORN4	0.17	0.709	0	-0.02	0.975	0	0.02	0.943	0	-1.06	0.019	-1	0.13	0.511	0	-0.93	0.017	0
KCNK2	-0.14	0.727	0	-0.25	0.488	0	-0.50	0.139	0	-0.53	0.286	0	-0.15	0.234	0	-1.46	0.000	-1
CA6	0.94	0.322	0	0.51	0.664	0	-0.43	0.136	0	-1.67	0.172	0	-0.06	0.863	0	-4.51	0.000	-1
FOSL1	-0.29	0.705	0	-0.64	0.329	0	1.73	0.014	1	0.97	0.185	0	0.96	0.012	0	0.70	0.295	0
ETS1	0.33	0.362	0	0.17	0.712	0	0.67	0.016	0	0.45	0.036	0	0.45	0.064	0	1.14	0.000	1
RORC	-0.64	0.007	0	-0.51	0.058	0	-1.38	0.002	-1	-0.35	0.219	0	-1.08	0.000	-1	-1.16	0.000	-1
SPN	0.18	0.656	0	-0.24	0.535	0	0.41	0.073	0	-0.19	0.583	0	0.12	0.563	0	2.13	0.000	1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

SPN	0.18	0.656	0	-0.24	0.535	0	0.41	0.073	0	-0.19	0.583	0	0.12	0.563	0	2.13	0.000	1
PRG4	-0.28	0.825	0	0.75	0.475	0	0.06	0.912	0	1.81	0.092	0	0.15	0.717	0	3.22	0.000	1
RAI14	-0.01	0.975	0	0.16	0.635	0	-0.42	0.012	0	-0.44	0.035	0	-0.27	0.068	0	-1.49	0.000	-1
ARHGAP8	-0.18	0.639	0	0.40	0.235	0	0.00	0.987	0	-0.22	0.606	0	0.38	0.164	0	1.41	0.000	1
PRR5-ARH(	-0.18	0.639	0	0.40	0.235	0	0.00	0.987	0	-0.22	0.606	0	0.38	0.164	0	1.41	0.000	1
ECHDC1	0.51	0.057	0	0.26	0.433	0	-0.31	0.163	0	0.98	0.012	0	-1.08	0.000	-1	-0.35	0.040	0
ECT2	0.58	0.148	0	0.16	0.786	0	1.24	0.001	1	0.80	0.037	0	0.57	0.001	0	0.45	0.049	0
CP	0.46	0.179	0	0.85	0.025	0	0.28	0.366	0	0.81	0.155	0	0.01	0.979	0	1.71	0.000	1
PIK3C2G	-0.65	0.110	0	0.05	0.947	0	-1.05	0.015	-1	-0.77	0.027	0	-0.84	0.000	0	-0.23	0.044	0
BIRC3	0.12	0.772	0	0.10	0.824	0	0.22	0.336	0	0.19	0.542	0	0.98	0.000	0	1.38	0.000	1
DNM1	-0.08	0.829	0	0.12	0.734	0	0.05	0.764	0	1.03	0.004	1	-0.21	0.200	0	-0.88	0.004	0
KRTAP9-1	2.31	0.300	0	1.18	0.675	0	0.25	0.850	0	-3.45	0.093	0	4.26	0.001	1	-3.99	0.003	-1
KRTAP26-1	2.27	0.089	0	0.61	0.755	0	-0.48	0.612	0	-3.32	0.025	-1	2.30	0.001	1	-3.23	0.007	-1
P2RY6	-0.25	0.453	0	0.05	0.928	0	1.02	0.004	1	1.11	0.097	0	0.59	0.002	0	1.23	0.006	1
ELF3	0.76	0.038	0	0.26	0.600	0	0.09	0.808	0	1.56	0.048	1	1.90	0.000	1	0.97	0.001	0
IRGM	-0.08	0.941	0	0.55	0.475	0	0.72	0.041	0	0.71	0.148	0	4.62	0.000	1	1.65	0.000	1
UROC1	-0.04	0.924	0	-0.02	0.975	0	0.06	0.783	0	0.26	0.481	0	0.03	0.857	0	1.09	0.000	1
PDE4D	-0.05	0.910	0	0.17	0.628	0	0.23	0.256	0	-0.08	0.820	0	-0.70	0.015	0	-1.03	0.000	-1
ANO9	-0.62	0.004	0	-0.36	0.146	0	-0.80	0.037	0	-0.25	0.405	0	-1.03	0.000	-1	-0.26	0.173	0
FGF5	0.86	0.171	0	0.44	0.578	0	0.31	0.298	0	-1.14	0.021	-1	0.11	0.535	0	-1.90	0.011	-1
SPAG5	0.43	0.270	0	-0.17	0.744	0	1.14	0.004	1	0.52	0.176	0	0.39	0.042	0	0.51	0.068	0
MSX1	-0.23	0.611	0	0.09	0.875	0	-0.04	0.915	0	-0.28	0.580	0	0.04	0.843	0	-1.72	0.003	-1
DUSP6	0.44	0.113	0	0.16	0.680	0	0.47	0.105	0	0.31	0.356	0	1.36	0.000	1	0.09	0.663	0
HMP19	-0.20	0.627	0	-0.02	0.978	0	0.15	0.566	0	0.17	0.647	0	0.00	0.993	0	1.60	0.000	1
RNASE2	-2.34	0.166	0	-0.23	0.937	0	1.10	0.218	0	2.64	0.001	1	0.76	0.073	0	-1.43	0.003	-1
NAT8	0.01	0.987	0	-0.08	0.913	0	-0.06	0.887	0	0.24	0.718	0	0.09	0.705	0	1.14	0.000	1
CD36	0.35	0.265	0	0.32	0.359	0	-0.38	0.082	0	1.54	0.002	1	-0.57	0.008	0	-0.56	0.004	0
CXCL12	0.38	0.245	0	0.45	0.199	0	1.26	0.003	1	-0.33	0.612	0	0.71	0.000	0	-0.71	0.000	0
STK17B	0.30	0.089	0	0.05	0.871	0	0.65	0.083	0	0.13	0.597	0	0.53	0.000	0	1.48	0.000	1
IL33	0.11	0.786	0	0.45	0.136	0	1.26	0.030	1	0.04	0.947	0	1.10	0.015	1	1.64	0.000	1
CHN2	0.29	0.270	0	0.23	0.435	0	0.09	0.742	0	-0.54	0.206	0	0.13	0.406	0	-1.07	0.005	-1
CHN2	0.29	0.270	0	0.23	0.435	0	0.09	0.742	0	-0.54	0.206	0	0.13	0.406	0	-1.07	0.005	-1

ACCEPTED MANUSCRIPT

ELMOD1	-0.34	0.182	0	0.02	0.970	0	-0.51	0.026	0	-0.83	0.001	0	-0.46	0.010	0	-1.00	0.000	-1
ELMOD1	-0.34	0.182	0	0.02	0.970	0	-0.51	0.026	0	-0.83	0.001	0	-0.46	0.010	0	-1.00	0.000	-1
XDH	0.04	0.906	0	0.02	0.951	0	0.38	0.016	0	0.36	0.160	0	1.44	0.000	1	0.40	0.030	0
IL18RAP	0.35	0.539	0	-0.10	0.896	0	2.47	0.019	1	0.65	0.098	0	1.15	0.000	1	2.96	0.000	1
MYLK2	-0.24	0.547	0	0.03	0.960	0	-1.80	0.001	-1	0.51	0.736	0	-0.49	0.039	0	-0.72	0.020	0
GAN	-0.56	0.004	0	-0.28	0.195	0	-0.83	0.012	0	-0.51	0.047	0	-0.88	0.000	0	-1.81	0.000	-1
KAZALD1	-0.72	0.021	0	-0.69	0.052	0	-0.96	0.014	0	0.25	0.571	0	-2.19	0.000	-1	-0.98	0.003	0
AQP7	0.20	0.772	0	0.52	0.368	0	-0.42	0.108	0	-0.06	0.909	0	-0.12	0.565	0	-1.06	0.001	-1
PRKD1	-0.04	0.933	0	0.26	0.485	0	-0.08	0.814	0	-0.25	0.636	0	0.16	0.362	0	-1.01	0.000	-1
DAPP1	0.20	0.597	0	0.57	0.096	0	0.11	0.717	0	0.09	0.822	0	0.21	0.119	0	1.27	0.000	1
APOL3	0.11	0.814	0	-0.54	0.134	0	0.91	0.012	0	1.40	0.009	1	0.20	0.289	0	1.60	0.000	1
APOL1	0.11	0.814	0	-0.54	0.134	0	0.91	0.012	0	1.40	0.009	1	0.20	0.289	0	1.60	0.000	1
PROB1	-1.06	0.005	-1	-0.26	0.603	0	-1.22	0.014	-1	-1.45	0.001	-1	-0.57	0.001	0	0.02	0.924	0
SPP1	-0.44	0.262	0	0.00	0.998	0	2.01	0.058	0	0.15	0.845	0	0.82	0.063	0	2.58	0.000	1
MYOC	-0.16	0.660	0	0.36	0.265	0	-1.15	0.013	-1	-0.64	0.433	0	-1.41	0.000	-1	-3.00	0.000	-1
FCGR2C	0.33	0.196	0	0.26	0.374	0	1.43	0.002	1	0.64	0.143	0	1.34	0.000	1	0.80	0.078	0
FCGR2A	0.33	0.196	0	0.26	0.374	0	1.43	0.002	1	0.64	0.143	0	1.34	0.000	1	0.80	0.078	0
FCGR2A	0.33	0.196	0	0.26	0.374	0	1.43	0.002	1	0.64	0.143	0	1.34	0.000	1	0.80	0.078	0
FCGR2B	0.33	0.196	0	0.26	0.374	0	1.43	0.002	1	0.64	0.143	0	1.34	0.000	1	0.80	0.078	0
S100A9	3.37	0.000	1	-0.87	0.259	0	3.84	0.004	1	1.48	0.041	1	4.97	0.000	1	4.18	0.000	1
EDN2	-0.13	0.687	0	-0.34	0.198	0	-0.07	0.773	0	-0.55	0.124	0	-0.20	0.376	0	-1.46	0.011	-1
ADGRG2	-0.17	0.767	0	0.30	0.573	0	-0.70	0.012	0	-0.93	0.007	0	0.16	0.299	0	-1.39	0.000	-1
RIPK3	0.12	0.722	0	-0.04	0.937	0	1.25	0.009	1	1.13	0.001	1	0.62	0.000	0	1.44	0.000	1
RGS20	0.10	0.785	0	-0.26	0.377	0	0.39	0.108	0	0.88	0.002	0	0.76	0.001	0	1.33	0.000	1
RNASE2	1.14	0.031	1	-0.14	0.871	0	0.21	0.646	0	0.12	0.920	0	0.28	0.303	0	2.67	0.000	1
ZC3H12A	1.26	0.000	1	-0.51	0.079	0	0.61	0.008	0	0.36	0.109	0	0.61	0.002	0	1.85	0.000	1
SYTL2	1.15	0.013	1	0.69	0.187	0	0.22	0.378	0	-0.93	0.111	0	0.76	0.016	0	-0.66	0.156	0
SLC16A7	1.06	0.002	1	0.67	0.073	0	0.02	0.922	0	-0.88	0.097	0	0.36	0.139	0	-0.56	0.074	0
IRG1	0.23	0.862	0	-0.35	0.780	0	4.52	0.006	1	-0.01	0.981	0	2.53	0.000	1	6.63	0.000	1
EIF2AK2	0.00	0.999	0	0.35	0.513	0	0.27	0.224	0	0.49	0.026	0	2.01	0.000	1	0.46	0.065	0
ST5	0.10	0.811	0	-0.07	0.870	0	0.14	0.439	0	0.01	0.976	0	1.42	0.000	1	0.07	0.533	0
MILR1	-0.09	0.895	0	0.55	0.214	0	0.95	0.063	0	0.46	0.366	0	0.26	0.351	0	2.14	0.000	1

ACCEPTED MANUSCRIPT

ZNF850	0.11	0.812	0	0.12	0.783	0	-0.60	0.010	0	0.04	0.945	0	-0.06	0.838	0	-1.04	0.000	-1
RETN	0.40	0.349	0	1.06	0.017	1	-0.68	0.081	0	0.24	0.836	0	-0.67	0.081	0	-1.07	0.000	-1
SERPINB6	-0.24	0.596	0	0.01	0.990	0	0.82	0.067	0	0.06	0.952	0	0.13	0.430	0	2.36	0.000	1
TGFA	0.19	0.680	0	0.08	0.897	0	0.39	0.072	0	-0.27	0.409	0	1.16	0.000	1	0.44	0.277	0
OGFR	0.00	0.997	0	-0.16	0.684	0	0.31	0.073	0	0.19	0.411	0	1.21	0.000	1	0.95	0.000	0
MEIS1	-0.22	0.575	0	0.30	0.456	0	-0.34	0.023	0	0.08	0.834	0	0.49	0.022	0	-1.26	0.000	-1
COLEC12	0.28	0.343	0	0.57	0.060	0	0.06	0.803	0	1.20	0.035	1	-0.13	0.591	0	-0.71	0.007	0
IL1F10	-0.27	0.660	0	-0.62	0.239	0	-0.24	0.373	0	-1.07	0.008	-1	-1.58	0.000	-1	-2.98	0.000	-1
TRPV2	0.25	0.413	0	-0.22	0.503	0	0.71	0.025	0	0.48	0.081	0	0.23	0.078	0	1.60	0.000	1
SNCAIP	0.36	0.366	0	0.56	0.159	0	0.09	0.790	0	0.22	0.715	0	-0.05	0.840	0	-1.09	0.000	-1
TMEM56-RV	1.03	0.000	1	0.11	0.675	0	-0.06	0.847	0	1.19	0.006	1	-0.66	0.006	0	-0.48	0.014	0
CDK7	0.08	0.782	0	0.16	0.513	0	-0.05	0.845	0	0.07	0.779	0	-0.49	0.122	0	-1.01	0.000	-1
CRYGN	0.34	0.524	0	-0.34	0.544	0	-0.05	0.906	0	1.21	0.039	1	-0.20	0.222	0	-0.58	0.329	0
SCML2	-0.26	0.588	0	-0.16	0.775	0	-0.35	0.114	0	-0.20	0.751	0	-0.40	0.053	0	-1.22	0.000	-1
NKPD1	0.39	0.439	0	-0.44	0.409	0	0.53	0.026	0	0.32	0.368	0	0.38	0.021	0	1.25	0.000	1
RAB20	0.04	0.939	0	-0.25	0.539	0	0.90	0.133	0	0.12	0.849	0	0.34	0.048	0	1.58	0.000	1
CCDC80	0.19	0.621	0	0.34	0.335	0	-0.33	0.192	0	0.77	0.188	0	-0.25	0.413	0	-1.13	0.000	-1
SLC7A8	1.17	0.043	1	0.58	0.430	0	1.29	0.010	1	-1.33	0.023	-1	1.64	0.000	1	0.20	0.662	0
CEACAM1	0.27	0.646	0	1.02	0.043	1	0.22	0.592	0	-0.02	0.981	0	-0.12	0.628	0	0.62	0.097	0
CEACAM5	0.27	0.646	0	1.02	0.043	1	0.22	0.592	0	-0.02	0.981	0	-0.12	0.628	0	0.62	0.097	0
CEACAM6	0.27	0.646	0	1.02	0.043	1	0.22	0.592	0	-0.02	0.981	0	-0.12	0.628	0	0.62	0.097	0
VLDLR	-0.03	0.952	0	0.27	0.457	0	-0.93	0.006	0	0.85	0.056	0	-0.80	0.000	0	-1.37	0.000	-1
SELL	0.15	0.831	0	-0.07	0.928	0	3.38	0.007	1	0.61	0.240	0	1.05	0.001	1	4.39	0.000	1
KRTAP4-1	1.64	0.515	0	0.42	0.907	0	0.36	0.761	0	-3.31	0.092	0	3.30	0.001	1	-3.58	0.006	-1
FCGR3A	-0.03	0.976	0	0.19	0.783	0	1.42	0.097	0	0.19	0.732	0	1.69	0.000	1	3.01	0.000	1
FCGR3B	-0.03	0.976	0	0.19	0.783	0	1.42	0.097	0	0.19	0.732	0	1.69	0.000	1	3.01	0.000	1
NT5E	0.14	0.782	0	0.35	0.408	0	-0.01	0.971	0	-0.43	0.145	0	-0.21	0.283	0	-1.35	0.000	-1
MYL7	-0.02	0.975	0	-0.20	0.734	0	0.11	0.708	0	0.03	0.953	0	0.04	0.864	0	1.23	0.000	1
PLA2R1	0.44	0.147	0	0.64	0.056	0	0.10	0.649	0	0.30	0.376	0	0.05	0.804	0	-0.88	0.001	0
SLC14A1	0.15	0.689	0	0.20	0.583	0	0.03	0.904	0	0.39	0.167	0	0.76	0.000	0	1.38	0.006	1
KIF26B	0.71	0.032	0	0.00	1.000	0	0.69	0.040	0	1.18	0.004	1	0.26	0.152	0	1.25	0.000	1
MFAP2	0.08	0.862	0	0.13	0.742	0	0.46	0.223	0	0.22	0.699	0	1.07	0.000	1	-0.57	0.027	0

ACCEPTED MANUSCRIPT

GPRIN3	0.44	0.154	0	0.32	0.389	0	-0.07	0.811	0	-0.38	0.076	0	0.01	0.971	0	-1.39	0.000	-1
GPR132	0.29	0.440	0	0.22	0.601	0	0.22	0.530	0	0.11	0.848	0	0.57	0.017	0	2.17	0.000	1
JAK3	0.05	0.921	0	-0.10	0.852	0	0.49	0.032	0	-0.09	0.755	0	0.20	0.119	0	1.18	0.000	1
PCDH7	0.00	0.997	0	0.23	0.276	0	-0.22	0.185	0	-0.47	0.039	0	-0.05	0.775	0	-1.31	0.000	-1
DMPK	-0.42	0.166	0	-0.01	0.983	0	-0.87	0.008	0	-1.02	0.010	-1	-0.53	0.010	0	-1.22	0.000	-1
HAS2	0.38	0.512	0	0.79	0.147	0	0.90	0.058	0	0.76	0.063	0	1.96	0.000	1	-0.37	0.503	0
IRF8	-0.33	0.641	0	-0.14	0.878	0	0.86	0.006	0	0.51	0.302	0	0.82	0.000	0	1.61	0.000	1
RGS1	0.60	0.110	0	-0.03	0.969	0	0.45	0.232	0	0.76	0.036	0	1.26	0.000	1	3.12	0.000	1
GIMAP6	0.20	0.413	0	0.36	0.146	0	0.26	0.147	0	0.80	0.016	0	-0.13	0.528	0	1.41	0.000	1
XIRP1	-0.25	0.298	0	0.15	0.611	0	-0.01	0.982	0	1.09	0.161	0	-0.47	0.053	0	-1.12	0.000	-1
GOSR2	-0.10	0.708	0	-0.19	0.415	0	0.20	0.288	0	0.20	0.366	0	0.17	0.198	0	1.10	0.000	1
LSS	0.37	0.130	0	-0.11	0.750	0	-0.20	0.391	0	1.43	0.002	1	-0.70	0.000	0	-0.31	0.113	0
PLA2G2D	0.34	0.176	0	0.32	0.252	0	-0.37	0.275	0	1.14	0.013	1	-0.22	0.136	0	0.35	0.317	0
GSAP	0.13	0.721	0	0.18	0.588	0	0.87	0.023	0	0.60	0.026	0	1.81	0.000	1	1.44	0.000	1
HFE2	-0.26	0.568	0	0.19	0.700	0	-1.00	0.005	-1	0.79	0.319	0	-0.71	0.010	0	-0.91	0.010	0
SOCS3	0.42	0.278	0	-0.30	0.503	0	0.89	0.064	0	-0.23	0.612	0	2.52	0.000	1	1.98	0.000	1
OSBPL8	0.20	0.469	0	0.25	0.393	0	0.33	0.116	0	0.09	0.785	0	1.22	0.000	1	0.24	0.104	0
LOXL3	-0.52	0.019	0	-0.20	0.478	0	0.08	0.718	0	0.15	0.716	0	-0.16	0.345	0	1.17	0.002	1
APOL3	0.09	0.924	0	0.05	0.962	0	-0.05	0.947	0	0.43	0.542	0	0.25	0.628	0	1.31	0.000	1
APOL1	0.09	0.924	0	0.05	0.962	0	-0.05	0.947	0	0.43	0.542	0	0.25	0.628	0	1.31	0.000	1
ASB4	-0.17	0.719	0	0.14	0.778	0	0.06	0.871	0	-1.05	0.010	-1	0.14	0.443	0	-0.68	0.040	0
CRLF2	0.02	0.983	0	-0.42	0.469	0	0.45	0.055	0	0.08	0.893	0	0.06	0.771	0	1.05	0.000	1
KIF13A	-0.37	0.029	0	-0.22	0.252	0	-0.51	0.013	0	-0.14	0.582	0	-0.74	0.000	0	-1.06	0.000	-1
ITGA8	0.14	0.632	0	0.35	0.151	0	-0.05	0.871	0	0.41	0.334	0	0.08	0.781	0	-2.05	0.000	-1
SDC3	-0.10	0.861	0	-0.05	0.944	0	0.34	0.097	0	-0.11	0.822	0	0.15	0.352	0	1.02	0.026	1
CD40	0.08	0.883	0	0.09	0.870	0	0.87	0.005	0	0.44	0.296	0	0.92	0.000	0	2.04	0.000	1
CCR7	-0.11	0.814	0	-0.20	0.639	0	0.67	0.030	0	0.30	0.518	0	0.02	0.912	0	2.40	0.000	1
IKBKE	-0.08	0.844	0	-0.17	0.618	0	-0.09	0.735	0	-0.08	0.841	0	0.43	0.024	0	1.53	0.000	1
SELPLG	0.06	0.914	0	0.10	0.848	0	1.22	0.007	1	0.55	0.160	0	0.29	0.163	0	1.52	0.000	1
MLKL	0.41	0.096	0	0.63	0.025	0	0.69	0.018	0	1.41	0.001	1	2.05	0.000	1	1.56	0.000	1
ST6GAL1	0.36	0.113	0	0.20	0.476	0	0.12	0.553	0	-0.45	0.286	0	-0.23	0.228	0	-1.06	0.000	-1
SRPX2	0.07	0.832	0	0.42	0.103	0	0.65	0.020	0	1.43	0.019	1	0.41	0.117	0	0.62	0.004	0

ACCEPTED MANUSCRIPT

PIM2	-0.06	0.909	0	-0.28	0.510	0	0.02	0.944	0	0.00	0.996	0	0.40	0.021	0	1.09	0.000	1
TIMP2	-0.12	0.591	0	0.18	0.432	0	-0.22	0.215	0	-0.10	0.805	0	-0.07	0.723	0	-1.02	0.000	-1
CENPA	0.35	0.364	0	-0.17	0.731	0	1.06	0.002	1	0.35	0.473	0	0.50	0.052	0	0.53	0.014	0
CD37	-0.16	0.632	0	-0.22	0.495	0	0.34	0.080	0	0.03	0.955	0	-0.02	0.949	0	1.07	0.012	1
CCL4	0.01	0.995	0	0.24	0.651	0	3.19	0.014	1	0.37	0.519	0	2.29	0.000	1	3.85	0.000	1
FETUB	1.43	0.000	1	-0.21	0.536	0	3.61	0.000	1	1.70	0.002	1	1.16	0.007	1	5.50	0.000	1
CD5	-0.02	0.955	0	-0.15	0.599	0	0.47	0.113	0	0.38	0.193	0	-0.05	0.834	0	1.65	0.000	1
HMGCS1	0.47	0.286	0	0.16	0.796	0	-0.24	0.126	0	1.02	0.001	1	-0.58	0.001	0	-0.36	0.017	0
FRAS1	-0.23	0.584	0	-0.43	0.282	0	-0.29	0.417	0	-0.42	0.608	0	-0.43	0.036	0	-1.04	0.002	-1
CACHD1	-0.17	0.632	0	0.06	0.899	0	-0.63	0.020	0	-0.34	0.112	0	-0.30	0.059	0	-1.19	0.000	-1
ABHD3	0.17	0.629	0	0.57	0.060	0	-0.98	0.002	0	0.58	0.155	0	-0.48	0.031	0	-1.37	0.000	-1
PRLR	-0.11	0.880	0	0.21	0.757	0	-0.29	0.408	0	0.56	0.070	0	-1.16	0.002	-1	-1.27	0.000	-1
ZNF318	-0.25	0.435	0	0.06	0.907	0	-0.64	0.004	0	-0.18	0.519	0	-0.51	0.003	0	-1.03	0.000	-1
MTHFD1L	-0.06	0.882	0	-0.28	0.377	0	0.28	0.267	0	1.21	0.009	1	0.08	0.564	0	1.18	0.000	1
CD84	-0.01	0.989	0	0.00	0.999	0	1.06	0.036	1	0.23	0.547	0	0.76	0.001	0	1.40	0.005	1
LHPP	0.69	0.013	0	-0.05	0.921	0	-0.58	0.103	0	1.26	0.014	1	-1.47	0.000	-1	-0.26	0.385	0
MEFV	0.28	0.578	0	0.37	0.452	0	1.39	0.079	0	-0.02	0.989	0	0.99	0.000	0	2.94	0.000	1
C19orf38	0.00	0.997	0	0.17	0.750	0	1.47	0.046	1	-0.04	0.962	0	0.74	0.000	0	2.49	0.000	1
RTN2	-0.51	0.259	0	0.08	0.916	0	-1.00	0.004	0	0.46	0.567	0	-1.04	0.001	-1	-0.74	0.024	0
CITED4	-0.50	0.243	0	-0.42	0.374	0	-0.58	0.096	0	-1.29	0.001	-1	-0.11	0.538	0	-0.89	0.006	0
KRT32	1.39	0.020	1	0.33	0.698	0	-0.25	0.722	0	-1.96	0.008	-1	1.14	0.001	1	-2.88	0.000	-1
CXCL10	0.08	0.964	0	0.63	0.643	0	0.47	0.127	0	1.47	0.036	1	6.18	0.000	1	3.00	0.000	1
TRIM5	-0.28	0.754	0	0.55	0.490	0	1.02	0.129	0	0.27	0.796	0	2.39	0.000	1	1.09	0.055	0
SH2D1A	0.22	0.684	0	0.05	0.940	0	-0.12	0.589	0	-0.04	0.952	0	0.13	0.475	0	3.35	0.000	1
FCGR2C	-0.66	0.030	0	0.01	0.992	0	0.68	0.013	0	0.04	0.972	0	1.14	0.000	1	0.45	0.154	0
FCGR2A	-0.66	0.030	0	0.01	0.992	0	0.68	0.013	0	0.04	0.972	0	1.14	0.000	1	0.45	0.154	0
FCGR2A	-0.66	0.030	0	0.01	0.992	0	0.68	0.013	0	0.04	0.972	0	1.14	0.000	1	0.45	0.154	0
FCGR2B	-0.66	0.030	0	0.01	0.992	0	0.68	0.013	0	0.04	0.972	0	1.14	0.000	1	0.45	0.154	0
LYN	-0.09	0.819	0	0.01	0.980	0	1.28	0.025	1	0.88	0.063	0	1.00	0.000	0	1.56	0.001	1
IL27RA	0.49	0.137	0	0.18	0.681	0	0.74	0.002	0	0.47	0.150	0	0.34	0.026	0	1.09	0.000	1
MAL	-0.25	0.394	0	0.36	0.225	0	-0.24	0.352	0	-0.31	0.509	0	-0.32	0.025	0	-1.31	0.000	-1
ARHGEF28	-0.26	0.175	0	-0.10	0.692	0	-0.49	0.017	0	-0.88	0.003	0	-0.62	0.001	0	-1.57	0.000	-1

ACCEPTED MANUSCRIPT

SLAMF6	0.21	0.629	0	0.18	0.701	0	1.02	0.085	0	0.03	0.957	0	0.15	0.237	0	2.54	0.000	1
NR1H3	0.25	0.513	0	0.21	0.611	0	-0.30	0.232	0	0.10	0.843	0	-0.08	0.616	0	1.71	0.000	1
LAT2	-0.06	0.878	0	-0.13	0.706	0	0.21	0.268	0	0.31	0.194	0	0.03	0.889	0	1.70	0.000	1
BACE1	0.00	0.993	0	0.15	0.629	0	0.11	0.628	0	0.04	0.945	0	-0.03	0.860	0	-1.02	0.000	-1
RUNX3	-0.05	0.911	0	-0.17	0.672	0	-0.01	0.991	0	0.11	0.808	0	0.42	0.017	0	1.57	0.000	1
CCDC62	-0.41	0.141	0	-0.06	0.905	0	-0.61	0.014	0	-0.14	0.813	0	-0.17	0.374	0	-1.03	0.000	-1
ELOVL7	0.52	0.013	0	0.08	0.792	0	0.39	0.030	0	1.15	0.003	1	0.42	0.002	0	0.51	0.006	0
BUB1B	0.50	0.051	0	-0.22	0.507	0	1.18	0.002	1	0.72	0.052	0	0.61	0.005	0	0.73	0.006	0
CCL7	-0.12	0.833	0	0.24	0.614	0	1.80	0.002	1	1.22	0.004	1	2.42	0.013	1	2.54	0.001	1
ADM	-0.43	0.237	0	-0.54	0.162	0	1.01	0.014	1	-0.23	0.790	0	0.00	0.992	0	0.66	0.046	0
TCF23	0.45	0.171	0	0.25	0.541	0	1.19	0.002	1	-0.14	0.760	0	0.11	0.487	0	2.08	0.000	1
ENTPD1	0.18	0.506	0	0.36	0.157	0	1.20	0.009	1	0.86	0.002	0	1.16	0.000	1	1.08	0.001	1
IRF7	0.20	0.697	0	0.10	0.871	0	0.69	0.068	0	0.06	0.916	0	1.40	0.000	1	2.03	0.000	1
RNASE2	-0.17	0.839	0	0.27	0.728	0	-0.05	0.924	0	0.88	0.301	0	0.65	0.211	0	-1.40	0.006	-1
NAAA	0.07	0.819	0	0.28	0.264	0	0.59	0.013	0	0.87	0.001	0	0.56	0.001	0	1.13	0.000	1
ITGAM	0.47	0.048	0	0.16	0.607	0	1.55	0.026	1	0.84	0.068	0	0.83	0.001	0	1.41	0.005	1
KIF11	0.59	0.111	0	-0.04	0.954	0	1.49	0.001	1	0.84	0.060	0	0.67	0.001	0	0.91	0.006	0
ALDH1A3	1.28	0.002	1	0.34	0.499	0	1.72	0.001	1	0.27	0.793	0	1.36	0.000	1	0.12	0.827	0
PAPLN	-1.22	0.001	-1	-0.91	0.016	0	-1.31	0.008	-1	-0.90	0.049	0	-0.35	0.035	0	-0.19	0.200	0
ARID5A	0.08	0.892	0	-0.16	0.774	0	0.52	0.187	0	-0.63	0.163	0	1.02	0.000	1	1.04	0.000	1
GNG4	-0.31	0.258	0	-0.06	0.899	0	0.34	0.067	0	-0.74	0.087	0	-0.01	0.956	0	-2.91	0.000	-1
SNX11	0.17	0.566	0	-0.28	0.327	0	0.16	0.417	0	0.30	0.257	0	0.16	0.474	0	1.00	0.000	1
CLEC4G	-0.22	0.671	0	0.01	0.994	0	-0.32	0.369	0	-0.64	0.069	0	-0.08	0.702	0	-1.01	0.001	-1
CCBE1	-0.20	0.482	0	0.01	0.990	0	0.43	0.127	0	1.50	0.001	1	0.48	0.008	0	1.18	0.000	1
SOAT1	0.90	0.027	0	0.56	0.037	0	0.21	0.551	0	1.57	0.001	1	-0.69	0.003	0	-0.12	0.601	0
CTSG	0.11	0.820	0	0.01	0.986	0	0.33	0.355	0	0.21	0.569	0	0.45	0.181	0	1.69	0.000	1
GIMAP1	-0.15	0.718	0	0.03	0.948	0	0.41	0.227	0	0.14	0.818	0	0.25	0.226	0	1.07	0.000	1
IL13	-0.09	0.858	0	0.03	0.965	0	-0.03	0.950	0	0.48	0.521	0	1.32	0.000	1	0.90	0.008	0
TNFSF10	0.65	0.101	0	0.71	0.117	0	0.18	0.598	0	0.58	0.235	0	1.95	0.000	1	1.12	0.000	1
UNC5B	-0.14	0.743	0	-0.51	0.144	0	-0.24	0.227	0	-0.79	0.017	0	0.07	0.685	0	-1.31	0.003	-1
SLC5A8	1.63	0.000	1	-0.02	0.967	0	1.41	0.001	1	0.68	0.024	0	2.04	0.000	1	1.38	0.001	1
PHKG1	-0.01	0.987	0	0.68	0.038	0	-1.21	0.003	-1	0.70	0.443	0	-0.23	0.422	0	-1.03	0.002	-1

CXCL9	0.23	0.908	0	1.11	0.445	0	0.75	0.079	0	1.97	0.022	1	6.53	0.000	1	3.45	0.000	1
TENM4	-0.24	0.304	0	-0.35	0.154	0	-0.13	0.494	0	-0.19	0.451	0	0.15	0.362	0	-1.08	0.000	-1
AREG	1.26	0.001	1	0.34	0.445	0	1.86	0.011	1	0.10	0.856	0	3.52	0.000	1	1.06	0.047	1
ACAA1	0.03	0.963	0	0.42	0.311	0	-0.43	0.237	0	0.21	0.812	0	-0.57	0.044	0	-1.02	0.010	-1
CYP2A7	-0.26	0.626	0	-0.22	0.704	0	-0.21	0.627	0	-0.30	0.550	0	-0.22	0.220	0	1.73	0.000	1
TYR	1.62	0.018	1	0.31	0.761	0	0.28	0.328	0	-0.95	0.338	0	-0.74	0.028	0	-3.38	0.002	-1
UBE2L6	-0.22	0.605	0	0.07	0.902	0	0.66	0.033	0	0.46	0.443	0	1.36	0.000	1	1.63	0.001	1
IKZF3	1.66	0.001	1	-0.01	0.991	0	1.22	0.002	1	0.80	0.155	0	0.25	0.121	0	2.60	0.000	1
FZD5	0.33	0.286	0	0.04	0.941	0	0.01	0.977	0	-0.44	0.249	0	0.29	0.094	0	-1.08	0.008	-1
FAM72A	0.06	0.911	0	0.16	0.725	0	-0.18	0.619	0	-0.34	0.578	0	-0.15	0.673	0	1.17	0.001	1
FAM72A	0.06	0.911	0	0.16	0.725	0	-0.18	0.619	0	-0.34	0.578	0	-0.15	0.673	0	1.17	0.001	1
FAM72A	0.06	0.911	0	0.16	0.725	0	-0.18	0.619	0	-0.34	0.578	0	-0.15	0.673	0	1.17	0.001	1
ADAMTS1	-0.99	0.000	0	-0.82	0.007	0	0.17	0.385	0	0.57	0.067	0	1.04	0.000	1	0.18	0.539	0
FGR	0.21	0.579	0	0.08	0.878	0	1.69	0.016	1	0.44	0.432	0	0.55	0.026	0	2.96	0.000	1
UBA7	-0.14	0.831	0	0.14	0.834	0	0.24	0.292	0	0.41	0.226	0	0.53	0.002	0	1.56	0.000	1
UBASH3B	-0.19	0.421	0	-0.18	0.483	0	0.31	0.116	0	0.02	0.973	0	0.28	0.264	0	1.05	0.000	1
ABCE1	0.22	0.322	0	0.18	0.489	0	0.39	0.041	0	0.39	0.035	0	0.15	0.323	0	-1.27	0.000	-1
KLRC4-KLR	0.84	0.020	0	0.27	0.578	0	0.00	0.988	0	-0.49	0.467	0	1.52	0.000	1	2.82	0.000	1
KRT35	2.26	0.054	0	0.42	0.821	0	0.25	0.752	0	-2.29	0.054	0	1.49	0.001	1	-3.39	0.012	-1
IBSP	-1.41	0.008	-1	-0.23	0.765	0	-1.14	0.043	-1	0.19	0.705	0	-0.04	0.902	0	0.19	0.126	0
STOM	0.24	0.413	0	-0.13	0.725	0	0.79	0.011	0	0.80	0.011	0	1.58	0.000	1	1.66	0.000	1
AIF1L	-0.45	0.178	0	-0.45	0.221	0	-0.23	0.302	0	-0.11	0.793	0	-0.43	0.086	0	-1.03	0.008	-1
TNFRSF1B	0.15	0.765	0	-0.11	0.848	0	1.14	0.047	1	0.01	0.986	0	1.11	0.001	1	1.57	0.000	1
MYBPC2	0.36	0.464	0	0.55	0.250	0	-1.25	0.014	-1	1.51	0.343	0	-0.71	0.206	0	-0.70	0.007	0
MARC1	-0.10	0.805	0	0.14	0.726	0	0.33	0.153	0	0.02	0.977	0	0.26	0.102	0	1.54	0.002	1
CIDEA	0.51	0.005	0	0.25	0.228	0	-0.66	0.043	0	0.95	0.004	0	-1.14	0.000	-1	-0.63	0.014	0
SHH	1.24	0.005	1	0.31	0.600	0	0.17	0.657	0	-0.45	0.802	0	0.20	0.145	0	-2.59	0.006	-1
HMGCS2	-0.32	0.596	0	-0.25	0.709	0	-0.18	0.471	0	-1.80	0.135	0	-0.68	0.005	0	-1.95	0.000	-1
GPSM3	-0.18	0.784	0	-0.37	0.506	0	0.38	0.190	0	0.25	0.693	0	0.01	0.966	0	1.45	0.000	1
PDPN	0.54	0.013	0	0.42	0.083	0	1.24	0.004	1	0.79	0.144	0	1.37	0.000	1	0.54	0.001	0
KLK9	-0.24	0.390	0	-0.71	0.015	0	1.60	0.001	1	1.32	0.003	1	1.54	0.000	1	1.96	0.000	1
LYG2	2.34	0.047	1	0.54	0.760	0	-0.02	0.987	0	-2.55	0.157	0	1.67	0.000	1	-3.70	0.007	-1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

RASAL3	0.20	0.723	0	0.06	0.938	0	0.53	0.051	0	0.36	0.381	0	0.14	0.500	0	1.95	0.000	1
TMEM150C	0.20	0.693	0	0.22	0.667	0	0.14	0.784	0	1.10	0.032	1	0.23	0.258	0	0.67	0.002	0
CBS	-0.24	0.414	0	0.07	0.874	0	-1.03	0.009	-1	-0.77	0.063	0	-0.57	0.007	0	-2.35	0.000	-1
TGFB1	0.00	0.999	0	-0.26	0.528	0	0.60	0.022	0	0.42	0.251	0	0.42	0.034	0	1.08	0.000	1
TMEM173	0.43	0.143	0	0.45	0.168	0	1.24	0.004	1	0.90	0.054	0	3.65	0.000	1	1.29	0.000	1
CORO1A	0.28	0.633	0	-0.09	0.912	0	0.71	0.029	0	0.14	0.824	0	0.47	0.009	0	1.81	0.000	1
HRC	-0.13	0.821	0	0.26	0.615	0	-1.02	0.006	-1	0.28	0.771	0	-1.32	0.000	-1	-0.69	0.035	0
PTPN6	-0.26	0.211	0	0.00	0.991	0	0.32	0.246	0	-0.08	0.746	0	-0.04	0.833	0	1.26	0.000	1
CA3	0.01	0.977	0	0.64	0.031	0	-0.62	0.019	0	1.33	0.262	0	-0.60	0.004	0	-1.12	0.000	-1
APOBEC2	-0.18	0.689	0	0.27	0.507	0	-0.79	0.050	0	1.61	0.218	0	-1.12	0.004	-1	-1.06	0.001	-1
PRSS27	0.81	0.038	0	-0.92	0.043	0	1.20	0.004	1	1.47	0.001	1	1.47	0.000	1	3.92	0.000	1
CLEC12B	0.16	0.740	0	0.04	0.950	0	1.07	0.010	1	0.36	0.497	0	0.07	0.785	0	0.52	0.027	0
ZBTB20	-0.14	0.829	0	0.50	0.314	0	-0.34	0.059	0	-0.18	0.584	0	-0.52	0.025	0	-1.26	0.000	-1
IGLC3	0.17	0.669	0	0.26	0.500	0	-0.04	0.907	0	-0.29	0.326	0	-0.11	0.430	0	1.05	0.004	1
STOX1	1.22	0.141	0	0.42	0.715	0	0.10	0.828	0	-1.94	0.027	-1	0.24	0.216	0	-1.46	0.043	-1
SLC45A2	0.87	0.129	0	0.20	0.817	0	0.17	0.699	0	-1.12	0.206	0	-0.03	0.892	0	-1.46	0.034	-1
VAV1	0.36	0.288	0	-0.29	0.454	0	1.09	0.023	1	0.59	0.043	0	0.52	0.043	0	2.17	0.000	1
LOX	0.16	0.699	0	0.28	0.460	0	1.07	0.013	1	1.91	0.046	1	1.02	0.002	1	0.59	0.033	0
RASGRP1	-0.22	0.461	0	0.06	0.892	0	-0.53	0.039	0	-0.32	0.210	0	-0.30	0.087	0	1.08	0.000	1
APBB1IP	0.24	0.230	0	0.18	0.426	0	1.00	0.007	1	0.85	0.084	0	0.38	0.020	0	1.26	0.000	1
CBX7	-0.66	0.007	0	-0.30	0.301	0	-0.74	0.020	0	-0.72	0.005	0	-0.40	0.004	0	-1.02	0.000	-1
ADTRP	0.71	0.001	0	0.24	0.290	0	0.16	0.589	0	0.24	0.519	0	-1.04	0.000	-1	-0.21	0.046	0
STRA6	0.91	0.073	0	-0.08	0.930	0	-0.19	0.549	0	-1.02	0.051	0	-0.31	0.106	0	-1.26	0.045	-1
KIF15	0.63	0.241	0	0.07	0.941	0	1.22	0.002	1	0.82	0.039	0	0.51	0.012	0	-0.13	0.374	0
VNN3	1.51	0.000	1	0.26	0.611	0	-0.09	0.788	0	1.11	0.023	1	0.02	0.952	0	1.58	0.000	1
TAGLN2	0.66	0.020	0	0.15	0.715	0	1.18	0.001	1	0.16	0.720	0	0.50	0.042	0	0.37	0.021	0
SERPINH1	0.46	0.369	0	0.24	0.715	0	1.15	0.002	1	0.29	0.533	0	0.51	0.003	0	-0.27	0.210	0
DENND4A	0.34	0.364	0	0.19	0.677	0	0.87	0.014	0	0.37	0.062	0	0.67	0.014	0	1.26	0.001	1
AR	-0.02	0.946	0	0.26	0.255	0	-0.80	0.009	0	0.38	0.113	0	-1.48	0.000	-1	-1.14	0.000	-1
FOXQ1	-0.55	0.196	0	-0.35	0.502	0	-0.80	0.023	0	-0.74	0.011	0	-1.01	0.000	-1	-1.09	0.001	-1
MAB21L3	0.53	0.051	0	0.11	0.795	0	0.09	0.805	0	0.25	0.632	0	0.11	0.701	0	1.24	0.000	1
CYP2E1	-0.35	0.675	0	0.48	0.544	0	-1.62	0.026	-1	1.47	0.237	0	-0.39	0.307	0	-1.83	0.010	-1

ACCEPTED MANUSCRIPT

PARM1	0.71	0.030	0	0.27	0.529	0	1.23	0.014	1	0.22	0.674	0	0.86	0.001	0	0.25	0.286	0
CCR2	0.68	0.037	0	0.58	0.129	0	0.99	0.014	0	1.60	0.056	0	1.44	0.000	1	1.81	0.000	1
SEC14L4	0.64	0.005	0	0.19	0.515	0	-0.72	0.025	0	1.08	0.020	1	-0.90	0.002	0	-0.19	0.448	0
ABLIM2	-0.10	0.783	0	0.05	0.921	0	-0.30	0.207	0	-1.02	0.022	-1	-0.18	0.101	0	-0.71	0.006	0
GCA	0.10	0.856	0	0.50	0.198	0	0.32	0.533	0	0.05	0.950	0	0.20	0.403	0	1.09	0.000	1
S100B	-0.36	0.177	0	0.25	0.432	0	-0.38	0.311	0	-0.58	0.161	0	-1.34	0.000	-1	-1.23	0.000	-1
MYH11	-0.09	0.912	0	0.33	0.591	0	0.07	0.795	0	0.17	0.682	0	0.41	0.010	0	-1.02	0.003	-1
COL12A1	0.49	0.033	0	0.03	0.948	0	2.61	0.001	1	0.75	0.005	0	1.70	0.000	1	0.84	0.012	0
DCP2	0.08	0.849	0	0.10	0.810	0	-0.06	0.787	0	0.13	0.568	0	0.67	0.001	0	1.31	0.000	1
SPIB	-0.31	0.388	0	-0.19	0.663	0	-0.31	0.468	0	-0.20	0.548	0	0.14	0.338	0	1.34	0.000	1
FAM221A	-0.28	0.423	0	-0.15	0.731	0	-0.47	0.025	0	-0.59	0.065	0	-0.29	0.142	0	-1.09	0.000	-1
TBX1	0.11	0.828	0	-0.21	0.631	0	-0.15	0.625	0	-0.92	0.072	0	-0.13	0.549	0	-1.65	0.001	-1
LGMN	0.14	0.712	0	-0.18	0.618	0	1.21	0.004	1	0.20	0.713	0	0.79	0.000	0	0.85	0.013	0
PADI4	1.04	0.075	0	0.57	0.443	0	0.58	0.015	0	-0.49	0.423	0	0.40	0.027	0	-1.46	0.001	-1
PCK1	-0.08	0.941	0	-0.03	0.981	0	-0.87	0.056	0	0.39	0.717	0	-0.01	0.961	0	-2.78	0.000	-1
EOMES	0.00	0.998	0	-0.15	0.760	0	-0.21	0.491	0	0.29	0.641	0	0.09	0.591	0	2.34	0.000	1
IFITM5	-0.09	0.837	0	-0.41	0.229	0	0.24	0.370	0	-0.05	0.944	0	0.29	0.190	0	1.23	0.000	1
HOXA3	0.24	0.353	0	0.14	0.660	0	0.11	0.646	0	0.03	0.961	0	-0.04	0.866	0	-1.20	0.000	-1
TRIL	0.29	0.533	0	0.38	0.424	0	-0.15	0.548	0	0.02	0.969	0	-0.05	0.831	0	-2.11	0.000	-1
STC1	0.06	0.943	0	-0.08	0.925	0	1.81	0.009	1	0.74	0.297	0	0.79	0.005	0	0.72	0.005	0
BTK	-0.37	0.142	0	-0.22	0.464	0	0.53	0.065	0	0.53	0.223	0	0.46	0.021	0	1.32	0.005	1
HCST	-0.40	0.158	0	-0.27	0.433	0	0.54	0.152	0	0.04	0.954	0	0.10	0.657	0	1.75	0.000	1
MN1	-0.32	0.510	0	-0.43	0.375	0	-0.31	0.142	0	0.07	0.885	0	-0.65	0.004	0	-1.03	0.001	-1
EPHB1	0.64	0.106	0	0.28	0.581	0	0.62	0.049	0	-0.84	0.251	0	0.32	0.093	0	-2.02	0.001	-1
RAI2	0.09	0.862	0	-0.08	0.878	0	-0.23	0.461	0	0.05	0.936	0	-0.84	0.001	0	-1.12	0.000	-1
MLANA	0.74	0.099	0	0.10	0.903	0	-0.64	0.056	0	-1.76	0.018	-1	-0.61	0.005	0	-3.24	0.002	-1
MYPN	-0.42	0.166	0	0.35	0.320	0	-1.17	0.005	-1	0.42	0.639	0	-0.94	0.004	0	-0.87	0.010	0
CLEC4D	0.15	0.854	0	-0.63	0.319	0	3.69	0.007	1	0.95	0.162	0	2.33	0.001	1	4.81	0.000	1
COX7A1	-0.10	0.892	0	0.38	0.496	0	-1.18	0.007	-1	-0.05	0.923	0	-1.63	0.001	-1	-0.76	0.023	0
APOL4	-0.29	0.582	0	-0.01	0.987	0	-0.13	0.653	0	-0.40	0.650	0	0.32	0.100	0	1.25	0.000	1
APOL2	-0.29	0.582	0	-0.01	0.987	0	-0.13	0.653	0	-0.40	0.650	0	0.32	0.100	0	1.25	0.000	1
CARHSP1	0.14	0.753	0	-0.10	0.848	0	0.31	0.070	0	0.11	0.801	0	0.65	0.036	0	1.06	0.000	1

ACCEPTED MANUSCRIPT

H2AFX	0.75	0.262	0	-0.46	0.568	0	1.14	0.001	1	0.04	0.963	0	0.71	0.000	0	0.24	0.349	0
LIPK	-0.26	0.386	0	-0.22	0.519	0	-0.40	0.161	0	1.00	0.008	1	-0.93	0.017	0	0.67	0.004	0
SEMA6A	0.51	0.044	0	0.42	0.148	0	0.04	0.864	0	-0.23	0.650	0	0.18	0.409	0	-1.11	0.001	-1
TUBB3	0.82	0.126	0	-0.22	0.780	0	1.82	0.001	1	-0.68	0.288	0	1.17	0.000	1	0.70	0.342	0
MZB1	-0.14	0.677	0	0.19	0.572	0	-0.25	0.377	0	-0.26	0.578	0	-0.01	0.980	0	3.78	0.000	1
FAM3B	-0.41	0.395	0	-0.22	0.717	0	-0.31	0.463	0	1.89	0.000	1	-1.55	0.000	-1	1.55	0.001	1
MS4A6A	-0.06	0.924	0	-0.11	0.832	0	1.69	0.011	1	1.44	0.072	0	1.47	0.000	1	1.58	0.001	1
MS4A6E	-0.06	0.924	0	-0.11	0.832	0	1.69	0.011	1	1.44	0.072	0	1.47	0.000	1	1.58	0.001	1
SLC24A3	-1.00	0.000	0	-0.46	0.038	0	-0.88	0.035	0	-1.70	0.001	-1	-1.24	0.000	-1	-2.18	0.000	-1
SKAP1	-0.11	0.812	0	-0.17	0.704	0	0.12	0.757	0	0.21	0.709	0	0.21	0.367	0	2.52	0.000	1
HAVCR2	0.19	0.713	0	0.25	0.613	0	0.78	0.124	0	0.33	0.434	0	0.55	0.010	0	1.95	0.000	1
WDR38	0.08	0.878	0	0.04	0.951	0	0.02	0.955	0	-0.42	0.390	0	0.08	0.597	0	-1.10	0.000	-1
HSD3B2	0.06	0.957	0	0.50	0.521	0	-0.30	0.373	0	1.78	0.001	1	-0.36	0.102	0	-0.57	0.076	0
CYP1A1	1.73	0.000	1	-0.40	0.306	0	-0.19	0.494	0	1.53	0.010	1	-0.59	0.000	0	-0.85	0.001	0
SLFN12	-0.09	0.862	0	-0.05	0.930	0	2.26	0.012	1	0.32	0.488	0	2.31	0.000	1	2.11	0.003	1
TNNT3	-0.15	0.606	0	0.38	0.137	0	-1.27	0.003	-1	1.33	0.497	0	-0.58	0.012	0	-0.34	0.002	0
TMEM47	0.36	0.540	0	1.22	0.025	1	-0.07	0.850	0	0.25	0.678	0	-0.49	0.008	0	-0.80	0.000	0
MGLL	0.80	0.000	0	-0.01	0.974	0	-0.28	0.316	0	1.23	0.002	1	-0.98	0.000	0	-0.38	0.108	0
SERPINE1	-0.16	0.791	0	-0.41	0.427	0	1.92	0.028	1	1.74	0.031	1	0.51	0.018	0	1.21	0.000	1
CDH5	0.15	0.706	0	0.53	0.110	0	1.05	0.004	1	0.38	0.243	0	0.18	0.272	0	0.12	0.377	0
TRIM14	-0.22	0.530	0	-0.41	0.215	0	0.14	0.612	0	0.31	0.566	0	0.39	0.027	0	1.20	0.009	1
DKK2	0.50	0.104	0	0.56	0.107	0	-0.09	0.724	0	0.42	0.658	0	-0.43	0.128	0	-1.37	0.001	-1
GALNT6	0.48	0.103	0	-0.62	0.060	0	1.70	0.000	1	1.15	0.003	1	0.95	0.000	0	1.91	0.000	1
MYL2	-0.30	0.451	0	-0.26	0.553	0	-0.47	0.038	0	0.09	0.863	0	-1.73	0.000	-1	-0.26	0.154	0
MYL3	-0.37	0.418	0	-0.32	0.531	0	-0.67	0.009	0	-0.25	0.569	0	-1.33	0.000	-1	0.34	0.001	0
MYBPC1	-0.01	0.990	0	0.61	0.251	0	-1.02	0.004	-1	0.00	0.999	0	-0.82	0.001	0	-0.96	0.005	0
CACNA2D3	0.05	0.908	0	0.12	0.756	0	0.28	0.242	0	-0.17	0.716	0	-0.16	0.387	0	-2.21	0.000	-1
NOSTRIN	0.04	0.942	0	0.13	0.746	0	0.38	0.078	0	0.56	0.086	0	0.01	0.951	0	1.07	0.000	1
SORBS1	-0.27	0.306	0	0.18	0.570	0	-0.72	0.003	0	-0.39	0.153	0	-0.37	0.002	0	-1.52	0.000	-1
WNK2	-0.80	0.000	0	-0.24	0.317	0	-1.07	0.006	-1	-1.09	0.001	-1	-0.50	0.003	0	-1.42	0.000	-1
DLX3	0.31	0.661	0	-0.10	0.919	0	-0.15	0.551	0	-1.46	0.009	-1	0.09	0.760	0	-1.28	0.008	-1
DCUN1D5	0.09	0.815	0	-0.09	0.828	0	0.05	0.805	0	0.26	0.234	0	-0.01	0.948	0	-1.32	0.000	-1

MFAP4	-0.13	0.670	0	0.54	0.038	0	1.01	0.007	1	1.00	0.027	1	1.17	0.001	1	-0.75	0.004	0
FOLR1	0.18	0.655	0	0.11	0.817	0	0.01	0.983	0	-0.04	0.951	0	-0.19	0.279	0	1.62	0.000	1
ATP2A1	-0.24	0.489	0	0.14	0.731	0	-1.28	0.009	-1	1.26	0.605	0	-1.06	0.004	-1	-0.61	0.001	0
BARX2	1.08	0.001	1	-0.03	0.953	0	0.48	0.026	0	-0.38	0.532	0	0.38	0.079	0	-0.46	0.068	0
SERP1	0.28	0.394	0	-0.06	0.905	0	0.38	0.043	0	0.39	0.140	0	0.19	0.165	0	1.07	0.000	1
CCL8	-0.05	0.934	0	0.12	0.834	0	1.96	0.002	1	0.35	0.194	0	1.28	0.048	1	2.14	0.015	1
GLT8D2	0.06	0.907	0	0.61	0.061	0	-0.53	0.060	0	-0.18	0.776	0	-0.33	0.097	0	-1.02	0.001	-1
FAM198B	0.41	0.048	0	0.72	0.005	0	0.10	0.575	0	0.51	0.194	0	-0.01	0.976	0	-1.44	0.000	-1
DOK3	-0.24	0.567	0	-0.24	0.581	0	0.41	0.208	0	-0.10	0.844	0	-0.17	0.297	0	1.50	0.000	1
CCL15	0.06	0.943	0	-0.30	0.640	0	1.97	0.001	1	0.86	0.141	0	0.38	0.261	0	0.53	0.230	0
CCL15-CCL	0.06	0.943	0	-0.30	0.640	0	1.97	0.001	1	0.86	0.141	0	0.38	0.261	0	0.53	0.230	0
AFF3	-0.42	0.085	0	0.20	0.520	0	-0.11	0.699	0	-0.91	0.011	0	-0.10	0.576	0	-1.69	0.000	-1
MTHFD2	0.24	0.521	0	-0.16	0.719	0	1.02	0.007	1	0.21	0.575	0	0.47	0.007	0	0.68	0.007	0
AXIN2	-0.61	0.004	0	-0.13	0.650	0	-0.91	0.004	0	-0.75	0.018	0	-0.73	0.000	0	-1.17	0.000	-1
KLHL23	0.15	0.840	0	0.43	0.479	0	-0.44	0.073	0	0.15	0.624	0	-0.42	0.002	0	-1.30	0.000	-1
KLHL23	0.15	0.840	0	0.43	0.479	0	-0.44	0.073	0	0.15	0.624	0	-0.42	0.002	0	-1.30	0.000	-1
NLRP3	0.26	0.674	0	0.03	0.971	0	2.44	0.045	1	-0.11	0.843	0	1.03	0.018	1	1.30	0.000	1
PTHLH	0.57	0.055	0	0.33	0.365	0	-0.20	0.601	0	-0.35	0.409	0	0.07	0.696	0	-1.56	0.002	-1
CDCA8	0.43	0.158	0	-0.24	0.529	0	1.01	0.001	1	0.61	0.125	0	0.62	0.002	0	0.75	0.005	0
SLC5A1	0.62	0.037	0	-1.12	0.002	-1	0.90	0.001	0	1.52	0.000	1	0.70	0.000	0	3.56	0.000	1
DOCK2	0.58	0.018	0	0.20	0.529	0	1.04	0.012	1	0.53	0.066	0	0.61	0.003	0	1.58	0.001	1
DDIAS	0.25	0.577	0	0.10	0.861	0	0.78	0.015	0	0.99	0.002	0	0.45	0.085	0	1.25	0.000	1
LILRA4	-0.08	0.894	0	0.07	0.920	0	2.23	0.004	1	1.98	0.009	1	2.45	0.000	1	1.26	0.003	1
LILRB1	-0.08	0.894	0	0.07	0.920	0	2.23	0.004	1	1.98	0.009	1	2.45	0.000	1	1.26	0.003	1
LILRA5	-0.08	0.894	0	0.07	0.920	0	2.23	0.004	1	1.98	0.009	1	2.45	0.000	1	1.26	0.003	1
KRTAP1-5	2.01	0.286	0	0.87	0.723	0	0.33	0.666	0	-4.08	0.053	0	1.56	0.001	1	-4.21	0.003	-1
KRTAP1-4	2.01	0.286	0	0.87	0.723	0	0.33	0.666	0	-4.08	0.053	0	1.56	0.001	1	-4.21	0.003	-1
KRTAP1-3	2.01	0.286	0	0.87	0.723	0	0.33	0.666	0	-4.08	0.053	0	1.56	0.001	1	-4.21	0.003	-1
KRTAP1-1	2.01	0.286	0	0.87	0.723	0	0.33	0.666	0	-4.08	0.053	0	1.56	0.001	1	-4.21	0.003	-1
SLC18A2	-0.34	0.354	0	-0.04	0.943	0	0.32	0.068	0	1.03	0.008	1	-0.05	0.853	0	-0.24	0.114	0
KRT33A	1.97	0.184	0	0.70	0.730	0	-0.15	0.870	0	-3.01	0.026	-1	2.59	0.000	1	-3.68	0.004	-1
KRT33B	1.97	0.184	0	0.70	0.730	0	-0.15	0.870	0	-3.01	0.026	-1	2.59	0.000	1	-3.68	0.004	-1

ACCEPTED MANUSCRIPT

KRT34	1.97	0.184	0	0.70	0.730	0	-0.15	0.870	0	-3.01	0.026	-1	2.59	0.000	1	-3.68	0.004	-1
IL17RD	0.05	0.905	0	0.19	0.564	0	-0.03	0.912	0	-0.40	0.221	0	0.13	0.483	0	-1.03	0.000	-1
DPP4	0.69	0.011	0	0.55	0.075	0	0.34	0.038	0	-0.05	0.909	0	0.78	0.001	0	-1.25	0.000	-1
FBXO32	-0.13	0.649	0	0.15	0.596	0	-0.87	0.006	0	-1.15	0.001	-1	-0.67	0.000	0	-1.92	0.000	-1
VSIG8	1.37	0.069	0	0.15	0.913	0	-0.55	0.396	0	-2.04	0.056	0	2.06	0.000	1	-1.58	0.024	-1
SLCO1A2	0.86	0.004	0	-0.02	0.973	0	-0.05	0.820	0	0.94	0.248	0	0.18	0.341	0	2.00	0.000	1
SLC6A19	-0.01	0.993	0	-0.20	0.684	0	0.48	0.099	0	-0.24	0.512	0	-0.59	0.019	0	-1.61	0.001	-1
PTPN18	0.13	0.777	0	0.09	0.870	0	0.29	0.256	0	0.66	0.027	0	-0.03	0.912	0	1.29	0.005	1
BCL2L11	0.08	0.822	0	-0.10	0.762	0	0.48	0.180	0	0.20	0.584	0	0.53	0.004	0	1.45	0.000	1
PARP11	-0.13	0.628	0	-0.02	0.969	0	-0.05	0.772	0	0.20	0.469	0	0.25	0.238	0	1.38	0.000	1
ADCY5	-0.32	0.573	0	-0.31	0.610	0	0.12	0.660	0	0.18	0.767	0	0.04	0.868	0	-1.20	0.000	-1
COL4A1	0.27	0.571	0	-0.19	0.725	0	1.05	0.022	1	-0.13	0.807	0	0.26	0.063	0	-0.91	0.000	0
SLC43A1	-1.38	0.000	-1	-0.45	0.195	0	-0.55	0.060	0	-1.18	0.093	0	-0.65	0.004	0	-0.62	0.027	0
GLCCI1	-0.14	0.613	0	-0.13	0.664	0	-0.25	0.234	0	0.08	0.806	0	-0.39	0.046	0	-1.03	0.000	-1
RARRES1	0.22	0.435	0	-0.21	0.490	0	-0.66	0.032	0	0.48	0.208	0	-1.05	0.000	-1	-0.91	0.000	0
MRC1	0.10	0.738	0	0.07	0.846	0	1.05	0.005	1	1.95	0.022	1	1.12	0.000	1	-0.19	0.383	0
NUAK2	-0.61	0.055	0	-0.76	0.039	0	0.29	0.164	0	0.46	0.056	0	0.20	0.305	0	1.16	0.000	1
THEMIS	-0.18	0.752	0	-0.22	0.699	0	-0.44	0.099	0	0.32	0.451	0	0.49	0.049	0	1.76	0.000	1
AVPR1A	-0.19	0.501	0	0.27	0.330	0	-0.45	0.159	0	0.61	0.102	0	-1.50	0.000	-1	-0.92	0.006	0
CMA1	0.01	0.983	0	0.03	0.963	0	0.71	0.003	0	1.89	0.009	1	1.08	0.000	1	0.97	0.000	0
SULT1A4	-0.55	0.015	0	0.23	0.423	0	-0.61	0.019	0	-0.43	0.350	0	-0.53	0.003	0	-1.32	0.005	-1
SULT1A4	-0.55	0.015	0	0.23	0.423	0	-0.61	0.019	0	-0.43	0.350	0	-0.53	0.003	0	-1.32	0.005	-1
MAMDC2	0.24	0.425	0	0.61	0.038	0	-0.46	0.045	0	-0.06	0.952	0	-0.23	0.306	0	-1.87	0.000	-1
MRPL15	0.27	0.279	0	0.03	0.952	0	0.06	0.801	0	0.00	0.999	0	-0.22	0.112	0	1.10	0.000	1
KANK4	-0.09	0.800	0	0.16	0.619	0	-0.32	0.233	0	-0.28	0.650	0	-0.17	0.295	0	-1.85	0.000	-1
PDZRN3	0.60	0.002	0	0.44	0.042	0	0.26	0.175	0	-0.26	0.305	0	0.83	0.005	0	-1.11	0.000	-1
CSRP3	-0.51	0.226	0	0.66	0.143	0	-0.51	0.058	0	1.36	0.249	0	-1.02	0.002	-1	-0.63	0.064	0
SLC2A5	-1.13	0.001	-1	-0.46	0.228	0	-0.49	0.133	0	0.24	0.553	0	-1.00	0.000	0	-0.07	0.804	0
HEPH	-0.06	0.884	0	0.06	0.881	0	-0.19	0.373	0	-0.14	0.733	0	-0.18	0.294	0	-1.04	0.000	-1
IL1R2	-0.43	0.022	0	-0.20	0.383	0	0.25	0.528	0	-0.95	0.001	0	-1.12	0.001	-1	-0.24	0.348	0
CAMK2D	-0.04	0.905	0	-0.01	0.972	0	0.06	0.764	0	0.08	0.779	0	0.15	0.294	0	1.72	0.000	1
PVRL3	0.14	0.758	0	0.13	0.780	0	-0.55	0.004	0	-1.58	0.001	-1	0.12	0.474	0	-2.68	0.000	-1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

SUOX	-0.69	0.041	0	-0.52	0.189	0	-0.33	0.138	0	-0.36	0.335	0	-1.06	0.000	-1	-0.30	0.010	0
RASL11B	0.00	0.991	0	0.20	0.417	0	0.25	0.146	0	-0.51	0.346	0	0.10	0.728	0	-1.60	0.000	-1
SPRED2	-0.41	0.082	0	-0.24	0.400	0	-0.49	0.014	0	-0.29	0.265	0	-1.27	0.000	-1	-1.03	0.000	-1
CRP	-0.10	0.882	0	0.19	0.757	0	-0.04	0.848	0	-0.40	0.204	0	0.01	0.975	0	-1.52	0.035	-1
SLC2A9	0.14	0.775	0	0.07	0.898	0	0.19	0.483	0	0.37	0.225	0	0.36	0.067	0	1.44	0.000	1
CKLF	-0.12	0.815	0	0.17	0.741	0	0.22	0.274	0	0.21	0.556	0	0.19	0.410	0	1.02	0.001	1
ADIG	0.70	0.082	0	0.35	0.493	0	-0.18	0.539	0	1.14	0.006	1	-1.33	0.001	-1	-0.94	0.001	0
SDR16C5	0.06	0.906	0	-0.21	0.613	0	-0.52	0.057	0	1.13	0.001	1	-0.71	0.000	0	0.09	0.584	0
TNFAIP2	0.47	0.298	0	0.11	0.862	0	1.18	0.006	1	0.49	0.122	0	1.48	0.001	1	1.79	0.000	1
CD300C	0.17	0.671	0	-0.02	0.979	0	0.77	0.075	0	0.23	0.788	0	0.19	0.212	0	1.70	0.000	1
CCR1	0.41	0.472	0	-0.35	0.583	0	3.84	0.006	1	0.34	0.679	0	2.26	0.000	1	2.39	0.000	1
CD300C	0.04	0.925	0	0.00	1.000	0	1.60	0.011	1	0.24	0.536	0	0.67	0.003	0	2.50	0.000	1
TRIM54	-0.21	0.702	0	-0.34	0.503	0	-1.07	0.003	-1	0.72	0.517	0	-0.49	0.004	0	-0.43	0.122	0
RGS5	-0.15	0.760	0	0.72	0.055	0	0.51	0.040	0	1.05	0.007	1	-0.32	0.015	0	-0.70	0.001	0
LEP	-0.67	0.180	0	0.14	0.857	0	-1.45	0.001	-1	1.04	0.441	0	-0.45	0.081	0	-2.40	0.000	-1
PMEPA1	0.39	0.237	0	0.18	0.665	0	0.80	0.009	0	0.70	0.117	0	1.06	0.000	1	0.26	0.401	0
KRT71	2.98	0.081	0	1.14	0.619	0	0.91	0.318	0	-1.63	0.302	0	4.14	0.000	1	-4.74	0.002	-1
AKR1C2	-0.36	0.576	0	0.31	0.665	0	1.24	0.017	1	-0.40	0.428	0	-1.05	0.021	-1	-0.92	0.000	0
LOXL2	0.60	0.021	0	0.40	0.182	0	1.02	0.006	1	0.76	0.051	0	0.70	0.008	0	-0.16	0.324	0
KRTAP3-3	1.74	0.322	0	0.35	0.897	0	-0.09	0.923	0	-3.24	0.101	0	3.24	0.003	1	-4.90	0.001	-1
KRTAP3-2	1.74	0.322	0	0.35	0.897	0	-0.09	0.923	0	-3.24	0.101	0	3.24	0.003	1	-4.90	0.001	-1
RAB11FIP2	-0.04	0.912	0	0.18	0.524	0	-0.21	0.196	0	-0.02	0.959	0	-0.17	0.452	0	-1.08	0.000	-1
AOAH	-0.22	0.733	0	0.01	0.988	0	1.62	0.004	1	0.40	0.394	0	0.48	0.015	0	2.74	0.000	1
CX3CL1	-0.18	0.610	0	-0.09	0.836	0	-0.02	0.952	0	0.02	0.974	0	1.06	0.000	1	0.23	0.011	0
ORAI2	0.02	0.972	0	-0.38	0.270	0	0.34	0.292	0	0.04	0.960	0	-0.54	0.247	0	1.06	0.000	1
RNASET2	0.45	0.096	0	0.30	0.357	0	0.11	0.547	0	-1.07	0.015	-1	0.23	0.105	0	-0.71	0.041	0
CENPU	-0.10	0.903	0	-0.29	0.688	0	0.66	0.053	0	1.21	0.016	1	0.16	0.546	0	0.75	0.000	0
SLFN13	0.65	0.032	0	0.10	0.829	0	0.96	0.011	0	1.20	0.000	1	1.74	0.000	1	0.87	0.000	0
SLFN11	0.65	0.032	0	0.10	0.829	0	0.96	0.011	0	1.20	0.000	1	1.74	0.000	1	0.87	0.000	0
HMGCR	1.42	0.000	1	-0.06	0.910	0	0.11	0.651	0	1.71	0.000	1	-0.15	0.354	0	-0.29	0.247	0
CD96	-0.61	0.058	0	0.06	0.922	0	-0.82	0.016	0	-0.30	0.537	0	-0.28	0.096	0	1.05	0.001	1
HCK	0.14	0.852	0	0.18	0.793	0	1.44	0.024	1	0.55	0.314	0	0.26	0.166	0	2.87	0.000	1

ACCEPTED MANUSCRIPT

CLEC4M	0.14	0.820	0	0.32	0.556	0	0.23	0.585	0	-0.37	0.538	0	-0.51	0.018	0	-1.35	0.029	-1
PLK1	0.17	0.681	0	-0.38	0.288	0	1.32	0.001	1	0.51	0.292	0	0.87	0.000	0	0.76	0.005	0
CEMIP	0.77	0.005	0	0.63	0.045	0	1.67	0.008	1	0.91	0.028	0	0.62	0.003	0	1.75	0.000	1
ZNF503	-0.06	0.905	0	-0.05	0.928	0	-0.40	0.025	0	0.00	0.996	0	-0.42	0.003	0	-1.16	0.000	-1
NCR1	0.15	0.797	0	0.14	0.816	0	0.22	0.555	0	0.29	0.613	0	0.21	0.491	0	2.95	0.000	1
ELMO1	0.08	0.872	0	0.35	0.313	0	0.43	0.036	0	0.55	0.024	0	0.12	0.432	0	1.21	0.000	1
MYOT	-0.06	0.946	0	0.78	0.144	0	-1.21	0.003	-1	1.97	0.266	0	-0.96	0.003	0	-0.97	0.001	0
PPP1R3C	-0.17	0.738	0	0.47	0.255	0	0.25	0.533	0	-0.17	0.832	0	-0.39	0.041	0	-1.77	0.000	-1
ROBO1	0.11	0.703	0	-0.05	0.894	0	-0.52	0.021	0	-0.66	0.106	0	-0.05	0.830	0	-1.14	0.000	-1
GPR18	0.01	0.990	0	0.12	0.809	0	-0.28	0.479	0	0.09	0.850	0	0.22	0.223	0	2.22	0.000	1
SYNM	0.00	0.994	0	0.30	0.457	0	-0.56	0.049	0	-0.19	0.690	0	-0.35	0.009	0	-1.07	0.003	-1
SAMD9L	-0.02	0.980	0	0.48	0.204	0	0.18	0.470	0	0.16	0.701	0	1.73	0.000	1	0.73	0.038	0
GIMAP7	-0.06	0.919	0	0.27	0.546	0	-0.18	0.503	0	-0.09	0.861	0	-0.07	0.863	0	1.21	0.000	1
TLR7	-0.60	0.038	0	-0.31	0.393	0	0.80	0.013	0	0.02	0.989	0	0.15	0.528	0	1.60	0.001	1
NUCB2	0.55	0.047	0	0.28	0.420	0	0.08	0.767	0	1.02	0.003	1	-0.13	0.322	0	0.60	0.000	0
NUCB2	0.55	0.047	0	0.28	0.420	0	0.08	0.767	0	1.02	0.003	1	-0.13	0.322	0	0.60	0.000	0
CXCL2	0.81	0.024	0	-0.16	0.773	0	1.64	0.089	0	0.49	0.273	0	1.03	0.006	1	3.82	0.000	1
RDH16	0.50	0.555	0	0.21	0.847	0	0.03	0.955	0	0.18	0.783	0	-0.29	0.172	0	1.55	0.000	1
LDAH	-0.22	0.597	0	0.52	0.155	0	-0.52	0.010	0	0.07	0.857	0	-0.91	0.000	0	-1.40	0.000	-1
KCNU1	-0.03	0.948	0	-0.11	0.729	0	-0.17	0.488	0	-0.08	0.779	0	0.06	0.856	0	-1.02	0.000	-1
PTX3	0.00	0.998	0	-0.03	0.968	0	1.25	0.153	0	0.22	0.590	0	1.23	0.102	0	3.26	0.000	1
CASP12	0.22	0.557	0	0.40	0.255	0	0.25	0.442	0	0.40	0.216	0	1.45	0.000	1	0.46	0.119	0
NFAM1	-0.54	0.120	0	-0.28	0.520	0	0.89	0.046	0	0.76	0.126	0	0.00	0.996	0	1.67	0.000	1
SLURP1	-0.43	0.230	0	-0.50	0.193	0	0.05	0.918	0	1.33	0.002	1	-0.55	0.328	0	0.96	0.001	0
FAM167A	1.01	0.022	1	0.28	0.642	0	0.75	0.005	0	-0.05	0.937	0	0.53	0.011	0	-0.75	0.008	0
REG3G	0.00	0.998	0	0.08	0.849	0	4.66	0.003	1	0.16	0.705	0	0.30	0.409	0	2.86	0.000	1
IFIT1B	-0.05	0.918	0	-0.04	0.942	0	0.80	0.132	0	0.20	0.751	0	0.36	0.232	0	1.36	0.002	1
SBNO2	-0.01	0.983	0	-0.37	0.196	0	0.78	0.015	0	0.11	0.735	0	1.66	0.000	1	0.98	0.000	0
SOX7	1.01	0.000	1	0.11	0.736	0	0.68	0.005	0	0.85	0.016	0	0.15	0.554	0	0.29	0.005	0
ANLN	0.19	0.649	0	-0.04	0.946	0	1.12	0.001	1	0.76	0.018	0	0.11	0.482	0	0.46	0.019	0
TREML2	0.02	0.987	0	0.25	0.725	0	1.14	0.052	0	-0.06	0.916	0	0.15	0.436	0	1.48	0.000	1
CHIA	0.33	0.775	0	-0.48	0.660	0	4.25	0.005	1	1.54	0.025	1	0.92	0.016	0	4.88	0.000	1

ACCEPTED MANUSCRIPT

DZIP1	0.01	0.987	0	0.26	0.469	0	-0.24	0.208	0	-0.42	0.162	0	-0.41	0.008	0	-1.15	0.000	-1
KHDC1	-0.17	0.899	0	-0.12	0.930	0	-0.50	0.353	0	-0.65	0.174	0	-0.08	0.873	0	2.57	0.000	1
TNFSF11	0.07	0.912	0	-0.10	0.878	0	1.71	0.043	1	0.00	0.993	0	0.25	0.279	0	0.69	0.037	0
KLRD1	-0.86	0.007	0	-0.40	0.290	0	-1.11	0.009	-1	0.42	0.516	0	0.44	0.154	0	2.00	0.000	1
FKBP1B	-0.18	0.683	0	-0.16	0.737	0	0.20	0.590	0	0.43	0.320	0	0.09	0.658	0	1.00	0.001	1
MVP	0.00	0.997	0	-0.23	0.544	0	0.32	0.108	0	0.02	0.967	0	0.42	0.011	0	1.14	0.000	1
TMEM64	0.28	0.288	0	0.33	0.249	0	-0.29	0.097	0	-0.89	0.003	0	-0.09	0.689	0	-1.40	0.000	-1
ARHGEF10	0.02	0.979	0	-0.40	0.327	0	0.09	0.758	0	0.08	0.832	0	0.26	0.169	0	1.09	0.000	1
IL22RA2	-0.07	0.891	0	-0.34	0.316	0	-0.96	0.007	0	-1.94	0.026	-1	-1.38	0.000	-1	0.80	0.041	0
LPXN	0.10	0.861	0	0.09	0.883	0	0.36	0.076	0	0.92	0.013	0	0.13	0.387	0	1.71	0.000	1
ZNF160	-0.15	0.569	0	0.09	0.781	0	-0.42	0.017	0	-0.16	0.443	0	-0.01	0.959	0	-1.23	0.000	-1
FGFR2	-0.69	0.000	0	-0.32	0.108	0	-0.84	0.005	0	-0.64	0.043	0	-0.87	0.001	0	-1.01	0.002	-1
HERC6	0.03	0.972	0	0.62	0.241	0	0.22	0.515	0	0.07	0.898	0	2.50	0.000	1	1.43	0.004	1
IL1A	-0.34	0.433	0	-0.47	0.284	0	0.66	0.101	0	0.61	0.042	0	1.29	0.000	1	0.71	0.006	0
REPIN1	-0.09	0.900	0	-0.12	0.863	0	-0.66	0.011	0	-0.69	0.066	0	-0.48	0.002	0	-1.04	0.000	-1
ST8SIA4	0.27	0.399	0	0.36	0.277	0	0.64	0.195	0	0.68	0.075	0	0.25	0.185	0	1.13	0.003	1
LRRC4	0.60	0.075	0	-0.26	0.558	0	0.71	0.018	0	1.21	0.053	0	0.73	0.000	0	1.22	0.002	1
ANXA3	0.09	0.849	0	0.45	0.186	0	1.23	0.018	1	0.25	0.769	0	0.47	0.118	0	-0.42	0.212	0
SC5D	-0.30	0.186	0	0.27	0.277	0	0.07	0.651	0	0.20	0.354	0	-0.11	0.470	0	-1.09	0.000	-1
TMPRSS11	1.17	0.010	1	0.64	0.227	0	0.23	0.348	0	0.32	0.575	0	0.17	0.481	0	-0.93	0.140	0
UPP1	0.58	0.388	0	0.05	0.968	0	1.36	0.036	1	-1.35	0.046	-1	1.81	0.000	1	1.09	0.126	0
ABCC3	0.21	0.595	0	-0.47	0.184	0	0.74	0.017	0	0.86	0.023	0	-0.37	0.026	0	2.06	0.000	1
GDF3	0.00	0.997	0	-0.15	0.772	0	-0.34	0.202	0	-0.09	0.855	0	-0.06	0.812	0	2.36	0.000	1
PAPSS2	0.53	0.202	0	1.08	0.018	1	-0.08	0.816	0	0.59	0.056	0	-0.46	0.021	0	0.39	0.008	0
INHBA	0.48	0.266	0	0.58	0.204	0	1.41	0.018	1	0.74	0.312	0	1.32	0.001	1	0.69	0.035	0
MT1F	-0.45	0.069	0	-0.27	0.360	0	0.05	0.824	0	-0.11	0.772	0	-0.07	0.715	0	2.37	0.000	1
MT1HL1	-0.45	0.069	0	-0.27	0.360	0	0.05	0.824	0	-0.11	0.772	0	-0.07	0.715	0	2.37	0.000	1
MT1H	-0.45	0.069	0	-0.27	0.360	0	0.05	0.824	0	-0.11	0.772	0	-0.07	0.715	0	2.37	0.000	1
ARHGAP44	-0.26	0.282	0	-0.30	0.246	0	-0.60	0.036	0	-0.63	0.008	0	-0.37	0.004	0	-1.31	0.000	-1
CAPN8	1.41	0.091	0	0.49	0.669	0	-0.02	0.973	0	-1.48	0.218	0	0.35	0.151	0	-2.75	0.009	-1
TSHR	0.62	0.030	0	1.14	0.002	1	-0.46	0.140	0	0.51	0.611	0	-0.46	0.076	0	-2.05	0.000	-1
FAM26D	2.22	0.120	0	0.74	0.709	0	-0.01	0.993	0	-2.74	0.089	0	3.44	0.000	1	-3.92	0.004	-1

S100A3	2.28	0.051	0	0.74	0.643	0	-0.23	0.807	0	-2.80	0.032	-1	3.17	0.000	1	-3.63	0.004	-1
GJB2	1.61	0.039	1	0.03	0.986	0	2.57	0.000	1	-0.96	0.052	0	2.19	0.000	1	1.08	0.104	0
GK5	-0.04	0.921	0	0.29	0.250	0	-0.69	0.019	0	0.54	0.041	0	-1.21	0.000	-1	-1.23	0.000	-1
CD163	0.00	0.997	0	-0.04	0.928	0	0.65	0.014	0	0.76	0.297	0	0.26	0.364	0	-1.16	0.004	-1
KHDRBS3	0.06	0.863	0	0.26	0.357	0	-0.02	0.959	0	1.34	0.001	1	-0.54	0.001	0	-0.48	0.058	0
ZFR2	-0.39	0.172	0	-0.34	0.291	0	-0.41	0.076	0	-0.44	0.138	0	-0.04	0.813	0	-1.40	0.000	-1
GUCA2A	-0.26	0.456	0	-0.45	0.179	0	-0.26	0.590	0	-0.20	0.712	0	-1.71	0.000	-1	-0.68	0.216	0
PLSCR4	-0.45	0.050	0	0.19	0.529	0	-1.42	0.001	-1	-0.41	0.310	0	-0.90	0.000	0	-0.98	0.000	0
MYH3	-0.14	0.814	0	0.57	0.192	0	-0.35	0.338	0	0.38	0.479	0	-1.19	0.000	-1	3.44	0.002	1
TES	0.56	0.038	0	0.07	0.873	0	0.89	0.004	0	0.54	0.028	0	0.90	0.001	0	1.20	0.000	1
PGM2L1	-0.01	0.985	0	0.07	0.833	0	-0.31	0.073	0	-0.04	0.911	0	-0.32	0.065	0	-1.13	0.000	-1
ETNPPL	0.34	0.366	0	0.46	0.221	0	-0.26	0.285	0	1.31	0.033	1	-0.11	0.608	0	0.11	0.740	0
GNAS	-0.01	0.974	0	0.05	0.878	0	0.11	0.585	0	0.17	0.479	0	0.04	0.833	0	-1.20	0.000	-1
CKAP4	0.27	0.480	0	-0.53	0.144	0	1.01	0.001	1	0.57	0.023	0	0.52	0.001	0	0.78	0.000	0
PPP1R16B	0.45	0.095	0	0.27	0.411	0	0.46	0.173	0	-0.09	0.767	0	0.14	0.403	0	1.12	0.000	1
SLC6A14	-0.01	0.964	0	-0.11	0.663	0	-0.29	0.140	0	0.03	0.938	0	1.01	0.002	1	0.83	0.036	0
TRIM25	-0.06	0.857	0	-0.08	0.803	0	0.40	0.019	0	0.59	0.019	0	1.12	0.000	1	1.40	0.000	1
KRT6B	0.90	0.101	0	-0.26	0.742	0	3.42	0.000	1	0.79	0.400	0	3.84	0.000	1	2.17	0.000	1
ARG2	0.48	0.105	0	-0.03	0.955	0	1.74	0.029	1	-0.27	0.665	0	0.75	0.000	0	0.05	0.918	0
MRGPRX3	-0.20	0.626	0	-0.08	0.886	0	0.31	0.222	0	2.09	0.030	1	0.62	0.050	0	0.49	0.046	0
MRGPRX1	-0.20	0.626	0	-0.08	0.886	0	0.31	0.222	0	2.09	0.030	1	0.62	0.050	0	0.49	0.046	0
LOXL1	0.04	0.941	0	-0.07	0.898	0	1.63	0.001	1	1.17	0.100	0	0.58	0.007	0	0.71	0.034	0
ZBTB4	-0.25	0.368	0	-0.07	0.855	0	-0.57	0.004	0	-0.23	0.416	0	-0.65	0.003	0	-1.02	0.000	-1
GLI2	-0.19	0.585	0	0.06	0.902	0	-0.12	0.626	0	-0.36	0.505	0	-0.05	0.871	0	-1.70	0.000	-1
PON1	0.13	0.894	0	0.66	0.345	0	-1.39	0.061	0	0.01	0.991	0	-0.02	0.930	0	-1.81	0.033	-1
CLDN3	0.13	0.833	0	0.07	0.916	0	-0.17	0.430	0	-0.83	0.016	0	-0.16	0.233	0	-1.50	0.000	-1
FABP7	2.14	0.000	1	0.28	0.597	0	0.70	0.042	0	-0.52	0.225	0	-0.04	0.912	0	2.05	0.000	1
F3	-0.91	0.000	0	-0.17	0.507	0	-0.87	0.003	0	-0.64	0.079	0	-0.71	0.002	0	-1.15	0.000	-1
OLFML2B	0.23	0.443	0	0.43	0.132	0	1.11	0.002	1	0.91	0.018	0	0.63	0.026	0	-0.21	0.367	0
BCL2L15	0.03	0.968	0	-0.09	0.900	0	0.17	0.546	0	1.87	0.008	1	1.31	0.001	1	3.73	0.000	1
HK3	-0.08	0.866	0	-0.06	0.906	0	1.04	0.039	1	0.32	0.302	0	0.10	0.625	0	2.35	0.000	1
JCHAIN	0.12	0.786	0	0.17	0.662	0	0.21	0.532	0	-0.16	0.641	0	0.11	0.677	0	4.50	0.000	1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

MS4A7	0.12	0.728	0	0.09	0.809	0	1.44	0.004	1	1.36	0.117	0	1.37	0.000	1	1.62	0.000	1
PNKD	-0.89	0.003	0	-0.26	0.488	0	-0.79	0.018	0	-0.39	0.083	0	-0.54	0.001	0	-1.51	0.000	-1
ALDH6A1	0.10	0.864	0	0.64	0.129	0	-0.79	0.005	0	0.18	0.604	0	-0.74	0.001	0	-1.26	0.000	-1
ASB11	-0.16	0.816	0	0.42	0.471	0	-0.47	0.248	0	0.81	0.392	0	-0.29	0.209	0	-1.09	0.002	-1
SLC6A2	-0.84	0.001	0	-0.38	0.183	0	-0.46	0.099	0	0.24	0.597	0	-0.63	0.000	0	-1.94	0.000	-1
ADA	0.26	0.553	0	-0.36	0.404	0	1.39	0.003	1	0.57	0.226	0	1.29	0.000	1	2.35	0.000	1
THEM5	-0.27	0.574	0	0.01	0.993	0	0.02	0.978	0	0.56	0.069	0	0.12	0.610	0	1.49	0.000	1
PDE4DIP	-0.29	0.495	0	0.34	0.443	0	-0.90	0.011	0	0.28	0.728	0	-0.77	0.001	0	-1.17	0.002	-1
TRAT1	-1.01	0.032	-1	-0.09	0.916	0	-0.91	0.005	0	-0.08	0.921	0	-0.01	0.975	0	-0.13	0.709	0
USP18	-0.20	0.553	0	0.36	0.251	0	0.04	0.931	0	-1.01	0.012	-1	1.82	0.000	1	0.80	0.067	0
USP41	-0.20	0.553	0	0.36	0.251	0	0.04	0.931	0	-1.01	0.012	-1	1.82	0.000	1	0.80	0.067	0
JAK2	-0.05	0.899	0	0.10	0.742	0	0.61	0.047	0	0.25	0.296	0	1.45	0.000	1	1.02	0.000	1
SEMA3D	-0.40	0.037	0	-0.01	0.978	0	-0.87	0.012	0	-1.10	0.001	-1	-2.04	0.000	-1	-1.94	0.000	-1
LAIR2	-0.23	0.615	0	0.30	0.513	0	1.18	0.010	1	0.84	0.220	0	0.41	0.028	0	3.58	0.000	1
LAIR1	-0.23	0.615	0	0.30	0.513	0	1.18	0.010	1	0.84	0.220	0	0.41	0.028	0	3.58	0.000	1
KNSTRN	0.24	0.464	0	0.07	0.891	0	1.07	0.002	1	0.58	0.039	0	0.21	0.164	0	0.73	0.000	0
TMPRSS11	0.07	0.867	0	-0.25	0.431	0	3.40	0.000	1	0.54	0.191	0	0.93	0.002	0	2.80	0.000	1
CCNA2	0.54	0.064	0	-0.18	0.663	0	1.38	0.001	1	0.69	0.134	0	0.54	0.002	0	0.61	0.021	0
FBLN2	0.16	0.584	0	0.34	0.193	0	1.02	0.006	1	0.92	0.045	0	0.53	0.010	0	-0.36	0.074	0
CUBN	-0.15	0.848	0	0.50	0.408	0	-0.32	0.080	0	-0.09	0.842	0	-0.15	0.351	0	-1.00	0.011	-1
WIPF3	-0.34	0.279	0	0.08	0.858	0	-0.36	0.171	0	-1.23	0.022	-1	-0.29	0.018	0	-1.04	0.000	-1
AGR3	-0.25	0.676	0	0.16	0.806	0	-0.43	0.266	0	-0.75	0.054	0	-0.17	0.440	0	-1.10	0.000	-1
AMMECR1	0.78	0.003	0	-0.05	0.900	0	0.63	0.002	0	0.28	0.215	0	1.02	0.000	1	0.75	0.024	0
ARL4D	-0.23	0.690	0	-0.66	0.164	0	-0.12	0.717	0	-1.16	0.010	-1	0.14	0.545	0	-0.49	0.069	0
SIGLEC1	-0.82	0.078	0	-0.55	0.322	0	1.72	0.001	1	0.33	0.660	0	0.39	0.010	0	0.89	0.106	0
CXADR	0.51	0.039	0	-0.05	0.919	0	-0.12	0.472	0	0.27	0.288	0	0.77	0.000	0	1.92	0.000	1
CA4	-0.38	0.434	0	0.17	0.787	0	0.75	0.040	0	0.83	0.063	0	1.29	0.006	1	2.90	0.000	1
WNT16	-0.13	0.733	0	-0.07	0.872	0	0.25	0.412	0	-1.15	0.014	-1	-0.09	0.711	0	0.81	0.008	0
DEFB105A	0.05	0.966	0	0.18	0.867	0	-0.02	0.948	0	-2.26	0.005	-1	0.34	0.063	0	-0.33	0.006	0
NKG7	-0.53	0.140	0	0.00	0.997	0	-0.53	0.020	0	0.21	0.723	0	1.08	0.000	1	2.38	0.000	1
CCNB1	0.33	0.397	0	-0.13	0.804	0	1.33	0.004	1	0.77	0.039	0	0.57	0.022	0	1.42	0.000	1
CLEC7A	0.56	0.313	0	0.37	0.578	0	2.73	0.006	1	1.01	0.099	0	1.85	0.000	1	2.24	0.000	1

ACCEPTED MANUSCRIPT

APOL4	0.11	0.814	0	-0.54	0.134	0	0.91	0.012	0	1.40	0.009	1	0.20	0.289	0	1.60	0.000	1
APOL2	0.11	0.814	0	-0.54	0.134	0	0.91	0.012	0	1.40	0.009	1	0.20	0.289	0	1.60	0.000	1
RDX	-0.02	0.969	0	0.19	0.568	0	-0.37	0.030	0	-0.02	0.946	0	-0.39	0.006	0	-1.20	0.000	-1
PLIN2	0.70	0.004	0	0.27	0.349	0	0.25	0.143	0	1.30	0.002	1	-0.39	0.086	0	-0.02	0.871	0
TRA2A	0.09	0.838	0	0.10	0.827	0	-0.04	0.872	0	0.16	0.613	0	0.58	0.001	0	-1.26	0.000	-1
MCTP1	0.42	0.190	0	0.23	0.556	0	0.76	0.045	0	1.20	0.002	1	0.58	0.031	0	-0.13	0.725	0
SELE	0.88	0.002	0	0.50	0.110	0	1.89	0.006	1	1.67	0.004	1	2.15	0.001	1	1.37	0.000	1
IDI1	1.16	0.001	1	0.40	0.289	0	0.04	0.865	0	1.88	0.000	1	-0.43	0.004	0	-0.04	0.800	0
ACPP	0.02	0.972	0	0.02	0.976	0	-0.13	0.652	0	0.06	0.850	0	0.20	0.178	0	1.31	0.000	1
GIPC2	-0.13	0.739	0	0.07	0.871	0	-0.17	0.436	0	-0.68	0.023	0	-0.98	0.000	0	-1.27	0.000	-1
PADI1	2.13	0.047	1	0.91	0.519	0	0.86	0.143	0	-1.98	0.087	0	0.61	0.005	0	-1.78	0.067	0
SAMSN1	0.17	0.778	0	0.06	0.930	0	1.60	0.013	1	0.37	0.396	0	1.36	0.000	1	2.07	0.000	1
HOXB6	-0.03	0.965	0	0.08	0.895	0	-0.12	0.681	0	-0.16	0.662	0	0.13	0.443	0	-1.16	0.000	-1
JAKMIP1	0.10	0.807	0	0.00	0.996	0	-0.06	0.822	0	-0.08	0.893	0	0.10	0.614	0	2.14	0.000	1
TRHDE	0.56	0.009	0	1.11	0.000	1	-0.51	0.073	0	0.32	0.577	0	-0.22	0.243	0	-0.79	0.000	0
XAF1	-0.20	0.744	0	0.31	0.588	0	0.14	0.583	0	0.04	0.936	0	2.82	0.000	1	0.94	0.017	0
PARP8	0.06	0.900	0	0.25	0.535	0	0.00	0.989	0	0.78	0.012	0	1.40	0.000	1	0.51	0.003	0
TMEM45A	-0.14	0.856	0	-0.14	0.848	0	-1.25	0.000	-1	1.04	0.022	1	-1.07	0.000	-1	-0.02	0.870	0
FHOD3	0.92	0.102	0	0.25	0.762	0	0.25	0.568	0	-1.14	0.179	0	0.52	0.055	0	-2.09	0.001	-1
TNFAIP3	0.16	0.781	0	0.00	0.998	0	0.31	0.464	0	0.02	0.966	0	1.24	0.005	1	1.13	0.000	1
P2RY12	-0.11	0.809	0	0.10	0.845	0	1.21	0.011	1	0.25	0.756	0	-0.22	0.410	0	0.19	0.698	0
LGALS12	0.50	0.347	0	1.22	0.025	1	-0.80	0.103	0	-1.19	0.010	-1	-0.13	0.533	0	-1.91	0.000	-1
ZNF462	0.07	0.865	0	0.28	0.319	0	-0.59	0.009	0	-0.09	0.822	0	-0.88	0.000	0	-1.35	0.000	-1
KIAA0895	-0.29	0.692	0	0.03	0.974	0	1.42	0.006	1	0.02	0.983	0	-0.08	0.663	0	0.15	0.252	0
LGALS3BP	-0.18	0.667	0	0.29	0.457	0	0.63	0.015	0	0.59	0.124	0	1.81	0.000	1	1.01	0.008	1
WIF1	-0.32	0.169	0	0.32	0.215	0	-0.57	0.023	0	0.15	0.832	0	-0.91	0.001	0	-1.20	0.005	-1
PXMP4	0.22	0.377	0	0.45	0.061	0	-0.34	0.220	0	0.13	0.744	0	-1.18	0.000	-1	-0.72	0.010	0
SLAMF1	0.55	0.139	0	0.32	0.480	0	0.52	0.210	0	0.46	0.328	0	1.06	0.000	1	2.11	0.000	1
ABCD2	0.34	0.516	0	1.00	0.045	0	-0.53	0.037	0	1.89	0.086	0	-0.44	0.199	0	-1.11	0.000	-1
CEACAM7	0.27	0.646	0	1.02	0.043	1	0.22	0.592	0	-0.02	0.981	0	-0.12	0.628	0	0.62	0.097	0
FJX1	-0.54	0.188	0	-0.58	0.198	0	-0.61	0.016	0	-0.10	0.849	0	-1.09	0.000	-1	-0.60	0.011	0
PLVAP	0.10	0.870	0	0.06	0.925	0	1.22	0.002	1	0.65	0.026	0	0.76	0.000	0	-0.07	0.698	0

ACCEPTED MANUSCRIPT

PLA2G3	-0.34	0.456	0	-0.30	0.540	0	-0.21	0.558	0	-0.67	0.039	0	-0.20	0.109	0	-1.03	0.000	-1
UBE2C	0.28	0.441	0	-0.19	0.659	0	1.58	0.000	1	0.52	0.169	0	0.57	0.000	0	0.51	0.021	0
TIFAB	-0.22	0.637	0	-0.12	0.821	0	0.28	0.445	0	-0.61	0.328	0	0.04	0.834	0	1.63	0.001	1
IFIT1B	-0.14	0.858	0	0.83	0.147	0	0.82	0.166	0	0.28	0.637	0	4.05	0.000	1	1.51	0.004	1
RGS4	0.59	0.392	0	0.27	0.767	0	0.58	0.053	0	2.57	0.001	1	2.87	0.000	1	1.89	0.000	1
CYTIP	0.22	0.395	0	-0.27	0.296	0	0.44	0.324	0	0.30	0.531	0	0.50	0.123	0	1.71	0.000	1
THBS2	0.17	0.614	0	0.34	0.266	0	1.09	0.003	1	0.97	0.156	0	0.83	0.009	0	-0.45	0.078	0
SLC7A7	0.48	0.078	0	0.29	0.377	0	0.98	0.005	0	0.45	0.113	0	0.18	0.310	0	1.84	0.000	1
GALNT3	0.65	0.022	0	0.06	0.906	0	0.38	0.129	0	0.40	0.072	0	1.20	0.000	1	1.01	0.000	1
AOX1	-0.20	0.529	0	0.27	0.397	0	-0.73	0.004	0	0.72	0.045	0	-0.52	0.004	0	-1.35	0.000	-1
ABCG1	-0.48	0.060	0	-0.24	0.455	0	0.11	0.595	0	-0.02	0.957	0	0.20	0.237	0	1.42	0.000	1
FGL2	0.38	0.115	0	0.51	0.060	0	0.92	0.017	0	0.10	0.847	0	1.09	0.000	1	1.32	0.000	1
BTC	-0.09	0.878	0	0.57	0.159	0	-1.11	0.002	-1	-2.03	0.001	-1	0.13	0.610	0	-2.92	0.000	-1
RHOH	-0.02	0.974	0	-0.03	0.954	0	0.83	0.056	0	-0.17	0.770	0	0.33	0.124	0	1.37	0.001	1
IFNGR1	-0.10	0.755	0	0.05	0.897	0	0.17	0.433	0	-1.10	0.006	-1	-0.09	0.645	0	0.84	0.001	0
F5	0.66	0.296	0	0.06	0.957	0	2.32	0.001	1	0.54	0.349	0	0.18	0.304	0	0.16	0.445	0
ALDH1L2	-0.20	0.813	0	0.02	0.986	0	1.52	0.001	1	1.14	0.047	1	0.19	0.197	0	1.54	0.000	1
IL13RA2	-0.25	0.558	0	-0.15	0.765	0	1.12	0.082	0	1.25	0.005	1	0.47	0.197	0	2.16	0.000	1
GIMAP4	0.18	0.605	0	0.52	0.098	0	0.47	0.097	0	0.31	0.500	0	0.51	0.004	0	2.31	0.000	1
RINL	0.02	0.980	0	0.08	0.913	0	0.04	0.909	0	-0.30	0.535	0	-0.11	0.527	0	1.23	0.001	1
BHLHE40	-0.41	0.084	0	0.10	0.789	0	0.37	0.017	0	1.16	0.001	1	0.89	0.000	0	0.86	0.000	0
PLAUR	0.24	0.347	0	0.04	0.927	0	2.43	0.004	1	0.74	0.207	0	1.87	0.000	1	1.21	0.001	1
LDLRAD3	-0.72	0.003	0	-0.07	0.869	0	-0.64	0.017	0	-0.45	0.184	0	-0.43	0.007	0	-1.17	0.000	-1
LRRC31	-0.82	0.124	0	-0.15	0.859	0	-1.01	0.004	-1	-1.08	0.018	-1	-0.30	0.093	0	-0.67	0.001	0
GAS6	-0.62	0.011	0	-0.18	0.579	0	0.11	0.546	0	-0.76	0.006	0	-0.07	0.792	0	-1.04	0.001	-1
MYO1F	-0.02	0.961	0	0.05	0.913	0	0.90	0.031	0	0.42	0.507	0	0.47	0.036	0	1.83	0.000	1
FBN1	0.32	0.211	0	0.10	0.774	0	1.40	0.001	1	0.97	0.064	0	0.76	0.000	0	-0.57	0.047	0
KRT25	2.68	0.063	0	1.04	0.589	0	0.59	0.536	0	-1.37	0.381	0	4.17	0.000	1	-6.53	0.000	-1
SOWAHA	-0.11	0.894	0	-0.23	0.745	0	0.12	0.746	0	-0.50	0.252	0	-0.19	0.307	0	-1.34	0.000	-1
GPHA2	-0.13	0.877	0	0.11	0.906	0	0.23	0.511	0	-1.45	0.002	-1	-0.78	0.009	0	-1.24	0.000	-1
JAKMIP2	0.06	0.910	0	0.09	0.865	0	0.41	0.298	0	0.48	0.233	0	1.36	0.007	1	2.81	0.000	1
SPDL1	0.40	0.267	0	-0.08	0.881	0	0.37	0.101	0	0.75	0.006	0	-0.02	0.930	0	1.10	0.000	1

ACCEPTED MANUSCRIPT

FCGR1B	-0.01	0.993	0	0.01	0.987	0	1.96	0.004	1	0.59	0.350	0	0.89	0.001	0	2.51	0.000	1
FCGR1A	-0.01	0.993	0	0.01	0.987	0	1.96	0.004	1	0.59	0.350	0	0.89	0.001	0	2.51	0.000	1
PLA2G4F	-0.24	0.323	0	-0.34	0.176	0	0.59	0.027	0	0.42	0.063	0	0.11	0.607	0	1.20	0.000	1
RSPO3	-0.58	0.096	0	0.47	0.243	0	-0.89	0.004	0	-1.52	0.036	-1	-0.65	0.001	0	-1.02	0.000	-1
FMNL1	0.02	0.966	0	-0.02	0.964	0	0.81	0.060	0	0.08	0.925	0	0.27	0.124	0	1.51	0.000	1
FAM189A2	-0.36	0.119	0	-0.20	0.494	0	-0.61	0.070	0	-0.53	0.022	0	-0.93	0.001	0	-1.08	0.000	-1
MS4A6A	0.32	0.450	0	-0.25	0.612	0	2.19	0.001	1	2.10	0.019	1	2.06	0.000	1	1.68	0.001	1
MS4A6E	0.32	0.450	0	-0.25	0.612	0	2.19	0.001	1	2.10	0.019	1	2.06	0.000	1	1.68	0.001	1
SMCO3	-0.24	0.433	0	0.02	0.959	0	-0.41	0.029	0	-0.84	0.045	0	0.05	0.822	0	-1.29	0.000	-1
IL6	0.30	0.442	0	-0.01	0.984	0	2.78	0.004	1	0.75	0.247	0	3.16	0.000	1	3.90	0.000	1
SLC7A11	1.79	0.006	1	-0.32	0.732	0	2.95	0.007	1	0.18	0.887	0	1.74	0.000	1	3.27	0.000	1
VCAM1	0.03	0.952	0	0.05	0.904	0	1.59	0.028	1	0.80	0.149	0	0.84	0.004	0	1.72	0.000	1
SECTM1	-0.75	0.002	0	0.64	0.097	0	0.10	0.885	0	0.23	0.533	0	2.01	0.000	1	1.22	0.000	1
TTC28	-0.13	0.748	0	-0.09	0.841	0	-0.31	0.189	0	-0.26	0.634	0	-0.67	0.002	0	-1.04	0.000	-1
NCKAP5	0.30	0.663	0	0.45	0.494	0	0.01	0.981	0	-1.06	0.040	-1	0.72	0.001	0	-1.01	0.011	-1
NCAPG	0.52	0.135	0	-0.26	0.568	0	1.03	0.009	1	1.17	0.027	1	0.31	0.087	0	0.86	0.002	0
NNT	-1.16	0.000	-1	-0.86	0.002	0	-0.20	0.139	0	-0.04	0.930	0	-0.50	0.010	0	-0.62	0.006	0
COL4A5	-0.42	0.151	0	-0.27	0.436	0	-0.99	0.011	0	-0.71	0.002	0	-0.21	0.172	0	-2.24	0.000	-1
HS3ST6	-0.63	0.025	0	-0.24	0.508	0	-0.49	0.198	0	-1.16	0.003	-1	-0.34	0.008	0	-1.74	0.000	-1
PPA1	0.86	0.000	0	0.16	0.463	0	0.35	0.058	0	1.14	0.000	1	0.30	0.045	0	0.45	0.005	0
CCND2	-0.26	0.212	0	0.06	0.845	0	-0.62	0.013	0	0.08	0.864	0	-1.08	0.000	-1	-1.18	0.000	-1
IL36RN	0.11	0.753	0	-0.24	0.413	0	0.79	0.001	0	0.96	0.001	0	0.99	0.000	0	1.47	0.000	1
ECHDC3	-0.37	0.374	0	0.13	0.819	0	-0.58	0.097	0	-0.39	0.492	0	-0.51	0.003	0	-1.36	0.000	-1
CD59	-0.89	0.103	0	0.52	0.443	0	-0.39	0.082	0	-0.94	0.016	0	-0.97	0.002	0	-1.05	0.000	-1
SLA2	-0.01	0.974	0	0.08	0.828	0	0.01	0.978	0	0.19	0.697	0	0.17	0.222	0	1.38	0.000	1
CHI3L1	1.35	0.001	1	-0.46	0.267	0	1.96	0.001	1	2.95	0.001	1	1.63	0.000	1	3.92	0.000	1
BMP6	0.48	0.139	0	0.32	0.402	0	-0.39	0.074	0	-0.74	0.086	0	-0.12	0.490	0	-1.24	0.000	-1
KLK2	-0.12	0.880	0	-0.32	0.625	0	1.49	0.027	1	0.01	0.990	0	1.15	0.000	1	1.88	0.001	1
KLK3	-0.12	0.880	0	-0.32	0.625	0	1.49	0.027	1	0.01	0.990	0	1.15	0.000	1	1.88	0.001	1
AQP4	0.19	0.720	0	0.81	0.060	0	-0.88	0.025	0	0.15	0.781	0	-0.13	0.528	0	-1.43	0.009	-1
RNASE1	-0.43	0.309	0	-0.07	0.920	0	-0.25	0.537	0	-0.22	0.505	0	0.32	0.080	0	1.03	0.000	1
ALDH3A1	0.14	0.717	0	-0.02	0.962	0	-0.82	0.023	0	0.18	0.556	0	-1.55	0.000	-1	-0.86	0.007	0

ACCEPTED MANUSCRIPT

PF4V1	-0.17	0.783	0	-0.23	0.705	0	1.08	0.004	1	1.97	0.009	1	-0.70	0.068	0	-0.07	0.785	0
PPARG	0.31	0.241	0	0.75	0.011	0	-0.57	0.014	0	1.11	0.002	1	-0.58	0.001	0	-0.54	0.006	0
CCRL2	0.08	0.889	0	0.36	0.388	0	1.76	0.057	0	-0.06	0.943	0	1.65	0.000	1	2.49	0.000	1
IL2RA	0.28	0.513	0	0.26	0.579	0	1.08	0.003	1	0.54	0.245	0	1.36	0.000	1	2.43	0.000	1
CD38	0.50	0.126	0	0.39	0.311	0	1.04	0.104	0	0.31	0.490	0	0.67	0.003	0	1.66	0.001	1
C10orf99	1.04	0.265	0	-1.16	0.243	0	3.85	0.001	1	3.19	0.001	1	4.48	0.000	1	5.22	0.000	1
OMD	-0.08	0.890	0	0.42	0.323	0	-0.73	0.008	0	0.37	0.646	0	-1.14	0.000	-1	-1.26	0.000	-1
HMMR	0.42	0.285	0	0.11	0.843	0	1.20	0.003	1	1.00	0.008	1	0.52	0.008	0	1.08	0.000	1
LCP1	0.32	0.253	0	0.35	0.249	0	1.23	0.019	1	0.50	0.066	0	1.09	0.001	1	1.34	0.001	1
AQP3	-0.04	0.902	0	-0.45	0.060	0	0.91	0.001	0	1.04	0.003	1	1.38	0.001	1	1.58	0.000	1
OXTR	-0.34	0.339	0	0.24	0.556	0	-0.44	0.106	0	0.39	0.144	0	-0.29	0.157	0	-1.93	0.000	-1
CIDEC	-0.50	0.336	0	-0.05	0.953	0	-0.68	0.089	0	0.80	0.435	0	-0.26	0.650	0	-2.10	0.000	-1
PRRG3	-0.10	0.773	0	0.07	0.862	0	-0.79	0.007	0	-1.50	0.001	-1	0.11	0.467	0	-1.41	0.000	-1
SLC7A6	-0.64	0.002	0	-0.29	0.208	0	-0.13	0.545	0	-1.12	0.001	-1	-0.39	0.018	0	-0.65	0.001	0
ARMC2	-0.19	0.632	0	0.10	0.840	0	0.02	0.955	0	-1.13	0.009	-1	-0.12	0.506	0	-0.27	0.053	0
SPI1	-0.17	0.584	0	0.03	0.948	0	0.45	0.157	0	0.35	0.385	0	0.31	0.113	0	1.62	0.000	1
SCARF1	0.28	0.616	0	0.20	0.743	0	0.16	0.645	0	0.37	0.372	0	0.18	0.333	0	1.25	0.000	1
NEU2	-0.19	0.692	0	0.37	0.370	0	-0.25	0.246	0	-0.31	0.583	0	0.36	0.026	0	-1.04	0.003	-1
NKD2	-0.07	0.882	0	0.41	0.234	0	-0.72	0.010	0	-1.18	0.002	-1	-0.05	0.878	0	-1.55	0.000	-1
ADAR	-0.24	0.292	0	-0.22	0.379	0	0.15	0.320	0	0.33	0.118	0	0.84	0.001	0	1.07	0.003	1
ZCCHC3	-0.22	0.584	0	-0.27	0.513	0	-0.04	0.933	0	-0.69	0.202	0	-0.19	0.268	0	-1.22	0.000	-1
PRTN3	-0.16	0.796	0	-0.02	0.978	0	0.16	0.683	0	-0.39	0.494	0	0.19	0.224	0	-1.18	0.001	-1
KIF18B	0.23	0.666	0	-0.29	0.578	0	1.17	0.001	1	0.53	0.185	0	0.41	0.021	0	0.55	0.066	0
YLPM1	-0.13	0.776	0	0.11	0.810	0	-0.35	0.023	0	-0.13	0.548	0	-0.22	0.116	0	-1.03	0.000	-1
NAIP	0.20	0.786	0	0.20	0.791	0	0.48	0.427	0	0.39	0.487	0	0.26	0.175	0	1.28	0.004	1
TLR3	0.24	0.447	0	0.64	0.034	0	0.11	0.668	0	0.27	0.301	0	1.07	0.000	1	0.38	0.114	0
SPDEF	-0.31	0.367	0	0.14	0.743	0	-0.05	0.929	0	0.33	0.454	0	-0.11	0.516	0	1.56	0.000	1
CD8B	0.01	0.984	0	0.10	0.843	0	0.18	0.307	0	0.13	0.757	0	0.58	0.003	0	1.90	0.000	1
LACC1	0.07	0.884	0	-0.17	0.675	0	-0.29	0.084	0	0.04	0.907	0	-0.42	0.039	0	1.32	0.000	1
FCER1A	-0.42	0.454	0	-0.50	0.382	0	1.84	0.003	1	2.27	0.002	1	1.66	0.000	1	3.22	0.000	1
P2RY13	-0.75	0.003	0	-0.39	0.168	0	0.89	0.028	0	0.59	0.249	0	-0.35	0.141	0	1.31	0.002	1
SFRP2	0.10	0.842	0	0.28	0.513	0	1.28	0.006	1	0.44	0.515	0	0.87	0.003	0	0.60	0.117	0

ACCEPTED MANUSCRIPT

LPL	0.65	0.030	0	0.63	0.065	0	0.01	0.970	0	1.73	0.000	1	-0.53	0.074	0	-0.58	0.000	0
ACOXL	0.26	0.332	0	-0.03	0.947	0	-0.46	0.136	0	1.09	0.019	1	-1.76	0.000	-1	-0.10	0.792	0
KRTAP10-5	1.73	0.062	0	0.19	0.910	0	-0.41	0.610	0	-3.15	0.031	-1	2.90	0.000	1	-2.23	0.015	-1
KRTAP10-6	1.73	0.062	0	0.19	0.910	0	-0.41	0.610	0	-3.15	0.031	-1	2.90	0.000	1	-2.23	0.015	-1
KRTAP10-7	1.73	0.062	0	0.19	0.910	0	-0.41	0.610	0	-3.15	0.031	-1	2.90	0.000	1	-2.23	0.015	-1
KRTAP10-1	1.73	0.062	0	0.19	0.910	0	-0.41	0.610	0	-3.15	0.031	-1	2.90	0.000	1	-2.23	0.015	-1
KRTAP10-9	1.73	0.062	0	0.19	0.910	0	-0.41	0.610	0	-3.15	0.031	-1	2.90	0.000	1	-2.23	0.015	-1
KRTAP10-1	1.73	0.062	0	0.19	0.910	0	-0.41	0.610	0	-3.15	0.031	-1	2.90	0.000	1	-2.23	0.015	-1
KRTAP10-4	1.73	0.062	0	0.19	0.910	0	-0.41	0.610	0	-3.15	0.031	-1	2.90	0.000	1	-2.23	0.015	-1
KRTAP10-1	1.73	0.062	0	0.19	0.910	0	-0.41	0.610	0	-3.15	0.031	-1	2.90	0.000	1	-2.23	0.015	-1
KRTAP10-8	1.73	0.062	0	0.19	0.910	0	-0.41	0.610	0	-3.15	0.031	-1	2.90	0.000	1	-2.23	0.015	-1
KRTAP10-2	1.73	0.062	0	0.19	0.910	0	-0.41	0.610	0	-3.15	0.031	-1	2.90	0.000	1	-2.23	0.015	-1
KRTAP10-1	1.73	0.062	0	0.19	0.910	0	-0.41	0.610	0	-3.15	0.031	-1	2.90	0.000	1	-2.23	0.015	-1
KRTAP10-3	1.73	0.062	0	0.19	0.910	0	-0.41	0.610	0	-3.15	0.031	-1	2.90	0.000	1	-2.23	0.015	-1
CENPW	0.21	0.740	0	-0.24	0.699	0	0.15	0.699	0	0.38	0.362	0	-0.23	0.364	0	1.26	0.000	1
EFEMP2	0.26	0.368	0	0.14	0.686	0	1.15	0.013	1	0.47	0.146	0	0.75	0.002	0	0.78	0.001	0
MSX2	0.39	0.571	0	-0.10	0.922	0	-0.47	0.111	0	-1.69	0.047	-1	0.13	0.767	0	-2.25	0.010	-1
SULF2	0.38	0.189	0	0.19	0.593	0	0.50	0.024	0	-0.25	0.591	0	0.58	0.009	0	-1.23	0.000	-1
FADS6	0.20	0.608	0	-0.07	0.887	0	-0.19	0.425	0	0.08	0.888	0	-0.05	0.772	0	-1.08	0.000	-1
APOBEC3C	-0.23	0.502	0	0.11	0.801	0	0.20	0.227	0	0.54	0.130	0	0.32	0.227	0	1.23	0.004	1
APOBEC3D	-0.23	0.502	0	0.11	0.801	0	0.20	0.227	0	0.54	0.130	0	0.32	0.227	0	1.23	0.004	1
APOBEC3B	-0.23	0.502	0	0.11	0.801	0	0.20	0.227	0	0.54	0.130	0	0.32	0.227	0	1.23	0.004	1
KRT24	-1.25	0.001	-1	-0.88	0.025	0	-1.02	0.063	0	-0.95	0.058	0	-4.85	0.000	-1	-1.27	0.001	-1
GSTM2	0.09	0.839	0	0.26	0.478	0	-0.27	0.363	0	0.26	0.671	0	-0.29	0.111	0	-1.18	0.000	-1
ALOXE3	-1.00	0.000	-1	-0.48	0.077	0	-0.40	0.249	0	-0.11	0.744	0	-0.81	0.000	0	-0.14	0.596	0
PSMB10	0.18	0.700	0	0.08	0.896	0	0.64	0.036	0	0.52	0.153	0	1.28	0.000	1	1.34	0.000	1
KRT33A	2.08	0.290	0	0.81	0.759	0	0.02	0.989	0	-3.54	0.054	0	3.38	0.000	1	-5.23	0.001	-1
KRT33B	2.08	0.290	0	0.81	0.759	0	0.02	0.989	0	-3.54	0.054	0	3.38	0.000	1	-5.23	0.001	-1
KRT34	2.08	0.290	0	0.81	0.759	0	0.02	0.989	0	-3.54	0.054	0	3.38	0.000	1	-5.23	0.001	-1
RBP1	1.12	0.004	1	0.19	0.723	0	1.86	0.001	1	1.00	0.023	0	1.67	0.000	1	0.73	0.017	0
WNT3	0.10	0.854	0	-0.20	0.684	0	-0.32	0.432	0	-0.46	0.292	0	-0.29	0.037	0	-1.15	0.000	-1
WNT3	0.10	0.854	0	-0.20	0.684	0	-0.32	0.432	0	-0.46	0.292	0	-0.29	0.037	0	-1.15	0.000	-1

HSD17B12	0.40	0.048	0	0.04	0.903	0	-0.18	0.349	0	1.16	0.001	1	-0.45	0.001	0	-0.09	0.418	0
SENP6	-0.07	0.873	0	-0.02	0.961	0	-0.15	0.239	0	0.06	0.861	0	-0.16	0.212	0	-1.17	0.000	-1
CAMTA1	-0.32	0.084	0	0.04	0.912	0	-0.35	0.082	0	-0.09	0.772	0	-0.44	0.036	0	-1.09	0.000	-1
MKI67	0.46	0.267	0	-0.08	0.905	0	1.24	0.000	1	0.85	0.033	0	0.45	0.007	0	0.48	0.020	0
BTNL9	0.07	0.923	0	0.43	0.386	0	-0.24	0.222	0	-0.19	0.662	0	-0.06	0.746	0	-2.02	0.000	-1
FAM72D	0.06	0.911	0	0.16	0.725	0	-0.18	0.619	0	-0.34	0.578	0	-0.15	0.673	0	1.17	0.001	1
RASA4	-0.34	0.390	0	-0.17	0.732	0	-0.06	0.834	0	0.75	0.011	0	0.07	0.731	0	1.00	0.001	1
RASA4	-0.34	0.390	0	-0.17	0.732	0	-0.06	0.834	0	0.75	0.011	0	0.07	0.731	0	1.00	0.001	1
RASA4B	-0.34	0.390	0	-0.17	0.732	0	-0.06	0.834	0	0.75	0.011	0	0.07	0.731	0	1.00	0.001	1
IFNAR2	0.13	0.550	0	0.23	0.243	0	0.51	0.026	0	0.57	0.029	0	0.84	0.000	0	1.32	0.000	1
NCF2	-0.07	0.899	0	-0.05	0.926	0	1.24	0.024	1	0.16	0.613	0	0.32	0.155	0	1.19	0.004	1
IGFBP2	0.37	0.460	0	-0.41	0.445	0	0.75	0.015	0	0.83	0.022	0	0.01	0.993	0	-1.16	0.000	-1
FYB	0.23	0.515	0	0.11	0.810	0	0.66	0.087	0	0.27	0.538	0	1.46	0.000	1	2.20	0.000	1
MARVELD2	-0.37	0.093	0	-0.02	0.964	0	-1.00	0.007	0	-0.44	0.040	0	-0.53	0.017	0	-1.16	0.000	-1
TM4SF4	0.42	0.416	0	0.51	0.337	0	0.12	0.748	0	-1.69	0.036	-1	0.23	0.362	0	-0.71	0.053	0
KLRC4	0.84	0.020	0	0.27	0.578	0	0.00	0.988	0	-0.49	0.467	0	1.52	0.000	1	2.82	0.000	1
KRT1	1.15	0.000	1	0.07	0.889	0	1.32	0.000	1	1.53	0.000	1	1.05	0.000	1	0.52	0.005	0
S1PR3	0.58	0.057	0	0.51	0.147	0	1.59	0.008	1	0.41	0.359	0	1.26	0.000	1	0.73	0.068	0
RNF180	0.21	0.540	0	-0.03	0.959	0	0.33	0.098	0	-1.14	0.031	-1	0.47	0.027	0	-0.99	0.008	0
ABTB2	-0.29	0.386	0	-0.27	0.472	0	-0.51	0.017	0	-1.18	0.011	-1	-0.41	0.022	0	-1.29	0.000	-1
SERPINB1	0.04	0.950	0	-0.26	0.592	0	0.87	0.002	0	1.76	0.005	1	1.96	0.000	1	1.35	0.000	1
NMI	-0.12	0.708	0	0.11	0.741	0	0.00	0.989	0	0.45	0.102	0	2.23	0.000	1	1.28	0.000	1
CCL1	0.07	0.890	0	0.20	0.605	0	0.05	0.849	0	-0.06	0.900	0	1.35	0.000	1	0.70	0.001	0
PTCH2	0.49	0.392	0	0.23	0.748	0	0.61	0.024	0	-0.51	0.754	0	0.16	0.354	0	-1.45	0.006	-1
NAV2	0.07	0.874	0	0.12	0.752	0	-0.14	0.496	0	-0.83	0.039	0	0.00	0.998	0	-1.55	0.000	-1
IL20	1.69	0.005	1	0.24	0.786	0	-0.18	0.678	0	3.74	0.000	1	-0.15	0.500	0	0.23	0.186	0
GPC3	0.49	0.028	0	0.45	0.073	0	0.24	0.411	0	0.15	0.868	0	-0.24	0.525	0	-1.20	0.000	-1
DDIT4L	0.25	0.502	0	0.37	0.325	0	-0.70	0.023	0	-0.52	0.241	0	-0.66	0.012	0	-1.57	0.000	-1
BATF	0.13	0.836	0	0.06	0.931	0	0.32	0.573	0	-0.19	0.659	0	0.48	0.042	0	2.28	0.000	1
VWA5A	0.69	0.113	0	0.85	0.082	0	1.62	0.006	1	0.22	0.681	0	0.49	0.005	0	-0.38	0.079	0
PARP12	-0.12	0.726	0	-0.16	0.626	0	0.35	0.082	0	0.37	0.138	0	2.15	0.000	1	0.74	0.004	0
LCP2	0.40	0.230	0	0.33	0.377	0	1.04	0.033	1	0.54	0.053	0	1.04	0.002	1	1.82	0.000	1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

CBSL	-0.24	0.414	0	0.07	0.874	0	-1.03	0.009	-1	-0.77	0.063	0	-0.57	0.007	0	-2.35	0.000	-1
CYP2S1	0.17	0.729	0	-0.22	0.636	0	0.29	0.429	0	-0.37	0.163	0	0.24	0.240	0	-1.23	0.001	-1
FES	-0.25	0.564	0	-0.36	0.400	0	0.84	0.005	0	0.27	0.475	0	0.32	0.011	0	1.34	0.000	1
NEK6	0.23	0.400	0	0.13	0.699	0	1.31	0.015	1	0.03	0.959	0	1.25	0.000	1	0.86	0.008	0
LGR5	0.66	0.048	0	0.38	0.345	0	0.66	0.031	0	-0.05	0.935	0	0.88	0.004	0	-1.19	0.000	-1
RRAGD	0.00	0.999	0	0.52	0.270	0	-0.85	0.019	0	0.45	0.629	0	-0.94	0.001	0	-1.04	0.000	-1
AKR1C2	-0.61	0.533	0	0.18	0.893	0	0.42	0.473	0	0.15	0.857	0	0.19	0.167	0	-2.09	0.000	-1
FAM57B	-0.29	0.368	0	-0.32	0.336	0	-1.12	0.034	-1	0.89	0.074	0	-1.17	0.000	-1	-1.34	0.000	-1
RBM3	0.15	0.585	0	-0.01	0.976	0	0.06	0.703	0	0.75	0.006	0	0.30	0.062	0	-2.00	0.000	-1
RUNX1	0.51	0.142	0	0.42	0.285	0	0.39	0.144	0	-0.12	0.735	0	1.04	0.000	1	0.85	0.000	0
RUNX1	0.51	0.142	0	0.42	0.285	0	0.39	0.144	0	-0.12	0.735	0	1.04	0.000	1	0.85	0.000	0
TAC4	1.10	0.002	1	0.11	0.834	0	0.53	0.145	0	1.54	0.003	1	-0.24	0.136	0	0.60	0.035	0
SLAMF8	0.08	0.905	0	0.30	0.544	0	0.47	0.194	0	0.47	0.228	0	0.47	0.047	0	2.74	0.000	1
IGLC7	0.17	0.669	0	0.26	0.500	0	-0.04	0.907	0	-0.29	0.326	0	-0.11	0.430	0	1.05	0.004	1
IGLC2	0.17	0.669	0	0.26	0.500	0	-0.04	0.907	0	-0.29	0.326	0	-0.11	0.430	0	1.05	0.004	1
SEMA3E	0.23	0.506	0	0.34	0.330	0	-0.36	0.049	0	-0.43	0.209	0	-0.40	0.107	0	-1.35	0.000	-1
IDI2	-0.18	0.754	0	0.20	0.724	0	0.94	0.012	0	1.77	0.020	1	0.54	0.239	0	-0.38	0.011	0
FAH	0.04	0.914	0	0.32	0.227	0	0.22	0.156	0	0.06	0.871	0	-0.28	0.072	0	-1.01	0.000	-1
IPCEF1	-0.22	0.643	0	0.14	0.799	0	0.86	0.206	0	0.22	0.451	0	0.14	0.381	0	2.32	0.000	1
CA5B	0.24	0.410	0	0.40	0.168	0	-0.08	0.704	0	1.00	0.031	1	-0.44	0.047	0	-0.51	0.017	0
HAS3	0.66	0.091	0	0.17	0.770	0	1.99	0.006	1	0.98	0.092	0	2.17	0.000	1	2.02	0.000	1
HLA-E	0.02	0.966	0	0.30	0.415	0	0.57	0.197	0	0.38	0.457	0	1.43	0.000	1	0.03	0.924	0
HLA-F	0.02	0.966	0	0.30	0.415	0	0.57	0.197	0	0.38	0.457	0	1.43	0.000	1	0.03	0.924	0
NFKBID	-0.08	0.842	0	0.01	0.977	0	1.19	0.042	1	0.07	0.902	0	0.40	0.076	0	1.89	0.000	1
ITGA1	0.27	0.528	0	0.68	0.091	0	1.02	0.049	1	-0.01	0.973	0	0.73	0.000	0	0.35	0.031	0
SLC27A4	0.38	0.292	0	-0.30	0.470	0	-0.42	0.104	0	1.03	0.001	1	-0.49	0.006	0	0.16	0.509	0
UPK3B	-0.26	0.421	0	-0.06	0.896	0	-0.68	0.039	0	-1.68	0.001	-1	-0.25	0.190	0	-1.13	0.000	-1
UPK3B	-0.26	0.421	0	-0.06	0.896	0	-0.68	0.039	0	-1.68	0.001	-1	-0.25	0.190	0	-1.13	0.000	-1
DGAT1	1.13	0.009	1	0.00	0.998	0	0.18	0.387	0	1.24	0.001	1	-0.65	0.001	0	0.25	0.125	0
KCNA1	-0.47	0.072	0	-0.03	0.953	0	-0.63	0.036	0	-1.18	0.022	-1	-0.37	0.046	0	-1.79	0.000	-1
RAB6B	-0.32	0.671	0	-0.44	0.531	0	-0.21	0.764	0	-0.11	0.737	0	-0.05	0.843	0	-1.23	0.000	-1
LRP8	0.39	0.162	0	-0.09	0.822	0	0.85	0.005	0	-0.01	0.980	0	0.60	0.005	0	1.17	0.000	1

ACCEPTED MANUSCRIPT

RBP2	1.16	0.004	1	-0.26	0.619	0	2.87	0.000	1	1.85	0.000	1	3.29	0.000	1	2.64	0.000	1
KRT75	1.92	0.034	1	0.78	0.507	0	0.17	0.807	0	-1.74	0.009	-1	1.19	0.001	1	-1.22	0.015	-1
SEMA3B	-0.07	0.815	0	0.09	0.768	0	-0.10	0.775	0	-0.19	0.657	0	-0.07	0.611	0	-1.03	0.000	-1
STOX2	0.26	0.341	0	0.09	0.812	0	-0.17	0.307	0	-0.36	0.165	0	-0.45	0.010	0	-1.16	0.000	-1
MYO1G	-0.07	0.928	0	-0.07	0.930	0	0.73	0.006	0	0.12	0.830	0	0.51	0.010	0	1.49	0.001	1
KERA	0.30	0.582	0	0.44	0.405	0	0.99	0.066	0	0.06	0.942	0	-0.14	0.693	0	-1.36	0.000	-1
SFRP1	0.59	0.027	0	0.51	0.091	0	0.33	0.358	0	-0.51	0.490	0	0.36	0.058	0	-1.16	0.000	-1
CGN	-0.89	0.000	0	-0.34	0.193	0	-1.58	0.003	-1	-0.68	0.012	0	-1.01	0.000	-1	-1.45	0.000	-1
FASLG	-0.05	0.871	0	0.17	0.518	0	0.47	0.203	0	0.28	0.311	0	0.18	0.094	0	3.41	0.000	1
PRSS22	0.49	0.430	0	-0.28	0.717	0	0.33	0.082	0	0.70	0.229	0	0.38	0.030	0	1.04	0.001	1
BUB1	0.46	0.357	0	-0.34	0.544	0	1.40	0.002	1	1.00	0.034	1	0.92	0.007	0	0.71	0.032	0
IL24	0.09	0.893	0	0.01	0.991	0	1.24	0.024	1	0.22	0.738	0	4.02	0.000	1	2.94	0.000	1
ZNF365	0.44	0.099	0	0.28	0.377	0	0.30	0.077	0	-0.21	0.576	0	0.31	0.025	0	-1.03	0.006	-1
DSC2	1.52	0.006	1	1.05	0.095	0	1.25	0.049	1	-0.78	0.217	0	1.15	0.000	1	-0.58	0.164	0
NRG4	0.55	0.112	0	0.33	0.434	0	-0.58	0.028	0	1.23	0.002	1	-1.08	0.000	-1	-0.52	0.046	0
HNRNPR	0.24	0.523	0	0.26	0.514	0	-0.60	0.003	0	0.22	0.406	0	-0.24	0.119	0	-1.16	0.000	-1
PPM1H	0.23	0.507	0	0.01	0.981	0	0.48	0.093	0	-0.06	0.916	0	0.21	0.163	0	1.54	0.000	1
CD69	0.26	0.669	0	0.00	0.997	0	0.68	0.034	0	1.38	0.008	1	0.61	0.009	0	2.82	0.000	1
NUDT17	0.34	0.310	0	-0.09	0.858	0	-0.52	0.083	0	0.31	0.188	0	-1.02	0.000	-1	-0.06	0.823	0
FLRT2	0.18	0.485	0	0.37	0.134	0	0.32	0.093	0	-0.47	0.102	0	0.90	0.000	0	-1.09	0.000	-1
KRTAP3-1	1.88	0.386	0	0.61	0.841	0	0.28	0.827	0	-3.96	0.059	0	2.75	0.000	1	-2.51	0.011	-1
NUF2	0.21	0.652	0	-0.28	0.537	0	1.40	0.001	1	1.06	0.011	1	0.44	0.030	0	0.85	0.001	0
CFH	0.20	0.621	0	0.38	0.295	0	0.66	0.017	0	1.08	0.145	0	0.75	0.004	0	-1.00	0.019	-1
CKM	0.14	0.842	0	0.21	0.742	0	-1.10	0.003	-1	0.97	0.596	0	-0.67	0.074	0	-0.87	0.022	0
NAP1L5	0.07	0.902	0	0.15	0.756	0	0.22	0.492	0	-0.43	0.376	0	-0.23	0.284	0	-1.09	0.000	-1
CAT	0.11	0.798	0	0.67	0.047	0	-0.47	0.094	0	0.08	0.784	0	-1.04	0.000	-1	-1.14	0.000	-1
RAB11FIP1	-0.46	0.065	0	-0.38	0.187	0	-0.24	0.248	0	-0.57	0.021	0	-0.26	0.070	0	-1.15	0.002	-1
SCIN	-0.49	0.322	0	0.06	0.939	0	-0.83	0.009	0	-0.63	0.010	0	-1.04	0.000	-1	-0.61	0.005	0
CCL11	-0.23	0.647	0	0.61	0.148	0	-0.02	0.966	0	1.10	0.085	0	1.30	0.010	1	1.10	0.000	1
ADAMTS20	0.51	0.039	0	0.36	0.217	0	0.02	0.952	0	-0.82	0.106	0	-0.14	0.366	0	-2.04	0.023	-1
CERS4	0.53	0.015	0	0.06	0.870	0	-0.41	0.114	0	1.26	0.003	1	-0.63	0.002	0	-0.73	0.013	0
PIGP	0.00	0.998	0	0.00	0.996	0	-0.45	0.032	0	-0.11	0.698	0	-1.09	0.002	-1	-0.43	0.001	0

ACCEPTED MANUSCRIPT

SIGLEC9	0.04	0.945	0	0.07	0.905	0	1.12	0.094	0	-0.36	0.542	0	0.30	0.315	0	3.16	0.000	1
SLC38A4	0.52	0.124	0	0.28	0.510	0	0.40	0.270	0	0.44	0.541	0	0.68	0.001	0	-1.03	0.001	-1
CSF3	-0.01	0.984	0	-0.01	0.994	0	0.29	0.634	0	0.28	0.463	0	0.28	0.268	0	2.40	0.000	1
SH3BP2	-0.17	0.499	0	-0.51	0.032	0	0.45	0.061	0	0.14	0.608	0	0.86	0.001	0	1.09	0.000	1
SOX10	-0.02	0.980	0	0.23	0.596	0	-0.43	0.434	0	-0.58	0.288	0	-0.11	0.449	0	-1.43	0.000	-1
CYP11A1	-0.31	0.458	0	0.19	0.711	0	0.36	0.042	0	1.72	0.032	1	0.74	0.013	0	0.99	0.000	0
S1PR4	-0.21	0.790	0	-0.13	0.880	0	-0.15	0.533	0	0.44	0.317	0	0.00	0.983	0	1.04	0.000	1
SPCS3	0.36	0.304	0	0.44	0.231	0	-0.73	0.008	0	0.07	0.906	0	-0.60	0.027	0	-1.29	0.000	-1
SH2D4A	-0.19	0.564	0	-0.01	0.989	0	-0.62	0.020	0	-0.05	0.867	0	-1.00	0.000	-1	0.10	0.650	0
FAR1	1.14	0.000	1	0.19	0.497	0	0.48	0.095	0	1.68	0.001	1	0.22	0.085	0	0.72	0.000	0
TRIM15	0.03	0.980	0	-0.10	0.921	0	0.42	0.464	0	0.45	0.481	0	1.34	0.000	1	0.49	0.004	0
SLC39A14	0.23	0.435	0	-0.14	0.684	0	1.35	0.007	1	-0.02	0.957	0	0.85	0.000	0	1.08	0.001	1
MS4A6A	-0.27	0.441	0	-0.26	0.501	0	1.59	0.003	1	1.22	0.165	0	0.86	0.008	0	2.37	0.000	1
MS4A6E	-0.27	0.441	0	-0.26	0.501	0	1.59	0.003	1	1.22	0.165	0	0.86	0.008	0	2.37	0.000	1
MTHFR	-0.12	0.662	0	-0.17	0.517	0	-0.08	0.680	0	-0.30	0.140	0	0.04	0.821	0	1.06	0.000	1
VILL	-0.39	0.232	0	-0.01	0.994	0	-0.10	0.748	0	0.30	0.684	0	-0.12	0.402	0	1.42	0.000	1
AMPD1	-0.37	0.384	0	0.71	0.095	0	-1.24	0.009	-1	0.57	0.657	0	-0.59	0.027	0	-1.18	0.004	-1
SLC39A10	1.10	0.003	1	0.63	0.133	0	0.23	0.300	0	-0.35	0.536	0	0.59	0.000	0	-1.09	0.020	-1
PDGFA	-0.03	0.960	0	0.00	0.998	0	-0.15	0.539	0	-0.24	0.542	0	-0.27	0.021	0	-1.13	0.000	-1
SLC25A48	-0.36	0.265	0	-0.60	0.075	0	0.76	0.002	0	0.52	0.114	0	1.46	0.000	1	0.69	0.006	0
CASC5	0.31	0.565	0	-0.11	0.872	0	1.01	0.004	1	0.79	0.103	0	0.57	0.002	0	0.80	0.006	0
ICOS	0.79	0.001	0	0.16	0.592	0	1.10	0.004	1	0.12	0.637	0	1.52	0.000	1	2.90	0.000	1
NRROS	0.16	0.722	0	0.16	0.714	0	0.47	0.112	0	0.45	0.405	0	0.47	0.041	0	1.23	0.006	1
PIK3CD	-0.02	0.971	0	-0.13	0.778	0	0.69	0.031	0	0.64	0.060	0	0.41	0.019	0	1.59	0.001	1
CNFN	0.08	0.834	0	-0.45	0.090	0	0.55	0.104	0	0.01	0.979	0	0.60	0.001	0	1.44	0.001	1
GOLGA7B	0.72	0.146	0	0.25	0.712	0	0.24	0.391	0	-1.10	0.036	-1	0.15	0.469	0	-1.69	0.007	-1
SSPN	0.04	0.927	0	0.32	0.292	0	-0.30	0.077	0	0.44	0.380	0	-0.39	0.082	0	-1.28	0.000	-1
APOL4	-0.23	0.770	0	-0.01	0.991	0	0.97	0.064	0	1.27	0.067	0	0.00	0.998	0	1.95	0.000	1
APOL2	-0.23	0.770	0	-0.01	0.991	0	0.97	0.064	0	1.27	0.067	0	0.00	0.998	0	1.95	0.000	1
KRTAP1-5	2.22	0.291	0	1.05	0.693	0	0.45	0.682	0	-4.02	0.057	0	2.09	0.002	1	-5.17	0.001	-1
KRTAP1-4	2.22	0.291	0	1.05	0.693	0	0.45	0.682	0	-4.02	0.057	0	2.09	0.002	1	-5.17	0.001	-1
KRTAP1-3	2.22	0.291	0	1.05	0.693	0	0.45	0.682	0	-4.02	0.057	0	2.09	0.002	1	-5.17	0.001	-1

ACCEPTED MANUSCRIPT

KRTAP1-1	2.22	0.291	0	1.05	0.693	0	0.45	0.682	0	-4.02	0.057	0	2.09	0.002	1	-5.17	0.001	-1
EREG	-0.62	0.062	0	-0.34	0.408	0	0.46	0.041	0	1.03	0.014	1	0.84	0.034	0	-0.24	0.209	0
IRF9	-0.29	0.225	0	-0.08	0.813	0	0.29	0.107	0	0.20	0.600	0	1.38	0.000	1	0.55	0.014	0
SLC16A1	0.57	0.013	0	0.07	0.862	0	0.51	0.007	0	1.92	0.000	1	0.21	0.128	0	0.96	0.000	0
PILRB	-0.35	0.544	0	-0.08	0.921	0	1.22	0.045	1	0.98	0.052	0	0.80	0.004	0	2.54	0.000	1
KRT27	3.07	0.096	0	1.07	0.676	0	1.28	0.188	0	-1.78	0.266	0	3.39	0.000	1	-4.79	0.002	-1
MYLPF	-0.31	0.253	0	0.14	0.700	0	-1.20	0.004	-1	1.19	0.306	0	-0.92	0.001	0	-0.17	0.100	0
SLC28A3	0.18	0.734	0	-0.36	0.444	0	0.41	0.098	0	0.74	0.013	0	0.27	0.106	0	1.95	0.000	1
SLFN12	0.14	0.759	0	-0.01	0.981	0	1.63	0.008	1	1.17	0.007	1	3.30	0.000	1	1.75	0.002	1
TNNC2	-0.03	0.963	0	0.50	0.136	0	-1.21	0.004	-1	1.51	0.381	0	-0.70	0.004	0	-0.28	0.005	0
SERPINA12	-1.12	0.000	-1	-0.18	0.405	0	-0.24	0.229	0	-0.89	0.010	0	-0.68	0.004	0	-4.59	0.000	-1
TMEFF1	0.97	0.001	0	0.35	0.273	0	0.03	0.904	0	0.02	0.973	0	0.01	0.967	0	-1.14	0.007	-1
MSANTD3-T	0.97	0.001	0	0.35	0.273	0	0.03	0.904	0	0.02	0.973	0	0.01	0.967	0	-1.14	0.007	-1
NAIP	-0.74	0.126	0	0.00	0.998	0	-0.03	0.954	0	0.86	0.098	0	0.12	0.635	0	1.22	0.004	1
PGLYRP1	-0.14	0.753	0	-0.05	0.933	0	0.90	0.054	0	-0.07	0.879	0	0.19	0.524	0	1.95	0.000	1
RNF146	0.01	0.985	0	0.01	0.971	0	-0.31	0.033	0	0.08	0.806	0	-1.00	0.000	-1	-0.34	0.003	0
NUS1	0.64	0.017	0	0.10	0.804	0	0.43	0.035	0	0.81	0.003	0	0.61	0.005	0	1.13	0.000	1
COL5A2	0.31	0.452	0	0.00	0.997	0	1.27	0.004	1	0.90	0.027	0	0.71	0.003	0	-0.21	0.227	0
HSH2D	0.01	0.988	0	-0.02	0.974	0	0.52	0.082	0	0.13	0.791	0	0.06	0.689	0	1.55	0.000	1
CHIT1	0.13	0.739	0	-0.63	0.043	0	0.26	0.323	0	0.04	0.909	0	0.01	0.973	0	1.05	0.001	1
PYY	-1.10	0.096	0	-0.09	0.944	0	0.47	0.330	0	-1.14	0.016	-1	1.93	0.000	1	-2.26	0.000	-1
CLEC3B	0.28	0.657	0	0.20	0.778	0	-0.22	0.482	0	-0.33	0.620	0	-0.16	0.337	0	-1.14	0.001	-1
CKAP2	0.22	0.705	0	-0.16	0.804	0	1.02	0.003	1	0.77	0.031	0	0.19	0.323	0	0.73	0.003	0
CDH19	-0.16	0.805	0	0.67	0.168	0	-0.25	0.287	0	-0.65	0.099	0	-0.40	0.094	0	-1.54	0.000	-1
DEPDC1	0.43	0.458	0	-0.08	0.926	0	1.17	0.004	1	0.82	0.090	0	0.49	0.038	0	0.50	0.106	0
FHAD1	0.50	0.042	0	-0.20	0.529	0	-0.17	0.660	0	0.36	0.265	0	-0.08	0.554	0	1.40	0.000	1
PPP1R9A	-0.08	0.906	0	0.40	0.408	0	-0.20	0.557	0	0.01	0.982	0	-0.32	0.015	0	-1.31	0.001	-1
RERG	0.11	0.715	0	0.30	0.241	0	0.05	0.881	0	0.16	0.667	0	0.16	0.506	0	-1.31	0.000	-1
CDC25C	0.27	0.689	0	-0.19	0.803	0	1.20	0.007	1	0.63	0.105	0	0.27	0.236	0	1.11	0.001	1
FAM117A	-0.56	0.042	0	-0.16	0.685	0	-0.56	0.025	0	-1.03	0.004	-1	-0.14	0.355	0	-1.20	0.000	-1
PER3	-0.77	0.001	0	-0.19	0.503	0	-0.82	0.005	0	1.04	0.004	1	-0.69	0.004	0	0.63	0.004	0
CCL5	-0.53	0.415	0	0.45	0.539	0	-0.07	0.843	0	0.94	0.008	0	1.16	0.000	1	4.26	0.000	1

ACCEPTED MANUSCRIPT

PHF11	-0.28	0.496	0	-0.20	0.673	0	0.14	0.736	0	0.10	0.810	0	0.12	0.740	0	1.16	0.015	1
SMTNL2	-0.11	0.791	0	0.11	0.793	0	-0.13	0.651	0	0.18	0.825	0	0.00	0.994	0	-1.17	0.001	-1
UBD	0.04	0.927	0	0.09	0.832	0	0.27	0.202	0	0.10	0.807	0	3.24	0.000	1	3.26	0.000	1
TRDN	-0.55	0.611	0	0.39	0.753	0	-1.11	0.011	-1	1.68	0.288	0	-1.66	0.002	-1	-0.56	0.034	0
PLCXD2	-0.37	0.196	0	-0.22	0.537	0	0.20	0.358	0	-0.66	0.075	0	-0.23	0.102	0	-1.21	0.000	-1
IL22RA1	-1.00	0.000	-1	-0.52	0.063	0	-0.57	0.080	0	-0.58	0.032	0	-0.35	0.064	0	0.08	0.689	0
C1orf54	-0.18	0.591	0	-0.06	0.902	0	0.15	0.441	0	0.35	0.290	0	0.02	0.923	0	1.02	0.006	1
CHCHD10	0.02	0.985	0	0.21	0.728	0	-0.44	0.158	0	1.02	0.015	1	-0.40	0.023	0	-0.25	0.193	0
CHL1	-0.23	0.256	0	-0.17	0.478	0	-0.01	0.970	0	-0.13	0.648	0	-0.27	0.067	0	1.62	0.000	1
CXCR4	0.61	0.020	0	0.06	0.889	0	1.24	0.077	0	-0.10	0.862	0	0.72	0.020	0	1.36	0.000	1
CCL15	0.38	0.162	0	0.22	0.523	0	1.62	0.004	1	1.50	0.120	0	0.85	0.032	0	0.96	0.060	0
CCL15-CCL	0.38	0.162	0	0.22	0.523	0	1.62	0.004	1	1.50	0.120	0	0.85	0.032	0	0.96	0.060	0
CPT1B	-0.30	0.543	0	0.07	0.925	0	-0.71	0.005	0	-0.04	0.948	0	-0.56	0.007	0	-1.24	0.002	-1
CLDN23	-0.46	0.175	0	-0.32	0.431	0	-0.69	0.050	0	-0.93	0.004	0	-0.59	0.031	0	-1.65	0.000	-1
RGS16	0.04	0.931	0	-0.04	0.948	0	0.75	0.013	0	0.43	0.222	0	1.35	0.002	1	0.32	0.249	0
CCL27	0.98	0.275	0	0.97	0.321	0	-0.77	0.031	0	-0.51	0.028	0	-0.78	0.322	0	-1.05	0.001	-1
CAMSAP3	-0.68	0.002	0	-0.16	0.556	0	-0.92	0.031	0	-0.89	0.001	0	-0.76	0.002	0	-1.19	0.000	-1
SERTAD4	-0.50	0.060	0	-0.02	0.973	0	-0.57	0.013	0	0.15	0.677	0	-0.09	0.651	0	-1.06	0.000	-1
UPB1	0.30	0.499	0	0.22	0.667	0	-0.15	0.677	0	-0.81	0.013	0	0.11	0.717	0	-1.67	0.000	-1
MYO1D	0.15	0.609	0	0.15	0.629	0	-0.35	0.024	0	-0.65	0.075	0	-0.87	0.000	0	-1.01	0.001	-1
DMD	-0.35	0.492	0	0.56	0.260	0	-0.97	0.002	0	0.22	0.617	0	-0.74	0.002	0	-1.55	0.000	-1
IFIT3	-0.15	0.803	0	-0.16	0.799	0	-0.12	0.683	0	-0.09	0.864	0	1.96	0.000	1	1.19	0.017	1
SLAMF9	-0.08	0.893	0	0.08	0.892	0	0.59	0.068	0	0.20	0.719	0	-0.07	0.737	0	1.33	0.007	1
SCGB3A2	-0.27	0.444	0	-0.30	0.433	0	0.09	0.871	0	0.18	0.641	0	-1.17	0.001	-1	0.14	0.267	0
SVIP	-0.22	0.457	0	-0.14	0.693	0	-0.67	0.025	0	-0.35	0.282	0	-0.41	0.003	0	-1.18	0.000	-1
C9orf91	0.18	0.760	0	0.07	0.924	0	0.18	0.544	0	0.05	0.923	0	0.20	0.150	0	1.04	0.000	1
TNF	0.24	0.678	0	0.21	0.746	0	1.48	0.034	1	0.24	0.709	0	1.24	0.001	1	1.00	0.000	1
HSD17B13	-0.46	0.267	0	0.42	0.353	0	-0.86	0.014	0	-0.14	0.803	0	-0.03	0.882	0	-1.31	0.000	-1
CKS2	0.36	0.346	0	-0.40	0.441	0	1.35	0.001	1	0.93	0.039	0	0.76	0.057	0	0.45	0.024	0
GIMAP7	-0.07	0.877	0	-0.06	0.912	0	0.18	0.484	0	-0.39	0.512	0	0.03	0.891	0	3.62	0.000	1
B4GALT6	0.13	0.595	0	0.39	0.085	0	0.60	0.022	0	-0.79	0.110	0	-0.25	0.133	0	1.02	0.000	1
PLS1	-1.76	0.000	-1	-0.19	0.762	0	-1.35	0.013	-1	-0.36	0.415	0	-0.63	0.000	0	-0.68	0.008	0

PLBD1	0.10	0.725	0	-0.07	0.835	0	0.40	0.014	0	0.38	0.051	0	0.41	0.009	0	1.01	0.000	1
CYSLTR1	-0.25	0.507	0	0.20	0.634	0	-0.30	0.140	0	0.54	0.235	0	-1.18	0.000	-1	0.31	0.480	0
FPR3	0.42	0.393	0	0.55	0.276	0	3.12	0.046	1	-0.81	0.181	0	0.66	0.008	0	4.02	0.000	1
FPR2	0.42	0.393	0	0.55	0.276	0	3.12	0.046	1	-0.81	0.181	0	0.66	0.008	0	4.02	0.000	1
SYK	0.12	0.804	0	-0.14	0.774	0	1.47	0.024	1	-0.25	0.597	0	0.82	0.000	0	1.13	0.001	1
DNAJB4	-0.26	0.424	0	0.06	0.897	0	-0.41	0.031	0	0.40	0.188	0	-0.80	0.000	0	-1.04	0.000	-1
CLEC4M	0.14	0.785	0	0.40	0.337	0	0.73	0.040	0	-0.26	0.816	0	-0.47	0.064	0	-1.17	0.020	-1
FGD3	0.10	0.789	0	-0.05	0.894	0	0.76	0.070	0	0.09	0.920	0	0.01	0.964	0	1.62	0.000	1
SLFN12	-0.30	0.668	0	0.11	0.900	0	1.38	0.005	1	0.86	0.207	0	0.81	0.010	0	2.28	0.004	1
ELK3	0.33	0.105	0	0.30	0.201	0	1.01	0.012	1	0.89	0.041	0	0.47	0.008	0	0.71	0.001	0
PLEK	-0.05	0.912	0	-0.17	0.634	0	1.69	0.028	1	1.01	0.098	0	1.74	0.000	1	2.54	0.000	1
RGN	-0.08	0.821	0	-0.79	0.008	0	0.31	0.237	0	1.86	0.002	1	0.07	0.848	0	1.03	0.002	1
CD300LB	0.25	0.382	0	0.31	0.292	0	1.23	0.040	1	0.29	0.416	0	0.25	0.311	0	1.09	0.018	1
KRT33A	1.53	0.296	0	0.50	0.806	0	0.14	0.887	0	-3.20	0.019	-1	0.85	0.003	0	-3.81	0.005	-1
KRT33B	1.53	0.296	0	0.50	0.806	0	0.14	0.887	0	-3.20	0.019	-1	0.85	0.003	0	-3.81	0.005	-1
KRT34	1.53	0.296	0	0.50	0.806	0	0.14	0.887	0	-3.20	0.019	-1	0.85	0.003	0	-3.81	0.005	-1
CST7	0.03	0.947	0	-0.18	0.542	0	0.15	0.563	0	0.56	0.104	0	0.44	0.029	0	2.28	0.000	1
GNGT2	0.16	0.652	0	0.17	0.632	0	-0.16	0.536	0	0.19	0.655	0	0.06	0.838	0	1.71	0.000	1
HSPB8	0.04	0.956	0	-0.03	0.964	0	-0.13	0.652	0	-1.24	0.001	-1	-0.60	0.005	0	-1.02	0.000	-1
VSNL1	1.31	0.000	1	1.29	0.001	1	0.54	0.084	0	0.55	0.044	0	0.57	0.102	0	0.53	0.008	0
KRT23	-0.11	0.717	0	0.02	0.962	0	-1.05	0.011	-1	-0.90	0.002	0	-0.82	0.000	0	-1.68	0.000	-1
OLAH	0.70	0.106	0	-0.60	0.229	0	2.11	0.001	1	4.29	0.000	1	0.99	0.006	0	2.68	0.000	1
INSIG2	0.30	0.183	0	0.41	0.093	0	-0.39	0.022	0	0.11	0.749	0	-0.57	0.001	0	-1.10	0.000	-1
SLC37A2	0.58	0.025	0	-0.48	0.108	0	1.08	0.000	1	1.20	0.002	1	1.14	0.000	1	2.00	0.000	1
EDAR	-0.34	0.428	0	0.07	0.922	0	-0.24	0.462	0	-0.60	0.223	0	-0.28	0.194	0	-1.53	0.001	-1
LCE3B	-0.59	0.035	0	-0.99	0.005	0	2.25	0.000	1	1.07	0.123	0	1.94	0.000	1	3.64	0.000	1
SP110	0.02	0.976	0	0.35	0.199	0	0.87	0.024	0	0.52	0.108	0	1.81	0.000	1	0.65	0.002	0
CDHR1	0.54	0.217	0	-0.21	0.715	0	2.03	0.001	1	1.18	0.031	1	1.25	0.000	1	3.32	0.000	1
ATP8B4	0.34	0.332	0	0.17	0.704	0	0.85	0.044	0	0.87	0.006	0	0.28	0.072	0	2.03	0.000	1
ANKRD1	0.20	0.732	0	0.57	0.223	0	0.53	0.333	0	1.10	0.141	0	-0.23	0.291	0	2.73	0.028	1
C6	-0.04	0.928	0	0.00	0.995	0	0.57	0.046	0	0.27	0.387	0	0.09	0.669	0	-1.41	0.009	-1
CCDC125	0.07	0.932	0	0.06	0.943	0	-0.03	0.933	0	0.34	0.392	0	0.05	0.814	0	1.00	0.000	1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

BST2	-0.51	0.204	0	-0.28	0.570	0	0.53	0.056	0	0.61	0.160	0	1.56	0.000	1	0.98	0.022	0
SLAIN1	0.34	0.705	0	-0.09	0.938	0	0.03	0.952	0	-1.39	0.013	-1	-0.02	0.959	0	-0.22	0.720	0
RAB31	0.39	0.060	0	-0.12	0.675	0	1.00	0.001	0	1.02	0.007	1	1.16	0.000	1	1.18	0.000	1
ATP12A	1.92	0.001	1	-0.16	0.848	0	0.99	0.004	0	0.92	0.463	0	0.57	0.002	0	1.57	0.002	1
PTPRC	0.18	0.595	0	0.22	0.507	0	0.99	0.029	0	0.52	0.102	0	1.23	0.000	1	1.36	0.003	1
FGF23	0.29	0.401	0	0.24	0.539	0	2.67	0.001	1	0.21	0.665	0	0.88	0.002	0	0.72	0.001	0
IFIT2	0.16	0.794	0	0.55	0.243	0	-0.07	0.778	0	0.54	0.331	0	1.14	0.005	1	1.43	0.009	1
DUSP15	-1.00	0.005	0	-0.07	0.911	0	-0.53	0.223	0	-0.49	0.123	0	-0.20	0.259	0	-1.05	0.001	-1
ENG	0.02	0.968	0	0.42	0.137	0	1.13	0.001	1	0.38	0.258	0	0.52	0.029	0	0.43	0.008	0
HVCN1	-0.29	0.544	0	-0.11	0.866	0	0.15	0.616	0	-0.08	0.831	0	-0.03	0.907	0	1.44	0.000	1
ISG20	0.16	0.571	0	0.31	0.214	0	0.61	0.065	0	-0.85	0.003	0	0.16	0.459	0	1.64	0.000	1
C4orf47	-0.59	0.232	0	0.14	0.848	0	-1.06	0.002	-1	-0.47	0.276	0	-0.39	0.003	0	-1.52	0.000	-1
SLFN12	-0.22	0.754	0	-0.29	0.665	0	3.58	0.009	1	0.57	0.430	0	2.44	0.000	1	1.89	0.011	1
ADAMTS12	0.42	0.046	0	0.46	0.056	0	0.93	0.010	0	0.32	0.500	0	0.51	0.001	0	-1.15	0.000	-1
CHIA	-0.32	0.611	0	0.27	0.698	0	0.23	0.512	0	-0.04	0.936	0	6.34	0.000	1	4.60	0.000	1
LGR4	0.23	0.256	0	0.00	0.998	0	-0.25	0.103	0	-0.09	0.778	0	-0.36	0.198	0	-1.09	0.000	-1
ABCG2	-0.16	0.520	0	0.14	0.598	0	0.22	0.199	0	1.00	0.023	1	0.33	0.031	0	0.46	0.022	0
CRLF1	-0.64	0.063	0	-0.34	0.435	0	-0.15	0.498	0	-0.89	0.091	0	-0.91	0.000	0	-1.09	0.000	-1
RAPGEF3	-0.47	0.141	0	-0.12	0.792	0	-0.32	0.085	0	-0.35	0.146	0	-0.21	0.112	0	-1.20	0.000	-1
CSTA	2.54	0.000	1	-0.67	0.382	0	3.93	0.001	1	3.56	0.000	1	4.57	0.000	1	2.91	0.000	1
SH3D21	-1.32	0.000	-1	-0.44	0.132	0	-1.07	0.018	-1	-1.46	0.000	-1	-0.73	0.002	0	-0.88	0.001	0
TNFAIP8L2	-0.06	0.931	0	-0.12	0.837	0	0.62	0.068	0	0.14	0.793	0	-0.01	0.975	0	1.19	0.007	1
TMSB10	0.11	0.852	0	-0.08	0.904	0	0.08	0.767	0	-0.18	0.689	0	1.19	0.000	1	-0.29	0.052	0
TACR1	0.02	0.967	0	-0.07	0.886	0	1.01	0.005	1	0.55	0.044	0	0.56	0.011	0	-0.09	0.359	0
POLD3	0.11	0.718	0	0.06	0.880	0	-0.07	0.660	0	0.30	0.241	0	0.13	0.443	0	1.08	0.000	1
KRTAP13-1	1.84	0.233	0	0.94	0.628	0	-0.32	0.806	0	-3.14	0.076	0	3.68	0.001	1	-2.97	0.008	-1
KRTAP13-2	1.84	0.233	0	0.94	0.628	0	-0.32	0.806	0	-3.14	0.076	0	3.68	0.001	1	-2.97	0.008	-1
SLA	-0.22	0.443	0	-0.24	0.454	0	0.89	0.018	0	0.03	0.974	0	1.01	0.000	1	1.57	0.001	1
C4orf19	0.26	0.504	0	-0.07	0.906	0	0.18	0.631	0	0.01	0.992	0	0.26	0.194	0	1.34	0.000	1
CRK	0.04	0.896	0	-0.08	0.758	0	0.16	0.364	0	0.10	0.643	0	0.19	0.128	0	1.08	0.000	1
BNC2	0.42	0.172	0	0.56	0.089	0	0.04	0.891	0	-0.44	0.282	0	-0.03	0.930	0	-1.80	0.000	-1
KIF2C	0.50	0.082	0	-0.07	0.896	0	1.01	0.001	1	0.87	0.033	0	0.71	0.005	0	1.12	0.000	1

ACCEPTED MANUSCRIPT

PLEKHG3	-0.09	0.781	0	0.02	0.956	0	-0.23	0.111	0	-0.49	0.036	0	0.04	0.818	0	-1.45	0.000	-1
KLHL33	-0.39	0.459	0	0.04	0.962	0	-1.47	0.001	-1	0.08	0.936	0	-0.36	0.115	0	-0.01	0.897	0
SPRY3	0.16	0.792	0	0.05	0.949	0	-0.09	0.808	0	1.91	0.003	1	-0.49	0.007	0	-0.12	0.503	0
CDH11	0.64	0.017	0	0.58	0.054	0	1.51	0.004	1	1.59	0.006	1	1.20	0.000	1	-0.95	0.014	0
TRIP13	0.28	0.458	0	0.06	0.911	0	0.87	0.008	0	0.60	0.039	0	0.41	0.057	0	1.02	0.001	1
CYP3A43	-0.12	0.785	0	0.04	0.931	0	-0.39	0.056	0	0.28	0.373	0	-0.30	0.069	0	1.50	0.000	1
CYP3A4	-0.12	0.785	0	0.04	0.931	0	-0.39	0.056	0	0.28	0.373	0	-0.30	0.069	0	1.50	0.000	1
CYP3A7-CY	-0.12	0.785	0	0.04	0.931	0	-0.39	0.056	0	0.28	0.373	0	-0.30	0.069	0	1.50	0.000	1
CYP3A7	-0.12	0.785	0	0.04	0.931	0	-0.39	0.056	0	0.28	0.373	0	-0.30	0.069	0	1.50	0.000	1
ELOVL3	1.51	0.000	1	0.23	0.379	0	0.12	0.667	0	2.07	0.000	1	-0.27	0.281	0	0.54	0.154	0
GFPT1	0.39	0.110	0	0.46	0.091	0	0.26	0.142	0	0.13	0.567	0	0.63	0.004	0	1.23	0.000	1
EPSTI1	-0.19	0.769	0	0.10	0.890	0	0.77	0.010	0	0.50	0.301	0	0.24	0.257	0	1.61	0.003	1
APOL4	0.24	0.694	0	-0.13	0.862	0	0.05	0.910	0	0.31	0.582	0	1.71	0.001	1	0.92	0.068	0
APOL2	0.24	0.694	0	-0.13	0.862	0	0.05	0.910	0	0.31	0.582	0	1.71	0.001	1	0.92	0.068	0
KCNJ16	-1.09	0.020	-1	-0.05	0.954	0	-0.64	0.049	0	-1.95	0.000	-1	-0.62	0.001	0	-2.31	0.000	-1
PBK	0.56	0.105	0	-0.18	0.715	0	1.20	0.001	1	0.74	0.064	0	0.11	0.541	0	0.43	0.125	0
MYOM2	0.05	0.939	0	0.55	0.207	0	-1.18	0.003	-1	1.58	0.262	0	-0.99	0.000	0	-1.24	0.001	-1
SEMA4D	0.31	0.510	0	-0.27	0.601	0	0.74	0.080	0	0.34	0.411	0	0.65	0.000	0	1.42	0.000	1
MMP12	0.18	0.812	0	0.43	0.496	0	0.78	0.049	0	1.06	0.057	0	1.50	0.000	1	1.97	0.000	1
F10	0.31	0.589	0	-0.03	0.975	0	1.79	0.014	1	0.14	0.654	0	0.36	0.044	0	2.21	0.000	1
KRT19	-0.09	0.814	0	-0.07	0.849	0	-0.08	0.669	0	0.32	0.208	0	-0.27	0.058	0	-1.12	0.000	-1
SLC25A33	0.64	0.025	0	-0.10	0.831	0	-0.17	0.395	0	1.00	0.023	1	-0.13	0.617	0	-0.01	0.938	0
SERPINB7	-0.78	0.000	0	-0.08	0.775	0	-1.14	0.004	-1	-0.66	0.016	0	-2.24	0.000	-1	-1.14	0.002	-1
BLK	1.91	0.001	1	0.22	0.794	0	0.90	0.056	0	0.41	0.474	0	0.15	0.363	0	1.54	0.000	1
TMEM164	-0.26	0.446	0	0.35	0.293	0	-0.67	0.002	0	0.10	0.846	0	-1.08	0.000	-1	-0.64	0.001	0
DUSP18	-0.05	0.892	0	0.00	0.994	0	-0.46	0.049	0	0.20	0.499	0	-0.98	0.001	0	-1.35	0.000	-1
PRSS35	0.24	0.568	0	0.01	0.994	0	2.31	0.000	1	0.38	0.808	0	1.19	0.001	1	1.54	0.009	1
ZBTB16	-0.85	0.001	0	-0.24	0.420	0	-0.83	0.077	0	-2.77	0.000	-1	-1.20	0.000	-1	-1.48	0.000	-1
KIF22	0.41	0.181	0	-0.25	0.512	0	1.13	0.000	1	0.58	0.100	0	0.30	0.117	0	0.70	0.008	0
GZMA	0.08	0.871	0	0.02	0.977	0	-0.14	0.691	0	0.16	0.751	0	2.10	0.000	1	4.00	0.000	1
SNTB1	0.41	0.226	0	0.82	0.025	0	-0.73	0.006	0	-0.71	0.004	0	-0.52	0.002	0	-1.27	0.000	-1
SHISA2	0.73	0.016	0	0.42	0.229	0	-0.34	0.091	0	0.04	0.945	0	0.41	0.014	0	-1.54	0.000	-1

CSF3R	0.58	0.032	0	-0.02	0.970	0	3.34	0.004	1	0.38	0.221	0	1.33	0.000	1	3.17	0.000	1
DDR2	0.18	0.554	0	0.36	0.198	0	0.43	0.022	0	0.88	0.003	0	1.49	0.000	1	-0.43	0.052	0
LEPR	0.17	0.671	0	0.58	0.089	0	-0.23	0.193	0	0.23	0.806	0	0.10	0.651	0	-1.51	0.000	-1
CTLA4	-0.34	0.435	0	-0.04	0.954	0	0.93	0.025	0	-0.87	0.117	0	1.18	0.001	1	2.00	0.000	1
MC1R	0.48	0.237	0	-0.05	0.946	0	0.38	0.321	0	-0.34	0.692	0	-0.03	0.904	0	-1.37	0.040	-1
DCK	0.26	0.325	0	0.03	0.942	0	0.63	0.025	0	0.44	0.116	0	0.44	0.006	0	1.05	0.006	1
PTGS2	0.96	0.169	0	0.23	0.831	0	3.05	0.004	1	0.68	0.191	0	1.11	0.047	1	1.79	0.000	1
ARHGEF26	-0.48	0.036	0	-0.04	0.921	0	-0.72	0.004	0	-0.54	0.037	0	-0.53	0.003	0	-1.17	0.000	-1
ADAM12	0.80	0.004	0	0.02	0.977	0	2.31	0.001	1	1.53	0.000	1	0.93	0.000	0	0.61	0.077	0
GNMT	0.97	0.002	0	0.01	0.982	0	-0.41	0.107	0	-0.67	0.471	0	-0.06	0.878	0	-1.87	0.023	-1
SLC1A3	0.54	0.192	0	0.85	0.057	0	0.12	0.783	0	-0.62	0.013	0	0.05	0.842	0	-1.11	0.001	-1
GFI1	0.15	0.884	0	-0.20	0.841	0	-0.14	0.493	0	-0.07	0.872	0	-0.05	0.821	0	1.30	0.000	1
SAMD5	0.80	0.051	0	0.27	0.636	0	0.07	0.843	0	-0.35	0.349	0	0.41	0.024	0	-2.24	0.000	-1
AMY1B	-0.21	0.762	0	0.41	0.511	0	-1.00	0.003	-1	0.15	0.788	0	-0.93	0.000	0	-1.63	0.000	-1
AMY1A	-0.21	0.762	0	0.41	0.511	0	-1.00	0.003	-1	0.15	0.788	0	-0.93	0.000	0	-1.63	0.000	-1
PPP1R3B	0.64	0.100	0	0.36	0.462	0	1.15	0.046	1	-0.10	0.898	0	0.17	0.191	0	-0.65	0.187	0
C5AR1	-0.30	0.230	0	-0.35	0.193	0	1.29	0.037	1	0.43	0.483	0	-0.27	0.526	0	0.96	0.019	0
EPHB2	0.67	0.066	0	0.29	0.538	0	1.02	0.003	1	0.83	0.004	0	0.65	0.001	0	0.72	0.000	0
DBP	-0.73	0.020	0	0.05	0.924	0	-0.66	0.072	0	1.25	0.008	1	-0.58	0.010	0	0.86	0.006	0
CSTA	0.52	0.404	0	-0.81	0.193	0	5.05	0.002	1	3.03	0.003	1	5.17	0.000	1	5.60	0.000	1
TPSB2	-0.23	0.719	0	-0.36	0.555	0	0.96	0.023	0	1.82	0.046	1	0.81	0.001	0	0.79	0.001	0
TPSD1	-0.23	0.719	0	-0.36	0.555	0	0.96	0.023	0	1.82	0.046	1	0.81	0.001	0	0.79	0.001	0
NEO1	-0.04	0.924	0	0.04	0.934	0	-0.59	0.022	0	-0.28	0.428	0	-0.31	0.069	0	-1.17	0.000	-1
XCL2	-1.52	0.000	-1	-0.06	0.930	0	-0.24	0.232	0	-0.07	0.925	0	-0.15	0.865	0	0.60	0.082	0
XCL1	-1.52	0.000	-1	-0.06	0.930	0	-0.24	0.232	0	-0.07	0.925	0	-0.15	0.865	0	0.60	0.082	0
PIK3CG	0.19	0.528	0	0.05	0.911	0	0.63	0.017	0	0.48	0.191	0	0.41	0.028	0	1.01	0.003	1
PLAC8	-0.21	0.732	0	0.05	0.944	0	1.58	0.008	1	0.41	0.311	0	2.54	0.000	1	1.14	0.032	1
LRRN4CL	0.31	0.376	0	1.10	0.004	1	-0.69	0.154	0	0.13	0.810	0	-0.22	0.487	0	-0.67	0.060	0
PCLO	-0.10	0.831	0	0.29	0.457	0	0.18	0.568	0	0.01	0.984	0	-0.13	0.443	0	-1.27	0.000	-1
PLEKHA5	-0.10	0.768	0	0.14	0.654	0	-0.53	0.007	0	-0.12	0.637	0	-0.43	0.005	0	-1.03	0.000	-1
HIF1A	0.44	0.339	0	0.12	0.676	0	0.71	0.012	0	0.63	0.203	0	0.82	0.001	0	1.03	0.005	1
DENND1C	-0.05	0.926	0	0.03	0.969	0	0.53	0.109	0	0.10	0.871	0	-0.05	0.783	0	1.11	0.002	1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

TSPAN12	0.06	0.900	0	0.48	0.151	0	-0.27	0.123	0	0.57	0.116	0	-0.28	0.278	0	-1.23	0.000	-1
TAPBP	-0.30	0.362	0	-0.12	0.793	0	-0.11	0.514	0	0.07	0.798	0	1.10	0.000	1	0.84	0.000	0
TREX1	0.11	0.872	0	-0.01	0.992	0	0.37	0.160	0	-0.01	0.983	0	1.09	0.002	1	1.39	0.000	1
PRSS53	0.93	0.043	0	0.21	0.761	0	0.44	0.047	0	-1.30	0.046	-1	0.16	0.507	0	1.16	0.103	0
GPR65	0.28	0.669	0	-0.15	0.849	0	1.75	0.015	1	1.58	0.017	1	1.55	0.000	1	3.67	0.000	1
CCL28	1.07	0.006	1	0.06	0.930	0	0.11	0.793	0	0.19	0.689	0	-0.35	0.110	0	0.12	0.765	0
CLRN3	0.00	0.993	0	-0.08	0.809	0	-0.01	0.974	0	-0.01	0.984	0	-0.14	0.520	0	1.23	0.001	1
TNNI2	-0.13	0.662	0	0.23	0.398	0	-1.01	0.005	-1	1.42	0.366	0	-0.90	0.002	0	-0.36	0.004	0
RAC2	0.29	0.496	0	0.19	0.702	0	1.53	0.004	1	0.71	0.172	0	0.59	0.011	0	2.18	0.000	1
CXCL6	0.22	0.728	0	0.08	0.926	0	4.35	0.008	1	0.68	0.563	0	1.64	0.001	1	4.58	0.000	1
KRT33A	1.84	0.154	0	0.64	0.718	0	-0.12	0.912	0	-4.05	0.025	-1	1.24	0.001	1	-3.28	0.006	-1
KRT33B	1.84	0.154	0	0.64	0.718	0	-0.12	0.912	0	-4.05	0.025	-1	1.24	0.001	1	-3.28	0.006	-1
KRT34	1.84	0.154	0	0.64	0.718	0	-0.12	0.912	0	-4.05	0.025	-1	1.24	0.001	1	-3.28	0.006	-1
ATP13A5	0.17	0.486	0	-0.80	0.002	0	0.21	0.615	0	2.01	0.003	1	-0.18	0.450	0	2.48	0.000	1
SPTSSB	2.27	0.002	1	-1.01	0.195	0	1.62	0.008	1	-2.25	0.049	-1	0.61	0.052	0	-1.63	0.045	-1
CORIN	-0.27	0.524	0	0.38	0.364	0	-0.65	0.011	0	0.04	0.954	0	-0.83	0.000	0	-1.48	0.036	-1
CD247	0.31	0.236	0	0.04	0.925	0	0.03	0.898	0	-0.05	0.927	0	-0.09	0.574	0	1.12	0.000	1
GBP6	-0.39	0.693	0	0.27	0.806	0	0.35	0.513	0	0.13	0.844	0	1.65	0.000	1	2.19	0.001	1
COL6A3	0.18	0.597	0	0.00	0.998	0	0.83	0.003	0	1.72	0.002	1	1.18	0.000	1	-0.47	0.026	0
TNNI1	-0.24	0.730	0	0.15	0.851	0	-0.31	0.122	0	-0.09	0.916	0	-0.68	0.003	0	1.93	0.020	1
PRAM1	0.07	0.895	0	0.06	0.926	0	0.10	0.788	0	0.30	0.472	0	0.14	0.429	0	1.48	0.000	1
PZP	0.05	0.915	0	-0.20	0.590	0	-0.15	0.549	0	0.22	0.690	0	-0.15	0.398	0	1.65	0.007	1
REG1B	0.38	0.199	0	0.04	0.942	0	4.21	0.001	1	0.08	0.891	0	0.53	0.055	0	2.95	0.000	1
A4GNT	0.16	0.631	0	0.78	0.010	0	-1.27	0.005	-1	0.17	0.822	0	-0.18	0.349	0	-1.25	0.001	-1
BCL2A1	0.44	0.542	0	-0.17	0.858	0	1.15	0.009	1	0.16	0.710	0	1.03	0.001	1	0.81	0.000	0
ARHGAP4	-0.13	0.807	0	-0.32	0.467	0	0.53	0.160	0	-0.06	0.939	0	0.20	0.391	0	1.85	0.000	1
FA2H	0.43	0.048	0	0.00	0.995	0	-0.68	0.073	0	1.28	0.013	1	-0.83	0.004	0	-0.58	0.014	0
SLFN5	0.45	0.092	0	0.64	0.037	0	0.94	0.004	0	0.59	0.058	0	2.06	0.000	1	0.79	0.015	0
SLPI	0.33	0.498	0	-0.23	0.680	0	2.69	0.004	1	0.65	0.307	0	1.31	0.001	1	3.80	0.000	1
SRGN	0.29	0.364	0	0.17	0.662	0	1.77	0.005	1	0.37	0.291	0	2.86	0.000	1	0.79	0.001	0
PINLYP	1.90	0.030	1	0.50	0.684	0	0.98	0.014	0	-1.50	0.146	0	1.49	0.000	1	0.30	0.769	0
P2RY14	-0.31	0.230	0	-0.13	0.694	0	0.49	0.047	0	0.47	0.380	0	0.30	0.072	0	1.36	0.001	1

MARCO	-0.45	0.067	0	-0.23	0.466	0	-0.32	0.373	0	-0.04	0.950	0	-0.10	0.582	0	5.24	0.000	1
HLF	-0.64	0.003	0	-0.18	0.499	0	-1.06	0.008	-1	-0.23	0.529	0	-1.10	0.001	-1	-1.31	0.000	-1
DHX58	-0.12	0.782	0	-0.05	0.927	0	0.64	0.035	0	0.23	0.527	0	1.09	0.001	1	1.50	0.003	1
CTTNBP2	-0.28	0.477	0	0.08	0.896	0	-1.11	0.001	-1	-1.04	0.004	-1	-0.70	0.001	0	-1.40	0.000	-1
HCLS1	-0.03	0.956	0	0.01	0.988	0	1.08	0.022	1	0.29	0.558	0	0.48	0.012	0	2.47	0.000	1
MNDA	-0.16	0.810	0	0.17	0.791	0	0.91	0.020	0	-0.53	0.644	0	1.80	0.000	1	0.56	0.120	0
CORO2A	-0.81	0.002	0	-0.90	0.003	0	0.24	0.287	0	0.19	0.662	0	-0.14	0.489	0	1.26	0.000	1
PILRB	-0.11	0.927	0	0.04	0.980	0	1.11	0.103	0	0.18	0.852	0	0.27	0.374	0	2.06	0.000	1
CD82	-0.24	0.336	0	0.04	0.921	0	-0.42	0.033	0	-1.09	0.003	-1	-0.90	0.000	0	-0.84	0.000	0
CD4	-0.17	0.665	0	0.00	0.999	0	1.20	0.081	0	-0.30	0.658	0	0.24	0.259	0	1.77	0.000	1
MYCL	-0.70	0.069	0	-0.54	0.230	0	-0.87	0.007	0	-0.48	0.079	0	-0.56	0.012	0	-1.77	0.000	-1
CWH43	0.72	0.019	0	-0.03	0.953	0	1.03	0.000	1	0.45	0.143	0	0.75	0.000	0	0.63	0.003	0
RND1	0.71	0.040	0	0.13	0.815	0	0.84	0.123	0	-0.09	0.878	0	1.14	0.003	1	2.06	0.000	1
ERAP1	0.04	0.915	0	0.15	0.620	0	0.17	0.327	0	0.26	0.250	0	0.98	0.000	0	1.15	0.000	1
NDNF	0.06	0.900	0	0.14	0.738	0	1.09	0.013	1	-0.13	0.822	0	0.30	0.177	0	-0.95	0.002	0
PDK2	-0.37	0.360	0	0.29	0.530	0	-0.81	0.025	0	-0.53	0.087	0	-1.02	0.000	-1	-1.12	0.001	-1
IDO1	-0.21	0.556	0	-0.50	0.131	0	0.13	0.614	0	0.30	0.479	0	0.32	0.331	0	1.01	0.001	1
TMEM97	0.54	0.010	0	-0.07	0.835	0	0.24	0.130	0	1.16	0.003	1	-0.39	0.075	0	0.47	0.032	0
APRT	-0.09	0.824	0	-0.32	0.318	0	0.47	0.037	0	0.31	0.266	0	0.09	0.634	0	1.12	0.000	1
CYP2F1	-0.70	0.017	0	0.38	0.266	0	-0.41	0.268	0	0.09	0.936	0	-1.27	0.000	-1	-1.28	0.000	-1
EHF	0.91	0.004	0	-0.41	0.272	0	0.83	0.001	0	1.28	0.014	1	0.93	0.000	0	2.70	0.000	1
NFKBIE	0.33	0.419	0	0.08	0.894	0	0.65	0.057	0	0.30	0.261	0	0.92	0.002	0	1.56	0.000	1
KLRK1	0.09	0.864	0	0.19	0.693	0	-0.26	0.469	0	0.91	0.063	0	0.78	0.005	0	2.11	0.000	1
KLRK1	0.09	0.864	0	0.19	0.693	0	-0.26	0.469	0	0.91	0.063	0	0.78	0.005	0	2.11	0.000	1
CHD2	-0.19	0.711	0	0.03	0.964	0	-0.23	0.099	0	-0.13	0.544	0	-0.28	0.017	0	-1.05	0.000	-1
KRTAP12-1	0.77	0.361	0	0.42	0.685	0	-0.66	0.108	0	-1.30	0.058	0	2.41	0.003	1	-2.77	0.007	-1
KRTAP12-2	0.77	0.361	0	0.42	0.685	0	-0.66	0.108	0	-1.30	0.058	0	2.41	0.003	1	-2.77	0.007	-1
KRTAP12-3	0.77	0.361	0	0.42	0.685	0	-0.66	0.108	0	-1.30	0.058	0	2.41	0.003	1	-2.77	0.007	-1
C4orf3	0.12	0.685	0	-0.01	0.975	0	0.12	0.553	0	0.46	0.092	0	1.11	0.000	1	1.44	0.000	1
TRPM2	0.15	0.676	0	0.02	0.968	0	0.91	0.045	0	0.12	0.786	0	0.12	0.465	0	1.01	0.000	1
RASGRP2	-0.41	0.455	0	0.19	0.786	0	0.64	0.008	0	-0.44	0.553	0	0.09	0.665	0	1.37	0.000	1
BCL3	1.19	0.002	1	0.28	0.564	0	1.59	0.000	1	1.10	0.002	1	2.28	0.001	1	1.71	0.000	1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

CA12	0.91	0.030	0	0.25	0.668	0	1.19	0.000	1	1.43	0.003	1	1.31	0.000	1	1.04	0.000	1
LY75-CD30	0.02	0.979	0	-0.04	0.948	0	0.61	0.038	0	1.01	0.006	1	0.51	0.010	0	1.06	0.000	1
LY75	0.02	0.979	0	-0.04	0.948	0	0.61	0.038	0	1.01	0.006	1	0.51	0.010	0	1.06	0.000	1
SCN2B	-0.16	0.735	0	-0.12	0.816	0	-0.31	0.249	0	-0.23	0.573	0	0.00	0.985	0	-1.10	0.000	-1
LDHB	0.09	0.798	0	0.37	0.151	0	-0.40	0.094	0	0.20	0.414	0	-1.03	0.000	-1	-0.51	0.005	0
LGR6	-0.37	0.199	0	-0.12	0.778	0	-0.74	0.072	0	-0.95	0.038	0	-1.16	0.000	-1	-0.93	0.001	0
FBN2	0.37	0.347	0	-0.08	0.894	0	2.05	0.001	1	0.11	0.922	0	0.42	0.009	0	1.17	0.000	1
MC5R	-0.39	0.083	0	0.30	0.250	0	-1.09	0.008	-1	-0.17	0.543	0	-1.22	0.000	-1	-0.06	0.717	0
ANGPTL7	-0.36	0.269	0	0.15	0.718	0	-1.12	0.017	-1	-1.32	0.281	0	-0.69	0.022	0	-0.94	0.007	0
FAM3D	-0.12	0.853	0	-0.06	0.931	0	0.40	0.114	0	0.01	0.982	0	-0.03	0.894	0	2.54	0.000	1
FAM46C	0.13	0.802	0	0.14	0.774	0	0.39	0.425	0	0.11	0.873	0	0.31	0.027	0	1.23	0.000	1
MEX3B	0.31	0.329	0	0.28	0.426	0	0.44	0.182	0	0.41	0.221	0	0.01	0.983	0	-1.10	0.003	-1
OTUD7A	0.17	0.744	0	-0.10	0.859	0	0.36	0.155	0	0.14	0.774	0	0.07	0.814	0	2.07	0.000	1
FBXL7	0.24	0.381	0	0.27	0.345	0	0.15	0.533	0	0.02	0.954	0	0.15	0.575	0	-1.02	0.002	-1
NAIP	-0.20	0.618	0	-0.03	0.952	0	0.00	0.999	0	0.78	0.168	0	-0.04	0.921	0	1.02	0.025	1
KRTAP3-3	0.74	0.610	0	0.14	0.948	0	-0.15	0.605	0	-2.90	0.021	-1	0.07	0.885	0	-1.77	0.001	-1
KRTAP3-2	0.74	0.610	0	0.14	0.948	0	-0.15	0.605	0	-2.90	0.021	-1	0.07	0.885	0	-1.77	0.001	-1
NLRC5	-0.48	0.038	0	-0.29	0.283	0	-0.22	0.306	0	-0.28	0.176	0	1.84	0.000	1	0.45	0.028	0
ATP13A4	0.66	0.023	0	-0.27	0.476	0	1.06	0.008	1	0.36	0.494	0	1.18	0.000	1	2.56	0.000	1
FAM49A	0.54	0.157	0	0.59	0.162	0	0.04	0.902	0	-1.35	0.016	-1	0.60	0.023	0	-0.32	0.362	0
CHODL	0.40	0.389	0	0.50	0.295	0	1.04	0.037	1	0.26	0.790	0	-0.28	0.383	0	-0.47	0.087	0
TREM1	-0.04	0.936	0	-0.21	0.617	0	3.95	0.004	1	-0.10	0.873	0	1.50	0.022	1	2.86	0.000	1
CYP2D6	-0.27	0.383	0	0.14	0.720	0	-0.53	0.072	0	-0.71	0.009	0	-0.34	0.017	0	-1.19	0.000	-1
CCL19	0.77	0.029	0	0.64	0.111	0	0.21	0.370	0	0.36	0.531	0	0.88	0.013	0	1.53	0.000	1
CACNA2D4	0.34	0.321	0	-0.08	0.871	0	0.19	0.702	0	-0.06	0.913	0	-0.10	0.588	0	2.63	0.000	1
DSG1	0.01	0.983	0	-0.13	0.825	0	0.62	0.023	0	1.03	0.002	1	0.26	0.123	0	0.48	0.002	0
MICU1	-0.43	0.035	0	-0.11	0.697	0	-0.79	0.001	0	-0.98	0.000	0	-0.76	0.001	0	-1.48	0.000	-1
SH3D19	0.02	0.976	0	0.22	0.528	0	-0.35	0.056	0	-0.45	0.026	0	-0.43	0.007	0	-1.47	0.000	-1
CD14	0.31	0.622	0	-0.23	0.747	0	3.03	0.009	1	0.55	0.194	0	1.65	0.004	1	1.93	0.000	1
PRF1	-0.53	0.018	0	-0.10	0.771	0	-0.49	0.060	0	-0.45	0.629	0	0.11	0.464	0	1.64	0.000	1
DCLK1	0.54	0.067	0	0.55	0.102	0	1.14	0.004	1	0.83	0.036	0	0.30	0.089	0	-0.61	0.033	0
HCAR3	-0.21	0.566	0	-0.37	0.271	0	0.64	0.138	0	-0.15	0.503	0	1.04	0.000	1	1.02	0.000	1

ACCEPTED MANUSCRIPT

HCAR2	-0.21	0.566	0	-0.37	0.271	0	0.64	0.138	0	-0.15	0.503	0	1.04	0.000	1	1.02	0.000	1
NMRK2	0.11	0.906	0	0.37	0.607	0	0.31	0.377	0	-0.07	0.912	0	-1.05	0.000	-1	-0.64	0.276	0
KRT6B	1.36	0.163	0	-1.77	0.095	0	6.19	0.002	1	4.83	0.002	1	6.84	0.000	1	6.12	0.000	1
CSTA	3.89	0.000	1	-1.26	0.108	0	4.92	0.000	1	4.76	0.000	1	4.08	0.000	1	2.38	0.000	1
HSD17B7	0.46	0.109	0	0.13	0.751	0	-0.23	0.258	0	1.18	0.002	1	-0.62	0.003	0	0.43	0.016	0
BMP2	-0.47	0.112	0	-0.27	0.457	0	-0.51	0.104	0	-0.96	0.011	0	-0.41	0.047	0	-1.52	0.000	-1
GAL3ST1	-0.39	0.324	0	-0.26	0.568	0	-0.63	0.095	0	-1.03	0.014	-1	-0.75	0.000	0	-1.00	0.000	0
PANK1	0.36	0.093	0	0.10	0.760	0	-0.31	0.159	0	1.05	0.008	1	-1.05	0.000	-1	-0.66	0.002	0
TLR4	0.26	0.358	0	0.41	0.149	0	0.47	0.233	0	0.68	0.374	0	0.72	0.001	0	1.04	0.010	1
ARHGAP20	0.64	0.038	0	0.81	0.025	0	-0.64	0.091	0	-0.43	0.343	0	-0.24	0.244	0	-2.71	0.000	-1
YPEL4	-0.27	0.472	0	0.18	0.677	0	-0.86	0.002	0	-0.02	0.972	0	-0.15	0.493	0	-1.37	0.000	-1
CES4A	0.83	0.003	0	0.45	0.139	0	-0.47	0.045	0	1.30	0.013	1	-0.84	0.000	0	0.40	0.205	0
C9orf16	0.47	0.259	0	0.03	0.973	0	0.63	0.003	0	0.41	0.176	0	0.50	0.001	0	1.26	0.000	1
MCOLN2	-0.09	0.725	0	-0.09	0.734	0	0.96	0.009	0	1.09	0.127	0	1.39	0.000	1	1.76	0.000	1
FAM26E	0.72	0.024	0	0.97	0.011	0	-0.19	0.300	0	-0.13	0.764	0	0.51	0.014	0	-1.44	0.001	-1
HOXC13	0.95	0.118	0	0.23	0.800	0	-0.28	0.503	0	-1.24	0.016	-1	0.91	0.003	0	-2.32	0.001	-1
PPP1R27	0.40	0.357	0	1.01	0.023	1	0.23	0.602	0	0.47	0.353	0	-0.24	0.220	0	-1.93	0.000	-1
SLC35F2	0.33	0.183	0	-0.48	0.075	0	0.33	0.145	0	0.78	0.007	0	0.41	0.005	0	1.36	0.000	1
TNFRSF11A	-0.49	0.012	0	-0.19	0.430	0	-0.14	0.375	0	0.36	0.333	0	-0.11	0.367	0	1.26	0.000	1
FABP6	-0.38	0.415	0	-0.39	0.426	0	-0.51	0.325	0	0.50	0.484	0	-0.14	0.655	0	1.34	0.000	1
IL13RA1	0.06	0.895	0	0.00	0.996	0	0.27	0.137	0	0.25	0.198	0	0.70	0.000	0	1.53	0.000	1
SLC16A3	0.20	0.699	0	-0.15	0.794	0	1.61	0.034	1	0.42	0.453	0	0.43	0.013	0	1.11	0.000	1
TNFRSF9	-0.26	0.643	0	-0.56	0.261	0	1.60	0.002	1	0.76	0.046	0	0.24	0.237	0	2.11	0.000	1
GBP6	0.16	0.922	0	1.42	0.195	0	0.49	0.280	0	0.62	0.254	0	4.09	0.000	1	0.13	0.361	0
NFIB	0.05	0.913	0	0.23	0.536	0	-0.27	0.088	0	0.03	0.925	0	-0.48	0.013	0	-1.46	0.000	-1
SERPINB9	0.15	0.750	0	0.32	0.433	0	0.79	0.101	0	0.82	0.083	0	0.08	0.780	0	1.53	0.000	1
PTPN22	-0.06	0.927	0	0.12	0.828	0	0.25	0.331	0	0.93	0.033	0	0.44	0.005	0	1.62	0.000	1
TTC39A	-0.30	0.178	0	-0.37	0.126	0	0.20	0.404	0	0.21	0.529	0	-0.08	0.616	0	1.27	0.000	1
FITM1	-0.16	0.728	0	0.28	0.490	0	-1.07	0.004	-1	0.93	0.562	0	-0.88	0.003	0	-0.39	0.209	0
SH2D5	0.01	0.988	0	-0.33	0.180	0	0.84	0.003	0	0.27	0.398	0	0.07	0.746	0	2.25	0.000	1
PYGM	-0.16	0.726	0	0.20	0.667	0	-1.24	0.005	-1	1.68	0.278	0	-0.95	0.030	0	-1.14	0.001	-1
APCDD1	-0.42	0.213	0	-0.15	0.749	0	-0.20	0.457	0	-0.43	0.052	0	0.10	0.674	0	-2.88	0.000	-1

CARNS1	-0.96	0.032	0	-0.35	0.551	0	-0.30	0.165	0	-1.57	0.015	-1	-0.47	0.006	0	-2.64	0.000	-1
STEAP1	0.61	0.038	0	0.14	0.750	0	0.72	0.099	0	-0.57	0.062	0	0.54	0.018	0	2.66	0.001	1
C1orf158	0.71	0.264	0	-0.21	0.814	0	-0.11	0.792	0	1.23	0.028	1	-0.11	0.513	0	0.26	0.036	0
SIRPG	0.69	0.080	0	0.26	0.619	0	2.29	0.009	1	0.17	0.804	0	1.22	0.000	1	3.65	0.000	1
SIRPB1	0.69	0.080	0	0.26	0.619	0	2.29	0.009	1	0.17	0.804	0	1.22	0.000	1	3.65	0.000	1
SLC25A53	-0.15	0.690	0	-0.06	0.894	0	0.05	0.846	0	-0.07	0.877	0	0.02	0.945	0	1.53	0.000	1
CD180	-0.14	0.753	0	0.59	0.091	0	0.46	0.128	0	0.36	0.302	0	-0.20	0.372	0	1.63	0.001	1
ACSBG1	-0.81	0.000	0	-0.27	0.264	0	-0.60	0.035	0	-0.17	0.533	0	-0.52	0.001	0	-1.05	0.000	-1
CTSC	0.72	0.006	0	0.41	0.179	0	1.10	0.008	1	0.22	0.608	0	1.90	0.000	1	0.29	0.068	0
C1QTNF3	0.40	0.134	0	0.75	0.016	0	1.05	0.004	1	1.65	0.077	0	0.88	0.015	0	-0.29	0.578	0
C1QTNF3-A	0.40	0.134	0	0.75	0.016	0	1.05	0.004	1	1.65	0.077	0	0.88	0.015	0	-0.29	0.578	0
PPP2R2C	0.11	0.760	0	0.00	0.998	0	0.14	0.607	0	0.14	0.630	0	-0.13	0.665	0	-1.13	0.000	-1
DDX60	0.07	0.932	0	0.40	0.512	0	0.92	0.034	0	0.57	0.264	0	1.99	0.000	1	0.64	0.245	0
GSDMD	0.08	0.858	0	0.23	0.540	0	0.56	0.052	0	0.43	0.497	0	0.85	0.000	0	1.43	0.000	1
FPR1	0.14	0.705	0	-0.05	0.910	0	2.91	0.027	1	0.07	0.835	0	0.69	0.027	0	5.12	0.000	1
GAPDHS	0.01	0.988	0	-0.28	0.574	0	0.04	0.931	0	0.37	0.414	0	-0.37	0.012	0	1.04	0.000	1
LEF1	1.13	0.026	1	0.47	0.471	0	-0.05	0.908	0	-1.39	0.056	0	0.71	0.004	0	-1.42	0.004	-1
PTK6	-0.13	0.628	0	-0.54	0.023	0	0.19	0.463	0	0.45	0.075	0	0.34	0.052	0	1.73	0.000	1
KIAA0408	-0.37	0.484	0	0.30	0.611	0	-0.98	0.011	0	-0.23	0.746	0	-0.71	0.000	0	-1.55	0.000	-1
MOGAT1	0.21	0.611	0	0.39	0.295	0	-0.34	0.300	0	0.07	0.927	0	-0.39	0.018	0	-1.11	0.000	-1
GPR35	0.09	0.884	0	-0.12	0.846	0	1.31	0.009	1	0.37	0.332	0	0.56	0.008	0	2.03	0.000	1
TNN	0.41	0.434	0	-0.14	0.844	0	2.42	0.001	1	2.12	0.009	1	0.64	0.021	0	0.66	0.013	0
TMEM35	-0.42	0.124	0	0.18	0.625	0	-0.77	0.021	0	-0.91	0.005	0	-0.81	0.000	0	-2.22	0.000	-1
APOL4	0.09	0.924	0	0.05	0.962	0	-0.05	0.947	0	0.43	0.542	0	0.25	0.628	0	1.31	0.000	1
APOL2	0.09	0.924	0	0.05	0.962	0	-0.05	0.947	0	0.43	0.542	0	0.25	0.628	0	1.31	0.000	1
PLEKHO2	0.14	0.761	0	0.11	0.832	0	0.75	0.026	0	0.26	0.506	0	0.68	0.005	0	1.22	0.000	1
HSPB1	-0.51	0.146	0	-0.07	0.903	0	-0.66	0.031	0	-1.16	0.001	-1	-0.86	0.000	0	-1.28	0.000	-1
DAPL1	-0.44	0.128	0	-0.21	0.579	0	-0.88	0.022	0	-1.04	0.003	-1	-1.71	0.001	-1	-1.25	0.000	-1
UCHL1	-0.01	0.991	0	0.00	0.998	0	0.08	0.723	0	0.22	0.629	0	-0.44	0.008	0	1.31	0.000	1
RDH16	0.70	0.001	0	-0.01	0.988	0	-0.23	0.343	0	1.12	0.002	1	-0.61	0.001	0	0.28	0.224	0
MS4A8	0.04	0.940	0	0.00	0.998	0	1.19	0.023	1	0.43	0.247	0	0.26	0.119	0	0.65	0.311	0
MCEMP1	0.27	0.419	0	0.16	0.694	0	1.64	0.055	0	0.25	0.597	0	0.92	0.002	0	3.41	0.000	1

ACCEPTED MANUSCRIPT

CPA3	-0.19	0.788	0	0.22	0.750	0	0.80	0.001	0	2.65	0.026	1	1.29	0.001	1	0.67	0.008	0
SIRPG	-0.11	0.735	0	-0.04	0.920	0	0.57	0.025	0	0.00	0.992	0	0.22	0.218	0	1.38	0.000	1
SIRPB1	-0.11	0.735	0	-0.04	0.920	0	0.57	0.025	0	0.00	0.992	0	0.22	0.218	0	1.38	0.000	1
CFAP57	-0.15	0.642	0	-0.02	0.970	0	-0.27	0.247	0	0.58	0.120	0	-1.84	0.000	-1	-3.48	0.000	-1
DIRAS2	0.31	0.460	0	0.48	0.248	0	-0.50	0.131	0	0.03	0.973	0	-0.16	0.339	0	-1.18	0.001	-1
THEMIS2	-0.37	0.320	0	0.07	0.907	0	1.14	0.085	0	0.01	0.987	0	1.41	0.000	1	1.31	0.006	1
IL10	-0.18	0.671	0	-0.22	0.591	0	0.47	0.069	0	-0.28	0.364	0	1.87	0.000	1	1.77	0.001	1
BST1	0.13	0.674	0	-0.19	0.529	0	1.12	0.078	0	0.71	0.089	0	0.42	0.074	0	2.04	0.001	1
HSPA2	-0.11	0.723	0	-0.15	0.610	0	-0.55	0.011	0	-0.78	0.039	0	0.00	0.988	0	-1.28	0.000	-1
EP400	0.49	0.456	0	0.26	0.750	0	-0.84	0.002	0	-1.24	0.007	-1	-0.07	0.655	0	-0.84	0.001	0
ABCG2	0.33	0.534	0	0.47	0.370	0	0.57	0.163	0	0.03	0.951	0	0.18	0.139	0	1.10	0.028	1
PSRC1	0.43	0.180	0	-0.23	0.561	0	0.65	0.011	0	0.72	0.021	0	0.47	0.002	0	1.11	0.000	1
ENPEP	-0.06	0.914	0	0.26	0.495	0	-0.34	0.142	0	0.41	0.371	0	-0.36	0.042	0	-2.64	0.000	-1
LYVE1	0.01	0.994	0	0.60	0.237	0	1.08	0.017	1	1.44	0.093	0	-0.36	0.164	0	-1.47	0.009	-1
SCRG1	0.56	0.049	0	0.31	0.384	0	0.91	0.046	0	1.05	0.175	0	1.21	0.000	1	-0.71	0.213	0
BHLHE41	-0.83	0.004	0	0.04	0.936	0	-0.95	0.008	0	0.08	0.885	0	-1.70	0.000	-1	-0.55	0.006	0
DCT	1.02	0.004	1	0.10	0.859	0	-0.01	0.983	0	-0.31	0.698	0	-0.75	0.039	0	-2.90	0.000	-1
PALLD	0.80	0.002	0	0.21	0.485	0	0.53	0.071	0	-0.34	0.482	0	0.48	0.005	0	-1.01	0.000	-1
PHYHIP	-0.53	0.234	0	-0.14	0.828	0	-0.92	0.035	0	-0.90	0.004	0	-1.23	0.000	-1	-1.27	0.000	-1
MS4A2	-0.21	0.600	0	0.05	0.933	0	0.20	0.408	0	2.31	0.003	1	0.26	0.431	0	0.77	0.016	0
GJB6	1.20	0.030	1	0.37	0.623	0	2.34	0.001	1	-0.78	0.121	0	1.82	0.000	1	2.52	0.005	1
ERCC6L	0.21	0.610	0	-0.04	0.939	0	0.48	0.114	0	1.27	0.040	1	0.31	0.186	0	1.06	0.000	1
CDH4	-0.66	0.009	0	-0.27	0.387	0	-0.37	0.380	0	-0.92	0.004	0	-0.08	0.613	0	-1.19	0.001	-1
HCAR1	0.47	0.208	0	0.40	0.334	0	-0.01	0.991	0	-0.30	0.635	0	0.05	0.864	0	-1.37	0.000	-1
CXCL16	0.22	0.351	0	0.14	0.613	0	0.27	0.273	0	0.36	0.067	0	0.72	0.001	0	1.80	0.000	1
SESN3	0.11	0.767	0	0.33	0.261	0	-0.31	0.083	0	-0.18	0.654	0	-0.06	0.764	0	-1.05	0.000	-1
ELL3	-0.78	0.000	0	-0.31	0.180	0	-0.77	0.022	0	-0.39	0.098	0	-1.03	0.000	-1	-1.35	0.000	-1
MPRIP	-0.30	0.062	0	-0.16	0.411	0	-0.21	0.146	0	-0.29	0.100	0	-0.25	0.057	0	-1.28	0.000	-1
GPD1	0.14	0.857	0	0.41	0.504	0	-0.56	0.014	0	1.03	0.004	1	-0.30	0.160	0	-0.99	0.000	0
GPR176	0.13	0.819	0	-0.27	0.560	0	1.10	0.010	1	0.71	0.125	0	0.38	0.027	0	1.89	0.000	1
C3AR1	-0.06	0.898	0	-0.03	0.959	0	1.09	0.005	1	1.13	0.117	0	0.94	0.001	0	2.06	0.000	1
SLC10A6	0.02	0.969	0	-0.40	0.135	0	1.01	0.007	1	0.85	0.027	0	1.45	0.000	1	1.31	0.000	1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

KIAA1147	0.15	0.599	0	-0.21	0.472	0	-0.15	0.348	0	0.19	0.316	0	-1.22	0.026	-1	0.57	0.001	0
APLNR	-0.01	0.993	0	0.24	0.668	0	1.29	0.011	1	-0.09	0.883	0	0.47	0.024	0	-0.61	0.032	0
WNT5A	0.40	0.181	0	0.32	0.353	0	0.67	0.031	0	-0.52	0.224	0	0.75	0.001	0	-1.82	0.001	-1
SLC1A1	0.04	0.948	0	-0.26	0.528	0	0.56	0.022	0	-0.35	0.565	0	1.08	0.001	1	1.98	0.000	1
PKP2	0.06	0.895	0	0.28	0.357	0	-0.34	0.238	0	0.26	0.515	0	-0.08	0.791	0	-1.37	0.000	-1
PTN	0.28	0.392	0	0.35	0.284	0	0.00	0.986	0	-0.10	0.873	0	-0.41	0.017	0	-1.18	0.000	-1
SUSD1	0.29	0.358	0	0.09	0.846	0	1.07	0.021	1	0.40	0.312	0	0.11	0.494	0	0.06	0.781	0
IGFBP4	0.26	0.599	0	-0.25	0.634	0	0.74	0.045	0	0.36	0.100	0	1.00	0.000	0	-1.65	0.000	-1
PVRL1	-0.18	0.672	0	-0.57	0.104	0	0.07	0.713	0	-0.20	0.519	0	0.30	0.014	0	1.04	0.000	1
RPL3L	-0.08	0.844	0	0.33	0.290	0	-1.17	0.001	-1	0.51	0.491	0	-1.28	0.000	-1	-1.13	0.004	-1
CFLAR	0.06	0.900	0	0.26	0.443	0	0.23	0.221	0	0.08	0.786	0	0.51	0.004	0	2.26	0.000	1
DACH1	-0.04	0.927	0	0.09	0.810	0	0.02	0.948	0	-0.71	0.045	0	-0.05	0.829	0	-1.26	0.000	-1
MSR1	0.08	0.888	0	-0.25	0.544	0	1.82	0.020	1	0.77	0.456	0	1.75	0.000	1	2.90	0.000	1
HPGDS	-0.06	0.914	0	0.46	0.261	0	0.36	0.066	0	-0.92	0.009	0	1.38	0.000	1	0.30	0.328	0
NAV3	0.38	0.205	0	0.13	0.754	0	0.32	0.096	0	1.59	0.001	1	0.40	0.035	0	1.74	0.000	1
CTSS	-0.17	0.592	0	-0.12	0.748	0	0.77	0.022	0	1.33	0.015	1	1.04	0.000	1	0.54	0.013	0
ADCY1	-0.36	0.398	0	-0.14	0.806	0	-0.53	0.092	0	-0.66	0.253	0	-0.12	0.389	0	-1.48	0.000	-1
CFD	0.42	0.401	0	0.61	0.220	0	-0.29	0.562	0	0.87	0.384	0	-0.41	0.443	0	-1.07	0.000	-1
SCN4B	-0.07	0.935	0	0.06	0.951	0	-0.48	0.200	0	-0.27	0.749	0	-0.45	0.044	0	-1.19	0.001	-1
SPIC	0.21	0.544	0	0.16	0.684	0	0.95	0.135	0	0.19	0.721	0	0.34	0.075	0	2.90	0.000	1
KCNA2	-0.67	0.024	0	-0.02	0.970	0	-0.28	0.269	0	-0.51	0.263	0	-0.33	0.051	0	-1.47	0.000	-1
RNASEL	0.16	0.633	0	0.07	0.862	0	0.85	0.014	0	0.87	0.010	0	2.24	0.000	1	0.61	0.116	0
SLC23A1	-0.14	0.714	0	-0.02	0.975	0	0.18	0.348	0	-1.43	0.003	-1	-0.11	0.557	0	-0.37	0.008	0
SCNN1G	-0.44	0.087	0	-0.30	0.318	0	0.02	0.936	0	0.21	0.475	0	1.56	0.000	1	-0.25	0.237	0
ADAMTSL5	-0.49	0.031	0	0.05	0.892	0	-0.49	0.094	0	-0.54	0.079	0	-0.34	0.027	0	-1.05	0.000	-1
TMOD4	-0.47	0.078	0	0.16	0.651	0	-0.82	0.014	0	-1.44	0.002	-1	-1.30	0.000	-1	-0.59	0.078	0
TMPRSS11	0.76	0.033	0	0.00	0.997	0	2.94	0.003	1	0.79	0.184	0	0.64	0.006	0	0.52	0.001	0
BCL7A	-0.20	0.441	0	-0.28	0.294	0	-0.47	0.008	0	-0.42	0.120	0	-0.18	0.210	0	-1.24	0.000	-1
ARHGAP15	0.33	0.234	0	0.05	0.906	0	0.80	0.035	0	0.83	0.074	0	0.64	0.017	0	1.22	0.002	1
FMOD	-0.29	0.346	0	0.22	0.519	0	-0.74	0.052	0	-0.26	0.467	0	-0.80	0.009	0	-2.02	0.000	-1
PLIN4	-0.33	0.452	0	0.10	0.870	0	-0.94	0.012	0	0.88	0.075	0	-0.83	0.006	0	-1.51	0.000	-1
CYP2A13	-0.26	0.626	0	-0.22	0.704	0	-0.21	0.627	0	-0.30	0.550	0	-0.22	0.220	0	1.73	0.000	1

ACCEPTED MANUSCRIPT

CYP2A6	-0.26	0.626	0	-0.22	0.704	0	-0.21	0.627	0	-0.30	0.550	0	-0.22	0.220	0	1.73	0.000	1
SLC22A4	-0.85	0.001	0	-0.11	0.767	0	-0.72	0.019	0	-0.33	0.227	0	-1.20	0.000	-1	-1.27	0.001	-1
P4HA3	0.23	0.672	0	0.09	0.899	0	1.90	0.019	1	0.85	0.089	0	0.36	0.056	0	0.61	0.113	0
SLC5A9	0.31	0.268	0	-0.32	0.284	0	-0.01	0.969	0	0.95	0.005	0	0.48	0.010	0	2.76	0.000	1
ADRB3	0.01	0.981	0	0.20	0.648	0	-0.20	0.344	0	-0.54	0.237	0	0.08	0.679	0	-2.00	0.000	-1
MNDA	0.38	0.506	0	-0.01	0.994	0	1.37	0.003	1	0.97	0.302	0	2.75	0.000	1	0.81	0.050	0
PAX3	0.12	0.818	0	0.22	0.653	0	-0.40	0.069	0	0.39	0.512	0	-0.20	0.125	0	-1.46	0.000	-1
ECSCR	0.24	0.295	0	0.49	0.042	0	0.88	0.019	0	0.18	0.730	0	1.07	0.000	1	0.87	0.000	0
ECSCR	0.24	0.295	0	0.49	0.042	0	0.88	0.019	0	0.18	0.730	0	1.07	0.000	1	0.87	0.000	0
ITK	0.42	0.090	0	0.06	0.880	0	0.34	0.098	0	0.54	0.240	0	0.30	0.065	0	1.73	0.000	1
KCNAB2	0.19	0.580	0	0.11	0.799	0	0.50	0.040	0	0.53	0.237	0	0.05	0.800	0	1.29	0.001	1
SOX11	0.08	0.893	0	0.06	0.921	0	0.17	0.493	0	0.21	0.774	0	-0.04	0.851	0	1.79	0.001	1
KNCE1	1.01	0.279	0	0.61	0.589	0	0.17	0.601	0	-2.19	0.041	-1	0.11	0.522	0	-2.19	0.014	-1
KCNE1	1.01	0.279	0	0.61	0.589	0	0.17	0.601	0	-2.19	0.041	-1	0.11	0.522	0	-2.19	0.014	-1
KCNK16	0.86	0.196	0	0.25	0.791	0	-0.21	0.385	0	-1.13	0.052	0	0.11	0.503	0	-1.53	0.050	-1
CCDC3	0.20	0.636	0	0.50	0.167	0	-0.69	0.085	0	-0.36	0.376	0	-1.04	0.000	-1	-1.33	0.001	-1
LRRC17	0.41	0.209	0	0.79	0.025	0	1.21	0.001	1	1.94	0.007	1	0.14	0.674	0	0.29	0.470	0
CCR2	0.27	0.608	0	0.27	0.625	0	1.36	0.053	0	1.32	0.034	1	3.18	0.000	1	2.75	0.000	1
HACL1	1.95	0.000	1	-0.27	0.407	0	0.12	0.759	0	0.56	0.128	0	-0.77	0.001	0	-0.06	0.741	0
PTPN21	-0.50	0.014	0	-0.06	0.847	0	-0.77	0.005	0	-0.65	0.006	0	-0.81	0.001	0	-1.90	0.000	-1
FAM105A	-0.36	0.377	0	-0.02	0.972	0	0.47	0.072	0	0.48	0.173	0	0.19	0.370	0	1.06	0.000	1
HUNK	0.76	0.029	0	0.35	0.424	0	0.22	0.499	0	-0.83	0.192	0	0.03	0.903	0	-1.29	0.019	-1
STAT1	0.15	0.803	0	0.49	0.295	0	0.74	0.004	0	0.82	0.012	0	2.47	0.000	1	1.82	0.000	1
WNK4	-1.05	0.001	-1	-0.53	0.117	0	-0.93	0.019	0	-0.64	0.051	0	-0.32	0.050	0	-1.66	0.000	-1
ING5	-0.08	0.851	0	-0.10	0.819	0	-0.25	0.133	0	0.04	0.884	0	0.22	0.164	0	1.02	0.000	1
CPXM1	0.37	0.369	0	-0.07	0.920	0	1.98	0.004	1	0.35	0.540	0	1.59	0.000	1	1.72	0.000	1
SCNN1B	0.31	0.490	0	-0.25	0.622	0	0.43	0.106	0	0.18	0.687	0	1.04	0.001	1	-0.53	0.079	0
ICAM1	0.20	0.659	0	0.26	0.546	0	0.51	0.049	0	0.16	0.674	0	1.28	0.010	1	0.91	0.000	0
C12orf56	-0.11	0.758	0	-0.05	0.905	0	-0.11	0.638	0	-1.16	0.008	-1	-0.05	0.830	0	0.04	0.783	0
IFITM2	0.04	0.924	0	-0.13	0.730	0	1.72	0.021	1	-0.04	0.956	0	0.99	0.002	0	2.32	0.000	1
CD200R1L	0.28	0.535	0	0.15	0.795	0	0.65	0.317	0	0.30	0.467	0	0.63	0.005	0	1.55	0.000	1
CD200R1	0.28	0.535	0	0.15	0.795	0	0.65	0.317	0	0.30	0.467	0	0.63	0.005	0	1.55	0.000	1

ACCEPTED MANUSCRIPT

KIAA0101	0.73	0.039	0	-0.04	0.951	0	0.93	0.031	0	1.04	0.018	1	0.61	0.001	0	0.68	0.035	0
CASP14	1.00	0.014	1	-0.08	0.916	0	1.96	0.000	1	0.76	0.165	0	1.84	0.000	1	0.92	0.001	0
RDH11	0.61	0.029	0	0.35	0.282	0	-0.31	0.095	0	1.33	0.001	1	-0.80	0.000	0	-0.65	0.001	0
ABHD14B	-0.88	0.005	0	-0.08	0.881	0	-0.73	0.019	0	-0.88	0.008	0	-0.97	0.003	0	-1.11	0.000	-1
ORM2	-0.26	0.425	0	-0.40	0.222	0	-0.62	0.114	0	-0.38	0.169	0	-1.14	0.000	-1	0.12	0.482	0
ORM1	-0.26	0.425	0	-0.40	0.222	0	-0.62	0.114	0	-0.38	0.169	0	-1.14	0.000	-1	0.12	0.482	0
HELLS	0.32	0.221	0	-0.21	0.508	0	0.40	0.129	0	1.17	0.023	1	0.31	0.062	0	0.61	0.081	0
CENPN	0.35	0.359	0	-0.01	0.992	0	1.07	0.003	1	0.83	0.048	0	0.37	0.100	0	0.84	0.001	0
SPINK4	0.05	0.957	0	-0.73	0.249	0	-0.24	0.519	0	0.12	0.912	0	0.12	0.612	0	2.72	0.000	1
ZNF606	-0.09	0.886	0	0.44	0.295	0	-0.23	0.269	0	-0.07	0.869	0	-0.26	0.090	0	-1.00	0.000	-1
ADH6	-0.49	0.059	0	-0.89	0.005	0	-0.58	0.082	0	-1.29	0.001	-1	-1.40	0.001	-1	-0.68	0.093	0
SCMH1	-0.27	0.279	0	0.01	0.990	0	-0.25	0.157	0	-0.38	0.342	0	-0.71	0.002	0	-1.36	0.000	-1
GPR171	-0.01	0.991	0	-0.02	0.975	0	0.73	0.045	0	0.83	0.042	0	1.70	0.000	1	2.33	0.000	1
GREM2	0.29	0.548	0	0.20	0.723	0	1.02	0.025	1	0.61	0.197	0	0.38	0.043	0	0.53	0.086	0
IL2RG	0.07	0.886	0	0.37	0.284	0	1.11	0.006	1	0.40	0.343	0	2.30	0.000	1	2.35	0.000	1
CHPT1	0.11	0.774	0	0.45	0.142	0	-0.61	0.019	0	0.43	0.293	0	-0.73	0.000	0	-1.13	0.000	-1
CD27	0.09	0.878	0	0.49	0.220	0	0.10	0.846	0	-0.21	0.671	0	0.34	0.087	0	2.16	0.000	1
TRAF3IP3	0.18	0.710	0	-0.03	0.961	0	0.68	0.065	0	0.08	0.902	0	0.02	0.940	0	1.70	0.000	1
BORCS7-AS	0.15	0.672	0	0.15	0.696	0	-0.01	0.963	0	-0.66	0.090	0	-0.31	0.116	0	-1.22	0.000	-1
BORCS7	0.15	0.672	0	0.15	0.696	0	-0.01	0.963	0	-0.66	0.090	0	-0.31	0.116	0	-1.22	0.000	-1
IGSF10	0.40	0.416	0	0.75	0.119	0	0.68	0.004	0	0.49	0.275	0	1.12	0.000	1	-0.82	0.004	0
SUN3	-0.14	0.727	0	-0.13	0.764	0	-0.08	0.795	0	0.33	0.254	0	-0.10	0.672	0	1.30	0.000	1
ABCG4	-0.55	0.039	0	-0.71	0.025	0	0.02	0.964	0	-0.24	0.394	0	-0.20	0.176	0	1.10	0.000	1
ASB14	0.00	0.997	0	0.91	0.104	0	-1.02	0.006	-1	0.57	0.260	0	-0.46	0.013	0	-0.67	0.033	0
HPSE	-0.12	0.676	0	-0.27	0.522	0	0.99	0.001	0	0.90	0.011	0	1.27	0.000	1	0.41	0.328	0
HGF	0.33	0.140	0	0.19	0.497	0	0.99	0.062	0	1.39	0.039	1	0.64	0.001	0	1.44	0.000	1
SPTBN1	0.14	0.763	0	0.44	0.220	0	-0.23	0.104	0	-0.03	0.927	0	-0.15	0.251	0	-1.57	0.000	-1
ZBTB38	0.02	0.971	0	0.11	0.803	0	0.04	0.846	0	0.32	0.083	0	-0.35	0.017	0	-0.76	0.000	0
EBI3	-0.06	0.913	0	-0.24	0.587	0	0.03	0.932	0	0.33	0.315	0	0.18	0.415	0	2.24	0.000	1
B4GALNT2	-0.65	0.186	0	-0.01	0.989	0	0.82	0.061	0	-3.17	0.000	-1	0.00	0.987	0	-1.00	0.000	-1
TUBB6	0.91	0.038	0	0.16	0.810	0	1.86	0.006	1	-0.31	0.597	0	0.76	0.002	0	0.31	0.107	0
CDK1	0.52	0.218	0	-0.30	0.558	0	1.44	0.003	1	0.69	0.101	0	0.25	0.333	0	0.68	0.008	0

ENTPD3	0.54	0.249	0	0.16	0.814	0	1.77	0.030	1	-0.67	0.242	0	0.13	0.407	0	-0.44	0.380	0
SMOX	0.87	0.019	0	-0.16	0.766	0	1.79	0.002	1	0.17	0.750	0	1.40	0.000	1	1.63	0.000	1
PARP9	-0.04	0.932	0	0.25	0.515	0	0.27	0.219	0	0.55	0.092	0	2.76	0.000	1	0.94	0.006	0
CCL24	-0.41	0.404	0	-0.06	0.938	0	-0.64	0.074	0	0.32	0.465	0	-0.22	0.459	0	-1.44	0.003	-1
GBP2	0.19	0.797	0	0.42	0.499	0	0.04	0.939	0	-0.30	0.469	0	4.67	0.000	1	2.21	0.000	1
KDELR3	0.25	0.500	0	0.27	0.487	0	1.17	0.004	1	0.45	0.192	0	0.33	0.110	0	0.46	0.072	0
MKRN2OS	1.12	0.029	1	-0.13	0.877	0	0.65	0.134	0	0.84	0.200	0	0.32	0.086	0	0.73	0.070	0
INPP5D	-0.12	0.779	0	-0.11	0.805	0	0.87	0.024	0	0.32	0.402	0	0.43	0.019	0	1.41	0.001	1
ENDOU	0.63	0.013	0	-0.43	0.140	0	0.69	0.002	0	0.88	0.033	0	0.65	0.001	0	1.71	0.000	1
ARVCF	-0.38	0.257	0	-0.42	0.245	0	-0.54	0.041	0	-0.79	0.004	0	-0.23	0.075	0	-1.00	0.000	-1
MURC	-0.02	0.949	0	0.38	0.087	0	-1.08	0.004	-1	-0.30	0.738	0	-1.12	0.000	-1	-0.14	0.647	0
PSORS1C2	0.72	0.538	0	-0.46	0.739	0	-0.02	0.972	0	-2.53	0.016	-1	1.27	0.000	1	0.45	0.622	0
ISM1	0.19	0.409	0	0.02	0.968	0	0.23	0.197	0	-0.48	0.158	0	0.09	0.738	0	-1.44	0.000	-1
BATF2	-0.48	0.473	0	-0.20	0.821	0	0.39	0.316	0	0.24	0.665	0	2.49	0.000	1	1.68	0.000	1
MCOLN3	0.43	0.390	0	0.05	0.950	0	0.10	0.843	0	0.01	0.992	0	-0.21	0.231	0	-1.96	0.001	-1
HOXB7	0.08	0.857	0	-0.13	0.762	0	-0.03	0.931	0	1.12	0.027	1	-0.13	0.364	0	0.12	0.336	0
GATA3	-0.72	0.000	0	-0.20	0.361	0	-0.70	0.047	0	-0.82	0.003	0	-0.36	0.130	0	-0.93	0.000	0
SLFN12L	-0.09	0.862	0	-0.05	0.930	0	2.26	0.012	1	0.32	0.488	0	2.31	0.000	1	2.11	0.003	1
GLB1L2	-0.21	0.562	0	0.08	0.876	0	-1.03	0.003	-1	-0.74	0.439	0	-0.43	0.076	0	-2.17	0.000	-1
AURKB	0.33	0.397	0	-0.01	0.987	0	1.28	0.001	1	0.69	0.162	0	0.39	0.009	0	0.32	0.215	0
SLC2A12	-0.68	0.038	0	-0.11	0.842	0	-0.70	0.043	0	-1.08	0.005	-1	-1.34	0.000	-1	-1.59	0.000	-1
ADGRE1	0.14	0.650	0	0.22	0.460	0	0.92	0.004	0	0.89	0.074	0	0.24	0.542	0	1.24	0.002	1
CD44	0.68	0.037	0	0.14	0.772	0	1.21	0.001	1	0.70	0.004	0	0.71	0.004	0	1.32	0.000	1
IGF2BP2	0.52	0.171	0	0.15	0.780	0	0.29	0.402	0	0.35	0.541	0	0.23	0.160	0	1.80	0.000	1
MBP	-0.30	0.225	0	-0.21	0.472	0	-0.43	0.037	0	-0.72	0.023	0	-0.44	0.002	0	-1.72	0.000	-1
TTC9	-0.10	0.867	0	-0.05	0.934	0	-0.22	0.357	0	-0.87	0.005	0	-1.07	0.000	-1	-1.62	0.000	-1
OTUD1	-0.65	0.004	0	-0.29	0.264	0	-1.00	0.007	0	-0.77	0.014	0	-1.20	0.000	-1	-1.53	0.000	-1
H3F3A	-0.06	0.835	0	-0.07	0.786	0	-0.09	0.550	0	0.29	0.136	0	0.32	0.012	0	1.77	0.000	1
CCDC88B	-0.06	0.934	0	0.03	0.967	0	0.64	0.142	0	0.08	0.915	0	0.11	0.456	0	2.35	0.000	1
TFAP2B	-0.39	0.221	0	-0.02	0.975	0	-0.81	0.014	0	-0.18	0.648	0	-0.73	0.006	0	-1.32	0.000	-1
AURKA	0.48	0.038	0	-0.09	0.806	0	1.16	0.002	1	0.52	0.378	0	0.58	0.005	0	0.53	0.037	0
KRT15	-0.42	0.096	0	-0.20	0.540	0	-1.42	0.008	-1	-1.12	0.001	-1	-1.05	0.000	-1	-0.93	0.000	0

ACCEPTED MANUSCRIPT

SPOCK2	-0.47	0.037	0	-0.07	0.846	0	-0.98	0.006	0	-0.22	0.570	0	-0.55	0.002	0	-1.49	0.000	-1
RHPN2	0.32	0.577	0	0.26	0.677	0	-0.44	0.045	0	-1.15	0.008	-1	-0.38	0.094	0	-1.87	0.001	-1
ACAP1	0.17	0.658	0	-0.21	0.575	0	0.33	0.213	0	0.47	0.155	0	0.10	0.582	0	1.79	0.000	1
MYH2	0.13	0.865	0	0.69	0.191	0	-0.54	0.184	0	1.66	0.403	0	-0.06	0.853	0	-1.05	0.001	-1
THRSP	0.23	0.680	0	0.98	0.037	0	-0.30	0.614	0	0.10	0.905	0	-0.44	0.159	0	-1.06	0.015	-1
CLEC4A	0.22	0.509	0	0.31	0.338	0	0.91	0.011	0	0.59	0.595	0	1.04	0.003	1	1.25	0.003	1
CTSE	2.13	0.130	0	0.95	0.602	0	1.06	0.004	1	-2.65	0.052	0	1.44	0.000	1	-1.70	0.137	0
CMYA5	-0.18	0.737	0	0.62	0.161	0	-0.98	0.005	0	0.09	0.951	0	-0.84	0.005	0	-1.13	0.000	-1
SLC9A3	-0.32	0.446	0	0.04	0.956	0	-0.48	0.029	0	-1.75	0.003	-1	0.01	0.985	0	0.54	0.026	0
CD300LD	0.38	0.255	0	0.17	0.698	0	1.83	0.042	1	-0.23	0.526	0	0.88	0.028	0	1.96	0.000	1
IFI44	0.11	0.874	0	0.54	0.288	0	1.43	0.041	1	0.18	0.765	0	3.84	0.000	1	1.27	0.028	1
SARDH	0.14	0.820	0	-0.08	0.905	0	0.18	0.400	0	-0.35	0.632	0	0.13	0.465	0	-1.19	0.002	-1
HOXD8	0.00	0.997	0	0.05	0.911	0	0.01	0.973	0	0.52	0.223	0	-0.09	0.703	0	-1.06	0.000	-1
CENPE	0.38	0.621	0	0.08	0.937	0	1.23	0.003	1	0.89	0.044	0	0.78	0.000	0	1.18	0.000	1
KCTD12	-0.68	0.001	0	-0.05	0.858	0	-0.49	0.034	0	-1.01	0.001	-1	-0.61	0.000	0	-0.40	0.170	0
CD244	-0.38	0.179	0	-0.01	0.979	0	0.29	0.468	0	0.18	0.656	0	-0.08	0.636	0	1.40	0.001	1
CASP1	0.50	0.202	0	-0.07	0.910	0	0.59	0.011	0	0.50	0.015	0	1.61	0.000	1	0.72	0.000	0
DBF4	0.41	0.136	0	-0.21	0.554	0	1.03	0.003	1	0.72	0.010	0	0.71	0.001	0	0.70	0.007	0
MYO5B	0.26	0.264	0	-0.40	0.095	0	0.30	0.097	0	0.22	0.363	0	0.14	0.343	0	1.12	0.000	1
NFKBIB	-0.09	0.748	0	-0.19	0.416	0	0.03	0.906	0	0.08	0.806	0	0.25	0.078	0	1.09	0.000	1
IL1B	1.35	0.168	0	-0.04	0.986	0	4.63	0.002	1	0.52	0.467	0	3.58	0.000	1	4.43	0.000	1
SAMHD1	0.01	0.993	0	0.13	0.772	0	1.10	0.002	1	0.81	0.005	0	3.13	0.000	1	1.43	0.001	1
NOS1	0.02	0.977	0	0.44	0.284	0	-0.47	0.029	0	0.10	0.842	0	-0.15	0.310	0	-1.60	0.000	-1
LILRA1	-0.08	0.894	0	0.07	0.920	0	2.23	0.004	1	1.98	0.009	1	2.45	0.000	1	1.26	0.003	1
LILRB5	-0.08	0.894	0	0.07	0.920	0	2.23	0.004	1	1.98	0.009	1	2.45	0.000	1	1.26	0.003	1
LILRB3	-0.08	0.894	0	0.07	0.920	0	2.23	0.004	1	1.98	0.009	1	2.45	0.000	1	1.26	0.003	1
LILRB3	-0.08	0.894	0	0.07	0.920	0	2.23	0.004	1	1.98	0.009	1	2.45	0.000	1	1.26	0.003	1
LILRB3	-0.08	0.894	0	0.07	0.920	0	2.23	0.004	1	1.98	0.009	1	2.45	0.000	1	1.26	0.003	1
LILRA6	-0.08	0.894	0	0.07	0.920	0	2.23	0.004	1	1.98	0.009	1	2.45	0.000	1	1.26	0.003	1
LILRA6	-0.08	0.894	0	0.07	0.920	0	2.23	0.004	1	1.98	0.009	1	2.45	0.000	1	1.26	0.003	1
LILRB2	-0.08	0.894	0	0.07	0.920	0	2.23	0.004	1	1.98	0.009	1	2.45	0.000	1	1.26	0.003	1
AHCY	0.38	0.460	0	-0.05	0.945	0	-0.53	0.145	0	0.28	0.774	0	1.48	0.000	1	0.08	0.735	0

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

KRT31	1.97	0.184	0	0.70	0.730	0	-0.15	0.870	0	-3.01	0.026	-1	2.59	0.000	1	-3.68	0.004	-1
SFMBT2	0.34	0.481	0	0.32	0.537	0	0.41	0.263	0	0.20	0.629	0	0.10	0.667	0	1.17	0.000	1
DRAXIN	0.31	0.319	0	0.06	0.904	0	0.59	0.066	0	-0.42	0.382	0	0.11	0.550	0	1.61	0.000	1
IFNG	-0.22	0.438	0	-0.02	0.972	0	-0.12	0.702	0	0.99	0.027	0	2.31	0.000	1	2.64	0.000	1
TNNI3	-0.69	0.060	0	-0.26	0.599	0	0.32	0.398	0	0.08	0.845	0	0.07	0.737	0	1.41	0.000	1
KLHL24	0.10	0.838	0	0.30	0.468	0	-0.41	0.019	0	-0.32	0.301	0	-0.36	0.121	0	-1.27	0.003	-1
ALOX15B	1.95	0.018	1	-0.64	0.552	0	1.81	0.010	1	-2.26	0.008	-1	2.40	0.000	1	3.90	0.000	1
SLC38A3	-0.30	0.415	0	0.29	0.475	0	-0.49	0.127	0	-2.42	0.000	-1	-0.10	0.615	0	-1.31	0.000	-1
PLA1A	0.16	0.812	0	0.00	0.997	0	1.42	0.013	1	0.47	0.516	0	0.70	0.003	0	-0.28	0.704	0
PIK3R5	0.26	0.500	0	0.04	0.951	0	0.84	0.010	0	0.41	0.408	0	0.15	0.443	0	1.91	0.000	1
LTBP3	-0.15	0.640	0	-0.12	0.742	0	-0.28	0.153	0	-0.36	0.335	0	-0.16	0.376	0	-1.52	0.000	-1
SLC6A4	-1.00	0.000	-1	-0.28	0.321	0	-0.28	0.186	0	-1.02	0.013	-1	-0.66	0.000	0	-0.94	0.009	0
CYP51A1	0.69	0.018	0	0.01	0.982	0	-0.24	0.223	0	1.20	0.001	1	-0.43	0.038	0	0.40	0.001	0
CIART	-0.95	0.002	0	-0.50	0.149	0	-0.61	0.090	0	0.98	0.004	0	-1.09	0.007	-1	-0.02	0.958	0
RNF19B	-0.07	0.879	0	-0.27	0.429	0	0.55	0.012	0	0.03	0.926	0	1.65	0.000	1	0.75	0.000	0
ARRDC4	0.20	0.401	0	-0.32	0.178	0	0.39	0.036	0	0.16	0.490	0	0.78	0.000	0	1.43	0.000	1
AGMO	-0.18	0.554	0	0.38	0.187	0	-0.15	0.290	0	0.30	0.503	0	-0.54	0.026	0	-1.08	0.001	-1
RNF114	-0.12	0.805	0	-0.14	0.780	0	0.01	0.954	0	-0.04	0.927	0	1.18	0.000	1	0.69	0.000	0
NEGR1	0.33	0.422	0	0.31	0.483	0	-0.36	0.096	0	0.22	0.601	0	0.12	0.435	0	-1.28	0.000	-1
SCGB1A1	-0.68	0.146	0	-0.01	0.991	0	-1.64	0.014	-1	-2.53	0.008	-1	-3.18	0.000	-1	-3.66	0.000	-1
CD79B	-0.20	0.726	0	-0.32	0.544	0	0.15	0.717	0	0.18	0.654	0	0.02	0.941	0	2.28	0.000	1
ALDH1A1	-0.47	0.157	0	0.19	0.663	0	-0.80	0.004	0	0.16	0.847	0	-0.80	0.000	0	-1.12	0.003	-1
NUAK1	-0.58	0.022	0	-0.08	0.837	0	-0.55	0.027	0	-0.22	0.611	0	0.07	0.774	0	-1.23	0.000	-1
SYT4	1.07	0.013	1	0.02	0.985	0	0.33	0.315	0	-0.39	0.672	0	-0.52	0.033	0	-2.04	0.004	-1
SELP	0.84	0.013	0	0.47	0.229	0	2.04	0.002	1	1.97	0.002	1	1.38	0.021	1	1.59	0.000	1
FOXN1	0.00	0.995	0	-0.25	0.594	0	-0.40	0.129	0	-1.51	0.002	-1	0.17	0.555	0	-0.35	0.375	0
1-Sep	0.30	0.340	0	-0.19	0.619	0	0.21	0.550	0	0.06	0.882	0	0.08	0.619	0	1.34	0.000	1
CSF2RB	-0.07	0.910	0	-0.46	0.248	0	1.20	0.005	1	0.85	0.183	0	1.91	0.000	1	1.46	0.000	1
IL20RA	-0.85	0.040	0	-0.25	0.667	0	-0.52	0.100	0	-1.36	0.002	-1	-1.33	0.000	-1	-1.06	0.004	-1
SULT1A1	-0.55	0.015	0	0.23	0.423	0	-0.61	0.019	0	-0.43	0.350	0	-0.53	0.003	0	-1.32	0.005	-1
SULT1A2	-0.55	0.015	0	0.23	0.423	0	-0.61	0.019	0	-0.43	0.350	0	-0.53	0.003	0	-1.32	0.005	-1
NTPCR	0.05	0.906	0	-0.02	0.968	0	0.07	0.824	0	0.00	0.994	0	-0.36	0.015	0	1.17	0.000	1

ACCEPTED MANUSCRIPT

IVD	-0.27	0.288	0	0.28	0.317	0	-0.48	0.022	0	-0.02	0.958	0	-0.32	0.030	0	-1.40	0.000	-1
LUM	0.43	0.329	0	0.33	0.515	0	1.29	0.006	1	1.22	0.146	0	0.71	0.008	0	0.12	0.660	0
SLC34A2	0.53	0.086	0	-0.54	0.129	0	0.75	0.005	0	0.56	0.125	0	1.60	0.000	1	1.86	0.000	1
FXYD4	0.49	0.325	0	0.00	0.997	0	0.16	0.625	0	-0.28	0.818	0	2.31	0.000	1	1.71	0.038	1
DDAH1	0.44	0.067	0	0.16	0.630	0	2.57	0.001	1	1.11	0.051	0	1.35	0.000	1	1.89	0.000	1
LRAT	2.00	0.003	1	0.95	0.205	0	1.38	0.021	1	0.05	0.971	0	0.99	0.003	0	0.21	0.733	0
SP6	0.14	0.850	0	-0.38	0.529	0	-0.20	0.475	0	-0.84	0.055	0	0.76	0.005	0	-1.28	0.002	-1
EYA4	0.01	0.987	0	0.63	0.146	0	-0.03	0.944	0	1.38	0.007	1	-0.18	0.296	0	-0.23	0.291	0
GBP7	0.35	0.711	0	1.39	0.073	0	0.67	0.056	0	0.98	0.037	0	3.27	0.000	1	1.22	0.003	1
GBP4	0.35	0.711	0	1.39	0.073	0	0.67	0.056	0	0.98	0.037	0	3.27	0.000	1	1.22	0.003	1
KLHL5	-0.15	0.548	0	0.08	0.809	0	0.12	0.514	0	0.10	0.769	0	-0.11	0.493	0	1.07	0.000	1
SP100	0.37	0.641	0	0.50	0.236	0	0.60	0.053	0	0.45	0.073	0	2.19	0.000	1	0.94	0.031	0
SP140L	0.37	0.641	0	0.50	0.236	0	0.60	0.053	0	0.45	0.073	0	2.19	0.000	1	0.94	0.031	0
SERPINA3	0.15	0.782	0	0.30	0.522	0	0.97	0.003	0	1.15	0.273	0	1.49	0.000	1	1.90	0.000	1
SERPINA3	0.15	0.782	0	0.30	0.522	0	0.97	0.003	0	1.15	0.273	0	1.49	0.000	1	1.90	0.000	1
MPZ	-0.34	0.169	0	0.22	0.449	0	-0.93	0.031	0	-0.97	0.016	0	-0.80	0.002	0	-1.42	0.000	-1
MSI1	0.36	0.416	0	0.02	0.983	0	0.40	0.165	0	-0.73	0.253	0	0.29	0.165	0	-1.26	0.014	-1
PROCR	0.64	0.035	0	0.24	0.556	0	0.74	0.079	0	-0.64	0.361	0	1.46	0.000	1	0.40	0.317	0
PCP4L1	-0.08	0.857	0	0.59	0.047	0	-1.00	0.005	-1	0.42	0.276	0	-0.82	0.012	0	-1.03	0.001	-1
OTOP2	0.90	0.155	0	0.27	0.763	0	0.33	0.314	0	-1.78	0.049	-1	0.25	0.072	0	-1.36	0.040	-1
CD300LD	0.41	0.148	0	0.61	0.052	0	1.57	0.028	1	0.74	0.163	0	0.36	0.123	0	1.68	0.001	1
CTSK	0.23	0.406	0	0.15	0.651	0	0.51	0.045	0	1.83	0.015	1	1.20	0.000	1	0.31	0.338	0
MMP8	-0.17	0.638	0	-0.22	0.519	0	2.29	0.043	1	-0.07	0.877	0	0.86	0.048	0	3.13	0.000	1
AKR1C4	-0.36	0.576	0	0.31	0.665	0	1.24	0.017	1	-0.40	0.428	0	-1.05	0.021	-1	-0.92	0.000	0
AKR1C3	-0.36	0.576	0	0.31	0.665	0	1.24	0.017	1	-0.40	0.428	0	-1.05	0.021	-1	-0.92	0.000	0
AKR1C1	-0.36	0.576	0	0.31	0.665	0	1.24	0.017	1	-0.40	0.428	0	-1.05	0.021	-1	-0.92	0.000	0
PIK3AP1	0.33	0.165	0	0.10	0.766	0	1.64	0.030	1	0.23	0.541	0	0.34	0.067	0	2.29	0.000	1
ERO1A	1.30	0.000	1	0.35	0.329	0	0.43	0.024	0	0.46	0.202	0	0.85	0.000	0	0.39	0.147	0
ANGPTL4	0.35	0.618	0	-0.42	0.556	0	1.19	0.025	1	-0.92	0.365	0	0.47	0.154	0	0.70	0.050	0
BTG1	-0.51	0.029	0	-0.44	0.102	0	0.14	0.619	0	-0.12	0.610	0	-0.24	0.159	0	1.24	0.000	1
GADL1	-0.96	0.004	0	-0.91	0.018	0	0.76	0.028	0	0.31	0.651	0	0.81	0.005	0	1.41	0.006	1
CAMP	-0.14	0.747	0	0.08	0.878	0	-0.25	0.382	0	-0.23	0.562	0	-0.07	0.780	0	1.46	0.000	1

DISP1	-0.31	0.262	0	0.01	0.986	0	-0.51	0.024	0	0.04	0.913	0	-1.05	0.000	-1	-0.51	0.009	0
IKZF1	-0.15	0.803	0	0.02	0.978	0	0.59	0.101	0	0.13	0.791	0	0.56	0.004	0	1.24	0.003	1
PAK3	-0.45	0.057	0	-0.13	0.692	0	-0.63	0.012	0	-0.25	0.255	0	-1.08	0.000	-1	-0.72	0.005	0
CD209	0.14	0.820	0	0.32	0.556	0	0.23	0.585	0	-0.37	0.538	0	-0.51	0.018	0	-1.35	0.029	-1
KRT77	-0.38	0.083	0	0.30	0.234	0	-1.19	0.018	-1	-0.47	0.047	0	-0.83	0.149	0	-1.64	0.000	-1
IL1RL1	-0.46	0.101	0	-0.30	0.393	0	1.20	0.023	1	1.02	0.313	0	1.19	0.010	1	3.29	0.000	1
BCHE	0.25	0.535	0	0.42	0.257	0	-0.69	0.006	0	0.45	0.157	0	-1.63	0.000	-1	-1.01	0.001	-1
PLEKHB1	-0.16	0.515	0	0.37	0.110	0	-0.50	0.139	0	-0.48	0.173	0	-0.10	0.677	0	-1.49	0.000	-1
FAM65B	-0.36	0.141	0	-0.20	0.515	0	1.23	0.025	1	0.00	0.998	0	0.15	0.299	0	0.77	0.003	0
PIGN	0.10	0.823	0	0.05	0.927	0	0.18	0.242	0	-0.05	0.848	0	0.38	0.008	0	1.09	0.000	1
CXCL1	0.81	0.024	0	-0.16	0.773	0	1.64	0.089	0	0.49	0.273	0	1.03	0.006	1	3.82	0.000	1
CXCL3	0.81	0.024	0	-0.16	0.773	0	1.64	0.089	0	0.49	0.273	0	1.03	0.006	1	3.82	0.000	1
IL7R	0.49	0.185	0	0.16	0.763	0	0.70	0.019	0	0.79	0.022	0	0.31	0.102	0	1.72	0.000	1
CD28	-0.10	0.901	0	0.30	0.640	0	-0.16	0.479	0	0.53	0.099	0	0.07	0.756	0	1.04	0.004	1
ASPM	0.25	0.516	0	-0.22	0.598	0	1.24	0.003	1	0.69	0.086	0	0.16	0.504	0	0.55	0.010	0
GRPR	0.29	0.535	0	0.06	0.933	0	0.75	0.006	0	0.58	0.171	0	1.15	0.001	1	0.41	0.007	0
PI15	1.26	0.002	1	0.29	0.566	0	1.84	0.013	1	-0.24	0.818	0	1.60	0.000	1	0.62	0.016	0
TMPRSS4	-0.03	0.950	0	-0.51	0.129	0	0.18	0.538	0	0.45	0.056	0	0.19	0.176	0	1.18	0.000	1
REG3A	0.00	0.998	0	0.08	0.849	0	4.66	0.003	1	0.16	0.705	0	0.30	0.409	0	2.86	0.000	1
PER2	-0.65	0.038	0	-0.48	0.189	0	-0.49	0.031	0	1.06	0.002	1	-0.83	0.001	0	-0.29	0.233	0
ACTG2	0.30	0.632	0	-0.56	0.320	0	0.17	0.605	0	1.22	0.224	0	0.50	0.009	0	-1.34	0.000	-1
MTURN	0.38	0.166	0	0.55	0.065	0	-0.95	0.006	0	-0.53	0.155	0	-0.35	0.034	0	-1.41	0.000	-1
TENM2	0.15	0.671	0	-0.03	0.954	0	-0.30	0.087	0	-0.27	0.252	0	-0.02	0.939	0	-1.39	0.000	-1
CES1	0.95	0.062	0	0.98	0.095	0	-0.89	0.022	0	0.72	0.234	0	-0.68	0.012	0	-2.03	0.000	-1
MYH4	0.11	0.862	0	0.48	0.320	0	-1.56	0.006	-1	2.15	0.454	0	-1.34	0.048	-1	2.22	0.005	1
KCNMA1	-0.15	0.688	0	0.51	0.108	0	-0.64	0.008	0	0.40	0.575	0	-0.70	0.008	0	-1.30	0.000	-1
LDB3	-0.15	0.644	0	0.43	0.138	0	-0.95	0.007	0	0.38	0.697	0	-0.80	0.005	0	-1.39	0.000	-1
RNF182	0.12	0.855	0	-0.11	0.871	0	0.02	0.948	0	-0.82	0.227	0	0.18	0.252	0	-2.09	0.001	-1
ZNF665	-0.15	0.569	0	0.09	0.781	0	-0.42	0.017	0	-0.16	0.443	0	-0.01	0.959	0	-1.23	0.000	-1
ART1	-0.40	0.266	0	0.13	0.793	0	-1.13	0.004	-1	0.94	0.109	0	-0.72	0.004	0	-0.33	0.328	0
FKBP11	0.18	0.570	0	0.08	0.844	0	1.24	0.006	1	0.43	0.234	0	-0.07	0.739	0	1.25	0.000	1
FHL2	0.88	0.005	0	0.33	0.392	0	2.00	0.001	1	0.91	0.033	0	1.37	0.000	1	1.00	0.039	0

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

CRISPLD2	-0.55	0.047	0	-0.42	0.193	0	0.21	0.220	0	1.25	0.012	1	0.43	0.051	0	0.77	0.002	0
BRINP3	-0.04	0.933	0	-0.01	0.983	0	1.76	0.027	1	-0.25	0.665	0	0.27	0.205	0	0.14	0.232	0
PDCD1	0.81	0.024	0	-0.41	0.344	0	0.73	0.087	0	0.62	0.185	0	0.15	0.353	0	1.59	0.000	1
GLDC	-1.35	0.001	-1	-0.33	0.476	0	-0.80	0.008	0	-1.12	0.000	-1	-0.60	0.000	0	-0.08	0.615	0
KRBA1	-0.37	0.230	0	-0.11	0.794	0	-0.76	0.009	0	-0.47	0.040	0	-0.33	0.006	0	-1.23	0.000	-1
BTLA	-0.29	0.455	0	0.10	0.846	0	-0.06	0.887	0	0.08	0.870	0	-0.12	0.473	0	1.22	0.000	1
OSMR	0.44	0.267	0	0.32	0.491	0	0.83	0.008	0	0.15	0.671	0	1.68	0.000	1	1.02	0.000	1
ZAP70	0.21	0.643	0	-0.38	0.351	0	0.08	0.875	0	-0.64	0.026	0	0.20	0.184	0	1.77	0.000	1
LTBP4	-0.62	0.017	0	-0.18	0.595	0	-0.78	0.022	0	-0.70	0.014	0	-0.46	0.029	0	-1.60	0.000	-1
MT1G	-0.45	0.069	0	-0.27	0.360	0	0.05	0.824	0	-0.11	0.772	0	-0.07	0.715	0	2.37	0.000	1
MT1E	-0.45	0.069	0	-0.27	0.360	0	0.05	0.824	0	-0.11	0.772	0	-0.07	0.715	0	2.37	0.000	1
MT1A	-0.45	0.069	0	-0.27	0.360	0	0.05	0.824	0	-0.11	0.772	0	-0.07	0.715	0	2.37	0.000	1
MT1B	-0.45	0.069	0	-0.27	0.360	0	0.05	0.824	0	-0.11	0.772	0	-0.07	0.715	0	2.37	0.000	1
GPM6A	0.17	0.702	0	0.65	0.083	0	-0.30	0.222	0	0.06	0.954	0	-0.36	0.171	0	-1.20	0.000	-1
IRF5	-0.05	0.907	0	-0.06	0.898	0	0.07	0.748	0	-0.20	0.472	0	0.37	0.041	0	1.07	0.000	1
NCKAP1L	-0.15	0.672	0	0.14	0.789	0	0.87	0.042	0	0.64	0.211	0	0.84	0.000	0	1.57	0.000	1
C1orf123	-0.06	0.884	0	0.12	0.719	0	0.01	0.965	0	-0.11	0.578	0	-0.19	0.162	0	-1.08	0.000	-1
PEX11A	0.15	0.540	0	0.16	0.534	0	-0.56	0.022	0	0.67	0.023	0	-1.17	0.001	-1	-0.87	0.000	0
HTR1B	-0.12	0.743	0	0.21	0.523	0	0.92	0.015	0	-0.06	0.881	0	1.54	0.000	1	0.19	0.050	0
CPXM2	0.18	0.397	0	0.22	0.299	0	-0.36	0.166	0	-1.35	0.001	-1	-0.72	0.004	0	-1.82	0.000	-1
CSPG4	-0.08	0.904	0	0.01	0.990	0	-0.18	0.418	0	-0.38	0.343	0	-0.13	0.435	0	-1.07	0.000	-1
TCHH	2.69	0.088	0	1.02	0.630	0	0.79	0.430	0	-1.35	0.348	0	3.85	0.000	1	-3.43	0.001	-1
ACOT2	0.09	0.894	0	1.01	0.035	1	-0.56	0.311	0	-0.65	0.039	0	-0.81	0.003	0	-0.94	0.001	0
ACOT1	0.09	0.894	0	1.01	0.035	1	-0.56	0.311	0	-0.65	0.039	0	-0.81	0.003	0	-0.94	0.001	0
DAB1	-0.59	0.041	0	0.17	0.684	0	-0.44	0.098	0	-0.76	0.097	0	-0.08	0.775	0	-2.30	0.000	-1
ARHGAP24	0.07	0.877	0	0.07	0.861	0	0.16	0.360	0	0.25	0.479	0	0.04	0.917	0	-1.26	0.000	-1
MEST	0.41	0.274	0	0.62	0.119	0	1.38	0.017	1	-0.81	0.046	0	0.23	0.251	0	-0.02	0.930	0
MYLK	0.10	0.777	0	0.26	0.340	0	0.33	0.105	0	0.45	0.083	0	0.21	0.096	0	-1.21	0.000	-1
ZC3HAV1	-0.07	0.839	0	-0.03	0.948	0	0.10	0.562	0	0.01	0.979	0	0.71	0.002	0	1.31	0.000	1
ATP1B2	-1.04	0.001	-1	0.02	0.978	0	-0.63	0.050	0	-0.20	0.814	0	-0.52	0.019	0	-0.54	0.059	0
LIX1L	0.03	0.941	0	0.01	0.984	0	0.34	0.157	0	1.07	0.027	1	0.28	0.177	0	0.05	0.782	0
PAK1	-0.28	0.225	0	-0.07	0.847	0	-0.12	0.520	0	0.02	0.941	0	0.01	0.956	0	1.23	0.000	1

ACCEPTED MANUSCRIPT

TMEM50B	0.10	0.710	0	0.09	0.724	0	0.24	0.201	0	0.48	0.022	0	1.03	0.000	1	0.63	0.000	0
TXLNB	0.29	0.791	0	1.18	0.148	0	-1.35	0.004	-1	0.84	0.525	0	-1.01	0.002	-1	-1.45	0.000	-1
TLR1	0.13	0.803	0	0.05	0.942	0	1.51	0.043	1	0.41	0.184	0	0.83	0.002	0	2.60	0.000	1
SDK2	-0.04	0.928	0	0.27	0.461	0	-0.34	0.135	0	-0.23	0.529	0	-0.25	0.076	0	-1.57	0.000	-1
BMP8B	1.03	0.025	1	0.51	0.357	0	0.16	0.793	0	-1.52	0.063	0	0.18	0.397	0	-1.26	0.005	-1
BMP8A	1.03	0.025	1	0.51	0.357	0	0.16	0.793	0	-1.52	0.063	0	0.18	0.397	0	-1.26	0.005	-1
ALDH3B1	-0.09	0.906	0	-0.12	0.867	0	0.64	0.067	0	0.04	0.951	0	-0.12	0.559	0	1.45	0.000	1
RRM2	0.56	0.162	0	0.08	0.902	0	0.91	0.014	0	0.47	0.120	0	1.17	0.000	1	1.08	0.001	1
AQP5	-0.69	0.032	0	-0.42	0.271	0	1.46	0.010	1	-0.42	0.340	0	0.24	0.130	0	-0.68	0.011	0
GML	-0.05	0.946	0	-0.16	0.801	0	0.20	0.778	0	-0.36	0.479	0	0.05	0.869	0	1.35	0.000	1
NEXN	-0.47	0.603	0	0.41	0.672	0	-0.90	0.006	0	0.47	0.481	0	-1.25	0.000	-1	-0.70	0.002	0
SYTL3	-0.65	0.003	0	-0.37	0.134	0	-0.22	0.460	0	0.19	0.638	0	0.12	0.605	0	1.39	0.000	1
LRRC2	-0.35	0.567	0	0.56	0.329	0	-0.76	0.020	0	1.11	0.278	0	-0.10	0.493	0	-1.09	0.001	-1
BASP1	0.48	0.097	0	-0.02	0.964	0	1.19	0.010	1	-0.03	0.963	0	0.50	0.003	0	0.49	0.006	0
FER1L6	0.01	0.980	0	-0.05	0.902	0	-0.06	0.833	0	0.02	0.968	0	0.21	0.285	0	-1.27	0.001	-1
TMEM57	0.01	0.973	0	0.07	0.856	0	-0.04	0.841	0	0.36	0.097	0	-0.19	0.291	0	-1.07	0.000	-1
TLR2	0.28	0.370	0	0.06	0.910	0	0.98	0.114	0	0.30	0.269	0	0.21	0.511	0	2.25	0.000	1
KRT6C	0.90	0.101	0	-0.26	0.742	0	3.42	0.000	1	0.79	0.400	0	3.84	0.000	1	2.17	0.000	1
KRT6A	0.90	0.101	0	-0.26	0.742	0	3.42	0.000	1	0.79	0.400	0	3.84	0.000	1	2.17	0.000	1
KLK10	0.71	0.095	0	0.29	0.610	0	0.48	0.055	0	0.21	0.734	0	1.82	0.000	1	-0.09	0.842	0
B4GALT5	0.04	0.924	0	0.00	0.999	0	0.76	0.016	0	1.00	0.067	0	1.08	0.001	1	0.63	0.110	0
MRGPRX4	-0.20	0.626	0	-0.08	0.886	0	0.31	0.222	0	2.09	0.030	1	0.62	0.050	0	0.49	0.046	0
MRGPRX2	-0.20	0.626	0	-0.08	0.886	0	0.31	0.222	0	2.09	0.030	1	0.62	0.050	0	0.49	0.046	0
IRF3	-0.23	0.527	0	-0.22	0.561	0	-0.14	0.478	0	-0.32	0.125	0	0.14	0.456	0	-1.09	0.000	-1
CISH	-0.30	0.446	0	-0.57	0.136	0	0.15	0.682	0	-0.03	0.960	0	1.54	0.000	1	-0.22	0.291	0
CDO1	0.35	0.211	0	0.85	0.008	0	-1.13	0.001	-1	1.18	0.111	0	-0.53	0.024	0	-1.79	0.000	-1
CES2	-0.41	0.081	0	-0.21	0.477	0	0.63	0.006	0	1.10	0.016	1	0.03	0.896	0	0.76	0.025	0
PTPN14	-0.78	0.002	0	-0.21	0.476	0	-0.96	0.006	0	-1.12	0.000	-1	-0.63	0.001	0	-1.63	0.000	-1
KRT28	3.23	0.040	1	1.47	0.469	0	1.03	0.223	0	-2.06	0.112	0	2.37	0.000	1	-4.21	0.000	-1
TET1	-0.01	0.985	0	0.28	0.536	0	-0.03	0.944	0	-0.42	0.325	0	-0.46	0.100	0	-1.92	0.000	-1
TYROBP	-0.06	0.935	0	-0.11	0.877	0	1.10	0.031	1	0.51	0.248	0	0.58	0.035	0	0.78	0.016	0
NTS	0.03	0.957	0	-0.08	0.881	0	0.37	0.248	0	-0.18	0.735	0	0.23	0.545	0	1.35	0.000	1

C1QTNF6	0.08	0.905	0	0.06	0.928	0	1.00	0.012	1	0.16	0.747	0	0.57	0.009	0	0.50	0.032	0
GAL	0.00	0.997	0	-0.20	0.620	0	0.26	0.197	0	-0.07	0.902	0	0.14	0.467	0	1.47	0.001	1
TMEM159	-0.63	0.001	0	-0.01	0.978	0	-0.68	0.029	0	-0.48	0.045	0	-0.91	0.000	0	-1.05	0.000	-1
SELENBP1	0.23	0.386	0	-0.05	0.898	0	-0.11	0.555	0	-0.67	0.224	0	0.26	0.255	0	-1.32	0.000	-1
PADI3	2.44	0.058	0	0.75	0.679	0	0.88	0.238	0	-1.89	0.144	0	0.99	0.001	0	-3.43	0.006	-1
CRABP1	0.23	0.697	0	0.05	0.951	0	1.26	0.004	1	0.03	0.952	0	0.99	0.009	0	0.50	0.070	0
TMEM229A	-0.70	0.025	0	-0.18	0.684	0	-1.00	0.003	0	-0.29	0.422	0	-0.64	0.001	0	-2.42	0.000	-1
TCF24	0.51	0.131	0	-0.70	0.060	0	-0.49	0.250	0	1.66	0.000	1	-0.40	0.104	0	-0.59	0.080	0
RNASE3	-2.34	0.166	0	-0.23	0.937	0	1.10	0.218	0	2.64	0.001	1	0.76	0.073	0	-1.43	0.003	-1
SH2D2A	-0.26	0.339	0	-0.09	0.800	0	0.50	0.090	0	-0.17	0.657	0	0.00	1.000	0	2.18	0.000	1
LY9	0.01	0.994	0	0.10	0.904	0	0.93	0.003	0	0.33	0.413	0	-0.12	0.648	0	2.11	0.000	1
TAP1	-0.34	0.383	0	-0.29	0.496	0	-0.22	0.231	0	-0.12	0.669	0	2.06	0.000	1	0.13	0.163	0
SYNGR1	-0.46	0.158	0	-0.46	0.198	0	-0.57	0.008	0	-0.91	0.048	0	-0.68	0.001	0	-1.43	0.000	-1
GDF10	0.06	0.917	0	0.07	0.899	0	0.38	0.223	0	-1.04	0.194	0	0.10	0.516	0	-1.34	0.000	-1
ADAMTS4	0.93	0.020	0	0.17	0.774	0	1.55	0.005	1	-0.01	0.993	0	0.84	0.014	0	0.31	0.369	0
RASGRP4	-0.49	0.051	0	0.00	0.998	0	0.36	0.144	0	0.04	0.944	0	0.10	0.704	0	1.01	0.005	1
APOC4-AP(	0.03	0.961	0	-0.21	0.693	0	0.43	0.354	0	0.49	0.087	0	-0.03	0.921	0	2.46	0.000	1
APOC2	0.03	0.961	0	-0.21	0.693	0	0.43	0.354	0	0.49	0.087	0	-0.03	0.921	0	2.46	0.000	1
IL36A	1.42	0.006	1	-0.85	0.147	0	2.89	0.000	1	3.66	0.000	1	1.65	0.000	1	3.40	0.000	1
C3orf18	0.15	0.807	0	0.28	0.596	0	-0.05	0.871	0	-0.27	0.529	0	-0.02	0.958	0	-1.31	0.000	-1
DEFB105B	0.05	0.966	0	0.18	0.867	0	-0.02	0.948	0	-2.26	0.005	-1	0.34	0.063	0	-0.33	0.006	0
TFRC	0.56	0.009	0	0.46	0.060	0	0.09	0.648	0	1.07	0.000	1	-0.33	0.015	0	0.40	0.029	0
TNNC1	-0.45	0.230	0	0.09	0.876	0	-0.86	0.008	0	0.30	0.591	0	-1.27	0.017	-1	3.36	0.001	1
AQP7	0.20	0.772	0	0.52	0.368	0	-0.42	0.108	0	-0.06	0.909	0	-0.12	0.565	0	-1.06	0.001	-1
RABL6	-0.20	0.371	0	-0.13	0.617	0	-0.07	0.675	0	0.13	0.551	0	-0.27	0.058	0	-1.27	0.000	-1
TMEM51	0.16	0.720	0	-0.31	0.416	0	0.56	0.059	0	0.01	0.991	0	0.57	0.002	0	1.60	0.000	1
DAXX	-0.17	0.466	0	-0.22	0.370	0	0.03	0.891	0	0.03	0.935	0	1.15	0.000	1	0.59	0.001	0
CYBRD1	0.66	0.273	0	0.38	0.597	0	-0.11	0.726	0	-1.24	0.011	-1	0.71	0.014	0	-2.31	0.001	-1
SLC13A3	0.39	0.253	0	0.07	0.898	0	0.96	0.062	0	0.10	0.848	0	0.04	0.856	0	4.71	0.000	1
TIMP1	0.65	0.127	0	0.05	0.951	0	3.51	0.002	1	1.26	0.097	0	3.38	0.000	1	3.63	0.000	1
FAM101B	0.01	0.983	0	-0.09	0.771	0	-0.13	0.399	0	-0.37	0.426	0	0.04	0.890	0	-1.30	0.000	-1
SLC25A23	-0.03	0.955	0	0.52	0.117	0	-0.76	0.026	0	0.04	0.952	0	-0.19	0.216	0	-1.04	0.000	-1

ACCEPTED MANUSCRIPT

NRG1	0.60	0.089	0	-0.24	0.614	0	2.40	0.002	1	0.75	0.400	0	1.37	0.000	1	1.07	0.001	1
WDHD1	0.22	0.543	0	-0.30	0.398	0	0.38	0.065	0	1.09	0.012	1	0.03	0.901	0	0.52	0.036	0
ITGA10	-0.79	0.020	0	0.01	0.994	0	-1.09	0.002	-1	-0.17	0.714	0	-0.42	0.005	0	0.02	0.911	0
EFHD2	-0.13	0.803	0	-0.49	0.234	0	0.72	0.012	0	0.43	0.109	0	0.85	0.001	0	1.34	0.000	1
CTHRC1	0.13	0.819	0	0.16	0.771	0	1.46	0.002	1	0.40	0.357	0	0.95	0.003	0	2.50	0.000	1
NCF4	-0.30	0.501	0	-0.14	0.805	0	1.31	0.034	1	0.33	0.466	0	0.37	0.023	0	1.93	0.000	1
AGT	-0.09	0.876	0	-0.04	0.946	0	0.05	0.832	0	-0.01	0.986	0	-0.06	0.733	0	-1.27	0.000	-1
DNAJC2	-0.02	0.976	0	-0.11	0.847	0	0.09	0.633	0	0.54	0.026	0	0.18	0.193	0	1.08	0.000	1
APOBEC1	0.23	0.463	0	0.13	0.740	0	0.72	0.049	0	0.25	0.656	0	0.99	0.000	0	1.16	0.000	1
CAMK2N1	-0.14	0.819	0	-0.24	0.645	0	-0.63	0.019	0	-0.44	0.208	0	-0.10	0.650	0	-2.02	0.000	-1
NT5DC2	-0.79	0.005	0	-0.56	0.078	0	0.79	0.002	0	0.21	0.469	0	0.27	0.145	0	1.00	0.002	1
SHCBP1L	0.30	0.319	0	0.12	0.762	0	0.17	0.660	0	0.04	0.921	0	-0.18	0.240	0	1.09	0.000	1
PTPRZ1	0.14	0.727	0	-0.35	0.291	0	1.17	0.004	1	-0.24	0.703	0	0.70	0.003	0	1.62	0.000	1
DMBT1	-0.06	0.907	0	0.01	0.984	0	-0.15	0.558	0	-0.06	0.939	0	-0.12	0.554	0	1.13	0.000	1
TRAF1	0.11	0.833	0	0.21	0.634	0	0.99	0.017	0	-0.35	0.325	0	0.85	0.000	0	1.30	0.000	1
DHDH	0.24	0.637	0	1.20	0.011	1	-0.66	0.055	0	0.13	0.767	0	-0.59	0.001	0	-0.56	0.033	0
CSRNP1	-0.73	0.092	0	-0.86	0.079	0	0.82	0.115	0	-0.18	0.747	0	1.22	0.000	1	1.10	0.000	1
MMP9	-0.20	0.517	0	-0.02	0.963	0	1.93	0.012	1	-0.59	0.102	0	1.37	0.002	1	1.98	0.000	1
SIT1	0.19	0.762	0	-0.15	0.825	0	0.45	0.033	0	0.37	0.276	0	-0.08	0.727	0	1.08	0.000	1
CEACAM8	0.27	0.646	0	1.02	0.043	1	0.22	0.592	0	-0.02	0.981	0	-0.12	0.628	0	0.62	0.097	0
PTPRK	0.31	0.293	0	0.23	0.513	0	-0.13	0.470	0	0.00	1.000	0	0.25	0.108	0	-1.20	0.000	-1
ZAK	0.08	0.875	0	0.16	0.719	0	0.03	0.886	0	0.33	0.115	0	0.04	0.791	0	-1.16	0.000	-1
IL2RB	-0.14	0.733	0	-0.09	0.848	0	0.26	0.278	0	0.36	0.486	0	0.82	0.000	0	2.51	0.000	1
KCTD16	-0.36	0.566	0	-0.25	0.732	0	-0.52	0.111	0	-1.28	0.008	-1	0.11	0.567	0	0.15	0.204	0
SLC9A2	0.83	0.048	0	0.38	0.476	0	0.52	0.072	0	-1.19	0.226	0	-0.05	0.844	0	-1.68	0.001	-1
NFIL3	0.60	0.023	0	-0.11	0.779	0	1.17	0.003	1	-0.70	0.027	0	0.76	0.002	0	0.05	0.859	0
KRTAP11-1	1.93	0.228	0	0.81	0.698	0	-0.11	0.938	0	-3.13	0.070	0	2.54	0.000	1	-5.52	0.001	-1
TXK	-0.02	0.963	0	0.05	0.888	0	-0.05	0.873	0	0.83	0.031	0	0.18	0.290	0	1.93	0.000	1
FCER1G	-0.27	0.206	0	0.24	0.307	0	1.18	0.006	1	0.55	0.176	0	1.36	0.000	1	0.98	0.007	0
B3GALT2	-0.01	0.989	0	0.78	0.032	0	-0.49	0.041	0	0.43	0.517	0	-0.93	0.000	0	-1.59	0.000	-1
GPRC5D	1.86	0.317	0	0.79	0.749	0	0.51	0.653	0	-3.95	0.045	-1	2.57	0.001	1	-3.69	0.004	-1
ABLIM3	-0.92	0.001	0	-0.04	0.940	0	-0.86	0.010	0	-1.25	0.004	-1	-0.08	0.651	0	-1.22	0.000	-1

ACCEPTED MANUSCRIPT

TLCD2	1.25	0.005	1	0.30	0.614	0	-0.15	0.541	0	1.75	0.001	1	-0.41	0.036	0	0.04	0.869	0
TMOD1	-0.24	0.581	0	0.48	0.235	0	-1.05	0.002	-1	0.06	0.921	0	-0.86	0.002	0	-0.44	0.001	0
CYS1	-0.03	0.953	0	0.35	0.326	0	-0.45	0.029	0	-0.03	0.973	0	-0.50	0.023	0	-1.36	0.001	-1
CXCL13	-0.11	0.928	0	-0.05	0.970	0	1.05	0.282	0	0.84	0.446	0	-1.33	0.001	-1	1.62	0.001	1
TRIM63	-0.72	0.064	0	-0.84	0.057	0	-1.01	0.002	-1	1.00	0.130	0	-0.67	0.017	0	-0.56	0.090	0
NEURL3	-0.29	0.244	0	-0.18	0.546	0	0.41	0.415	0	-0.52	0.234	0	0.09	0.780	0	1.31	0.001	1
SMPX	-0.40	0.134	0	0.42	0.157	0	-0.89	0.007	0	1.02	0.215	0	-1.08	0.002	-1	-0.75	0.008	0
ABCA5	-0.91	0.000	0	-0.16	0.561	0	-1.00	0.003	-1	-1.76	0.000	-1	-1.70	0.000	-1	-2.21	0.000	-1
KIRREL	-0.05	0.912	0	0.08	0.852	0	0.41	0.096	0	-0.15	0.753	0	0.58	0.005	0	-1.33	0.000	-1
CYP7B1	0.76	0.012	0	0.20	0.628	0	1.05	0.008	1	1.11	0.072	0	2.51	0.000	1	3.09	0.000	1
TRPV6	0.26	0.655	0	-0.05	0.948	0	-0.10	0.771	0	-1.09	0.029	-1	-0.27	0.331	0	-1.28	0.009	-1
EFHD1	0.12	0.803	0	0.36	0.335	0	0.02	0.964	0	-1.18	0.003	-1	0.48	0.074	0	-2.04	0.000	-1
ZNF827	0.10	0.699	0	0.14	0.553	0	-0.38	0.053	0	-0.28	0.287	0	-0.24	0.094	0	-1.45	0.000	-1
PCDH18	0.39	0.171	0	0.86	0.010	0	-0.01	0.985	0	0.44	0.421	0	-0.29	0.066	0	-1.08	0.000	-1
ERICH2	0.29	0.583	0	0.41	0.432	0	0.32	0.406	0	-0.24	0.599	0	0.16	0.400	0	1.28	0.000	1
TMEM246	-0.01	0.985	0	-0.15	0.726	0	-0.51	0.101	0	-0.54	0.131	0	-0.48	0.181	0	-1.32	0.000	-1
TMOD2	0.01	0.988	0	0.40	0.326	0	0.13	0.443	0	0.00	0.997	0	-0.17	0.157	0	-1.12	0.002	-1
VSTM5	-0.37	0.262	0	-0.41	0.254	0	0.37	0.153	0	0.19	0.596	0	0.97	0.000	0	1.08	0.001	1
SLC7A10	0.29	0.566	0	0.92	0.047	0	-0.78	0.021	0	-0.14	0.856	0	-0.24	0.275	0	-1.36	0.000	-1
HMSD	-0.31	0.450	0	-0.23	0.623	0	-0.33	0.331	0	-0.51	0.372	0	-0.03	0.897	0	1.77	0.002	1
PTPRJ	-0.23	0.334	0	-0.10	0.759	0	0.50	0.077	0	-0.21	0.489	0	0.39	0.035	0	1.09	0.003	1
GALNS	0.15	0.729	0	0.10	0.851	0	0.71	0.046	0	0.74	0.004	0	0.20	0.152	0	1.49	0.000	1
CEP55	0.42	0.232	0	-0.01	0.991	0	0.92	0.007	0	1.10	0.005	1	0.47	0.009	0	0.65	0.029	0
GLIPR1	0.11	0.842	0	-0.01	0.983	0	0.75	0.073	0	0.52	0.125	0	0.01	0.969	0	1.82	0.000	1
UTP18	0.03	0.942	0	-0.08	0.787	0	0.12	0.503	0	0.21	0.247	0	-0.07	0.772	0	-1.15	0.000	-1
ST3GAL4	0.37	0.192	0	0.28	0.385	0	0.54	0.077	0	-0.18	0.651	0	1.17	0.000	1	0.33	0.021	0
N4BP1	0.03	0.947	0	-0.07	0.885	0	0.24	0.161	0	-0.14	0.462	0	0.67	0.004	0	1.06	0.000	1
SLC6A13	0.56	0.315	0	0.31	0.659	0	-0.37	0.082	0	-1.23	0.016	-1	0.04	0.869	0	-0.87	0.074	0
SMOC2	-0.21	0.347	0	0.04	0.905	0	-0.50	0.094	0	-0.62	0.090	0	-0.49	0.005	0	-1.01	0.000	-1
ST8SIA6	0.50	0.067	0	0.24	0.502	0	-0.53	0.011	0	-0.06	0.863	0	-0.33	0.242	0	-1.44	0.001	-1
CXCL14	0.40	0.391	0	-0.03	0.970	0	1.43	0.009	1	-1.02	0.014	-1	0.43	0.105	0	-1.71	0.000	-1
CLEC4A	0.01	0.989	0	0.16	0.851	0	1.26	0.017	1	0.82	0.156	0	0.27	0.219	0	2.57	0.000	1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

SERPINA9	0.68	0.015	0	0.08	0.859	0	0.88	0.042	0	-0.27	0.844	0	1.04	0.003	1	2.45	0.002	1
CENPK	0.21	0.543	0	-0.04	0.937	0	0.27	0.420	0	1.17	0.045	1	-0.37	0.100	0	0.47	0.032	0
PF4	-0.17	0.783	0	-0.23	0.705	0	1.08	0.004	1	1.97	0.009	1	-0.70	0.068	0	-0.07	0.785	0
SIX1	-0.14	0.762	0	0.47	0.218	0	-0.81	0.006	0	0.05	0.948	0	-1.08	0.000	-1	-0.76	0.042	0
DPYD	0.01	0.980	0	0.22	0.511	0	-0.77	0.011	0	-0.26	0.604	0	-0.32	0.056	0	-1.39	0.001	-1
THBD	0.35	0.139	0	0.27	0.320	0	0.93	0.013	0	0.70	0.036	0	1.17	0.000	1	-0.18	0.193	0
GPNMB	-0.17	0.641	0	0.05	0.925	0	-0.69	0.035	0	-1.34	0.001	-1	-0.36	0.063	0	-0.29	0.552	0
ADIPOQ	0.44	0.166	0	0.76	0.030	0	-0.40	0.207	0	0.86	0.247	0	-1.13	0.053	0	-1.54	0.000	-1
KLRG1	-0.02	0.975	0	0.24	0.583	0	1.25	0.042	1	0.30	0.455	0	0.02	0.958	0	2.44	0.000	1
AMOTL1	-0.23	0.310	0	0.07	0.816	0	-0.47	0.013	0	-0.36	0.077	0	-0.17	0.271	0	-1.11	0.000	-1
RASSF4	-0.04	0.942	0	-0.02	0.978	0	0.30	0.056	0	0.09	0.852	0	-0.03	0.900	0	1.10	0.005	1
TESC	-0.46	0.166	0	-0.64	0.078	0	-0.91	0.016	0	-0.69	0.090	0	-0.99	0.000	0	-1.88	0.000	-1
SGPP2	2.04	0.000	1	-0.45	0.205	0	0.29	0.402	0	2.89	0.000	1	-0.42	0.105	0	0.79	0.048	0
SDPR	0.30	0.319	0	0.54	0.079	0	-0.37	0.072	0	0.44	0.090	0	-0.60	0.006	0	-1.08	0.000	-1
MS4A1	-0.03	0.943	0	0.01	0.986	0	-0.11	0.730	0	0.00	0.993	0	0.06	0.815	0	1.48	0.003	1
FAM19A5	0.04	0.947	0	0.01	0.992	0	0.11	0.691	0	-0.33	0.581	0	-0.14	0.471	0	-1.16	0.000	-1
GPC6	0.03	0.957	0	0.40	0.296	0	-0.38	0.105	0	-0.17	0.532	0	-0.13	0.509	0	-1.27	0.000	-1
ARHGAP25	-0.06	0.876	0	0.12	0.730	0	0.36	0.241	0	-0.19	0.484	0	-0.32	0.081	0	1.08	0.000	1
PLA2G16	-0.01	0.978	0	0.55	0.062	0	-0.59	0.023	0	-1.05	0.004	-1	-1.16	0.000	-1	-0.71	0.000	0
BACH2	0.29	0.432	0	0.15	0.735	0	-0.30	0.144	0	-0.32	0.634	0	-0.01	0.968	0	-1.46	0.000	-1
OCA2	0.47	0.314	0	-0.03	0.968	0	-0.09	0.804	0	-1.04	0.183	0	-0.19	0.206	0	-1.87	0.035	-1
GSDMC	-0.04	0.975	0	-0.79	0.278	0	0.33	0.571	0	2.95	0.016	1	2.45	0.000	1	5.63	0.000	1
KRTAP8-1	2.15	0.249	0	1.13	0.625	0	0.22	0.887	0	-4.20	0.063	0	4.65	0.001	1	-6.29	0.000	-1
RNASE3	-0.17	0.839	0	0.27	0.728	0	-0.05	0.924	0	0.88	0.301	0	0.65	0.211	0	-1.40	0.006	-1
C10orf90	-0.60	0.049	0	-0.04	0.946	0	-1.16	0.002	-1	-1.22	0.001	-1	-0.89	0.000	0	-1.19	0.000	-1
CD72	-0.23	0.568	0	0.19	0.668	0	0.25	0.198	0	0.25	0.684	0	-0.07	0.794	0	1.58	0.000	1
STAT4	-0.05	0.961	0	0.38	0.583	0	1.11	0.073	0	0.29	0.568	0	0.46	0.002	0	2.85	0.000	1
ACP2	-0.14	0.616	0	0.16	0.568	0	0.60	0.016	0	-0.01	0.973	0	0.14	0.578	0	1.59	0.000	1
ADGRA3	0.29	0.252	0	0.32	0.248	0	-0.47	0.056	0	-0.95	0.001	0	0.01	0.980	0	-2.24	0.000	-1
REEP6	0.22	0.375	0	0.45	0.065	0	-0.67	0.056	0	0.75	0.054	0	-0.79	0.000	0	-1.13	0.001	-1
MMP19	0.21	0.347	0	0.16	0.535	0	1.89	0.005	1	1.70	0.037	1	1.45	0.000	1	0.63	0.100	0
VCAN	0.76	0.026	0	0.45	0.255	0	2.02	0.001	1	1.75	0.026	1	1.67	0.000	1	1.01	0.008	1

ACCEPTED MANUSCRIPT

PXDC1	0.41	0.089	0	0.10	0.783	0	0.43	0.060	0	0.43	0.156	0	1.48	0.000	1	0.01	0.961	0
KITLG	0.15	0.616	0	0.45	0.087	0	-0.04	0.843	0	0.23	0.601	0	0.12	0.621	0	-1.17	0.000	-1
KLK12	0.21	0.606	0	-0.31	0.415	0	0.61	0.044	0	0.46	0.129	0	0.52	0.032	0	2.10	0.000	1
TGFB2	-0.07	0.808	0	0.32	0.162	0	-0.55	0.022	0	0.02	0.963	0	-0.53	0.001	0	-1.27	0.000	-1
NLRP10	-0.72	0.007	0	0.15	0.683	0	-0.15	0.565	0	-0.13	0.799	0	0.37	0.122	0	-1.27	0.000	-1
HK2	0.05	0.873	0	0.06	0.834	0	0.14	0.470	0	0.85	0.008	0	1.12	0.000	1	0.04	0.786	0
FSTL1	0.71	0.001	0	0.63	0.009	0	1.10	0.003	1	0.77	0.091	0	0.84	0.015	0	-0.15	0.334	0
DRP2	-0.17	0.505	0	0.35	0.157	0	-0.88	0.006	0	-0.35	0.345	0	-0.81	0.000	0	-1.21	0.000	-1
CLEC6A	-0.14	0.834	0	-0.76	0.118	0	2.12	0.010	1	-0.05	0.963	0	1.03	0.001	1	2.90	0.000	1
TNIK	-0.24	0.539	0	0.12	0.808	0	-0.27	0.262	0	-0.53	0.034	0	0.24	0.062	0	-1.26	0.000	-1
C10orf10	-0.99	0.002	0	-1.03	0.005	-1	-1.10	0.040	-1	-0.46	0.503	0	-0.33	0.014	0	1.11	0.004	1
PDIA6	0.38	0.069	0	0.33	0.178	0	0.36	0.087	0	0.28	0.157	0	0.09	0.584	0	1.30	0.000	1
COL3A1	0.31	0.549	0	-0.17	0.778	0	0.94	0.005	0	0.93	0.057	0	1.50	0.000	1	-0.15	0.078	0
GPR31	-0.14	0.835	0	-0.01	0.990	0	0.25	0.460	0	0.53	0.299	0	0.09	0.632	0	2.61	0.000	1
TPM1	0.04	0.905	0	0.19	0.478	0	-0.39	0.040	0	-0.33	0.457	0	-0.52	0.002	0	-1.77	0.000	-1
CHGA	0.34	0.486	0	-0.30	0.576	0	0.32	0.260	0	1.43	0.003	1	0.59	0.013	0	0.84	0.000	0
IRS1	-0.68	0.003	0	-0.29	0.496	0	-0.77	0.033	0	-0.18	0.587	0	-1.28	0.000	-1	-1.24	0.000	-1
FAM49B	0.03	0.922	0	-0.03	0.937	0	0.73	0.023	0	0.46	0.042	0	0.92	0.001	0	1.08	0.000	1
APOBEC3G	-0.23	0.502	0	0.11	0.801	0	0.20	0.227	0	0.54	0.130	0	0.32	0.227	0	1.23	0.004	1
APOBEC3F	-0.23	0.502	0	0.11	0.801	0	0.20	0.227	0	0.54	0.130	0	0.32	0.227	0	1.23	0.004	1
RETNLB	-0.64	0.352	0	0.32	0.706	0	-0.86	0.367	0	2.29	0.026	1	-1.61	0.013	-1	-3.83	0.000	-1
KRT31	2.08	0.290	0	0.81	0.759	0	0.02	0.989	0	-3.54	0.054	0	3.38	0.000	1	-5.23	0.001	-1
LCK	-0.25	0.498	0	-0.07	0.889	0	0.13	0.711	0	0.16	0.580	0	0.51	0.002	0	2.13	0.000	1
LIMD2	0.21	0.534	0	0.19	0.616	0	0.63	0.034	0	0.04	0.920	0	0.24	0.095	0	2.30	0.000	1
CCL2	0.17	0.719	0	0.39	0.333	0	1.40	0.020	1	1.70	0.011	1	3.15	0.002	1	2.29	0.001	1
SOX9	0.41	0.138	0	0.49	0.114	0	-0.56	0.046	0	-0.45	0.206	0	-0.15	0.387	0	-1.22	0.000	-1
SLC2A4	-0.41	0.329	0	0.30	0.542	0	-0.76	0.039	0	0.54	0.462	0	-0.65	0.008	0	-1.42	0.000	-1
ADH1A	-0.98	0.001	0	-0.22	0.631	0	-0.62	0.040	0	-0.78	0.072	0	-1.70	0.000	-1	-0.92	0.016	0
ADH1B	-0.98	0.001	0	-0.22	0.631	0	-0.62	0.040	0	-0.78	0.072	0	-1.70	0.000	-1	-0.92	0.016	0
ADH1C	-0.98	0.001	0	-0.22	0.631	0	-0.62	0.040	0	-0.78	0.072	0	-1.70	0.000	-1	-0.92	0.016	0
KLK13	1.57	0.000	1	-1.01	0.012	-1	2.82	0.000	1	1.88	0.005	1	3.25	0.000	1	3.89	0.000	1
TRPC4	0.08	0.903	0	0.12	0.844	0	-0.61	0.085	0	-1.13	0.038	-1	-0.22	0.207	0	-0.93	0.001	0

FAM72C	0.06	0.911	0	0.16	0.725	0	-0.18	0.619	0	-0.34	0.578	0	-0.15	0.673	0	1.17	0.001	1
FAM72B	0.06	0.911	0	0.16	0.725	0	-0.18	0.619	0	-0.34	0.578	0	-0.15	0.673	0	1.17	0.001	1
N4BP2L1	-0.63	0.028	0	-0.23	0.539	0	-0.73	0.005	0	-0.51	0.199	0	-0.36	0.007	0	1.33	0.000	1
KLRC3	0.84	0.020	0	0.27	0.578	0	0.00	0.988	0	-0.49	0.467	0	1.52	0.000	1	2.82	0.000	1
KLRC2	0.84	0.020	0	0.27	0.578	0	0.00	0.988	0	-0.49	0.467	0	1.52	0.000	1	2.82	0.000	1
KLRC1	0.84	0.020	0	0.27	0.578	0	0.00	0.988	0	-0.49	0.467	0	1.52	0.000	1	2.82	0.000	1
GJA1	1.43	0.002	1	0.65	0.204	0	0.69	0.004	0	-0.21	0.500	0	0.77	0.000	0	-0.43	0.317	0
BAK1	0.38	0.504	0	-0.02	0.982	0	0.49	0.029	0	-0.14	0.747	0	1.32	0.000	1	1.20	0.000	1
HHATL	-0.37	0.467	0	-0.21	0.738	0	-0.56	0.067	0	0.14	0.880	0	-1.03	0.000	-1	-0.94	0.008	0
TPX2	0.67	0.071	0	0.16	0.768	0	1.36	0.000	1	0.70	0.087	0	0.83	0.000	0	1.12	0.001	1
COL1A2	0.08	0.840	0	-0.04	0.939	0	0.53	0.111	0	0.65	0.192	0	1.42	0.000	1	-0.23	0.013	0
MATN2	0.13	0.547	0	0.09	0.719	0	0.44	0.024	0	0.24	0.229	0	-0.10	0.753	0	-1.01	0.000	-1
TLR8	0.22	0.586	0	0.28	0.485	0	1.47	0.013	1	0.97	0.181	0	0.49	0.011	0	0.84	0.030	0
MYL9	0.17	0.543	0	0.10	0.753	0	0.69	0.019	0	-0.17	0.571	0	0.49	0.045	0	-1.40	0.000	-1
LPIN2	0.63	0.508	0	1.42	0.110	0	0.73	0.171	0	-0.67	0.467	0	0.38	0.031	0	1.00	0.000	1
SLC5A3	0.19	0.600	0	0.33	0.335	0	-0.06	0.725	0	0.02	0.968	0	0.11	0.506	0	-1.37	0.000	-1
ACER2	0.00	0.999	0	-0.50	0.140	0	-0.04	0.905	0	0.08	0.807	0	-0.67	0.001	0	-1.18	0.000	-1
CES1	-0.32	0.483	0	0.33	0.495	0	-1.22	0.004	-1	0.02	0.963	0	-2.61	0.000	-1	-1.91	0.000	-1
CPS1	0.73	0.039	0	0.24	0.611	0	-0.07	0.847	0	-0.24	0.800	0	0.05	0.717	0	-2.22	0.020	-1
SMIM3	0.02	0.960	0	0.08	0.836	0	0.67	0.079	0	0.76	0.013	0	1.56	0.000	1	1.66	0.000	1
ARHGAP30	0.07	0.872	0	-0.16	0.670	0	0.52	0.038	0	0.17	0.719	0	0.40	0.019	0	1.24	0.001	1
HTR7	-0.04	0.934	0	-0.18	0.650	0	0.96	0.008	0	0.32	0.432	0	0.50	0.001	0	1.80	0.000	1
CD5L	-0.16	0.646	0	-0.23	0.480	0	-0.21	0.707	0	0.54	0.210	0	0.09	0.794	0	3.43	0.000	1
APOBR	-0.19	0.649	0	-0.13	0.780	0	0.30	0.391	0	0.23	0.668	0	0.13	0.437	0	1.61	0.001	1
AKR1C4	-0.61	0.533	0	0.18	0.893	0	0.42	0.473	0	0.15	0.857	0	0.19	0.167	0	-2.09	0.000	-1
AKR1C3	-0.61	0.533	0	0.18	0.893	0	0.42	0.473	0	0.15	0.857	0	0.19	0.167	0	-2.09	0.000	-1
AKR1C1	-0.61	0.533	0	0.18	0.893	0	0.42	0.473	0	0.15	0.857	0	0.19	0.167	0	-2.09	0.000	-1
TBX15	0.01	0.983	0	0.68	0.025	0	-0.24	0.268	0	1.04	0.020	1	-0.32	0.105	0	-0.69	0.009	0
CDK5R1	-0.47	0.426	0	-0.56	0.362	0	-0.20	0.423	0	0.04	0.941	0	0.25	0.095	0	1.64	0.000	1
IGLL5	0.17	0.669	0	0.26	0.500	0	-0.04	0.907	0	-0.29	0.326	0	-0.11	0.430	0	1.05	0.004	1
IGLC1	0.17	0.669	0	0.26	0.500	0	-0.04	0.907	0	-0.29	0.326	0	-0.11	0.430	0	1.05	0.004	1
IGLL1	0.17	0.669	0	0.26	0.500	0	-0.04	0.907	0	-0.29	0.326	0	-0.11	0.430	0	1.05	0.004	1

ACCEPTED MANUSCRIPT

IL36B	0.20	0.727	0	-0.70	0.137	0	1.24	0.001	1	2.17	0.000	1	1.46	0.000	1	2.14	0.000	1
MAP4K5	-0.12	0.690	0	-0.22	0.449	0	-0.09	0.677	0	0.28	0.140	0	-0.06	0.717	0	1.30	0.000	1
ENTPD7	0.06	0.877	0	-0.13	0.686	0	0.45	0.232	0	0.40	0.222	0	0.84	0.003	0	1.06	0.000	1
PARP14	0.13	0.754	0	0.60	0.065	0	0.48	0.055	0	0.57	0.088	0	3.48	0.000	1	0.88	0.008	0
RHO	-0.12	0.799	0	-0.08	0.869	0	-0.55	0.009	0	-1.08	0.003	-1	-0.43	0.039	0	-0.30	0.059	0
PRIMA1	-0.21	0.712	0	0.42	0.396	0	-0.45	0.090	0	-0.25	0.504	0	-0.26	0.134	0	-1.80	0.000	-1
FST	0.05	0.914	0	0.26	0.457	0	0.16	0.546	0	-0.09	0.790	0	1.09	0.000	1	-0.36	0.059	0
KLK8	0.28	0.546	0	-0.57	0.185	0	1.23	0.000	1	0.64	0.076	0	1.06	0.000	1	1.05	0.000	1
GFRA1	0.28	0.184	0	0.46	0.046	0	1.11	0.030	1	-0.34	0.263	0	0.46	0.006	0	0.32	0.084	0
ZNF618	0.48	0.221	0	0.32	0.495	0	0.02	0.962	0	-1.49	0.015	-1	0.16	0.318	0	-1.27	0.008	-1
GPR84	0.26	0.698	0	0.24	0.731	0	0.89	0.089	0	0.01	0.985	0	0.46	0.028	0	2.41	0.000	1
CYP2J2	-0.36	0.183	0	0.02	0.968	0	-0.91	0.004	0	-0.59	0.045	0	-1.05	0.000	-1	-0.58	0.025	0
GPR85	0.09	0.847	0	-0.05	0.927	0	0.38	0.163	0	0.25	0.512	0	0.02	0.950	0	1.68	0.000	1
GSDMC	0.84	0.495	0	-1.06	0.400	0	4.99	0.000	1	4.36	0.000	1	5.35	0.000	1	3.53	0.000	1
HLA-G	0.02	0.966	0	0.30	0.415	0	0.57	0.197	0	0.38	0.457	0	1.43	0.000	1	0.03	0.924	0
HLA-C	0.02	0.966	0	0.30	0.415	0	0.57	0.197	0	0.38	0.457	0	1.43	0.000	1	0.03	0.924	0
HLA-A	0.02	0.966	0	0.30	0.415	0	0.57	0.197	0	0.38	0.457	0	1.43	0.000	1	0.03	0.924	0
FAT4	0.21	0.615	0	0.41	0.267	0	0.39	0.099	0	1.00	0.006	1	0.03	0.929	0	-1.12	0.001	-1
ID4	0.00	0.998	0	-0.06	0.825	0	-0.66	0.025	0	0.24	0.593	0	-0.10	0.646	0	-1.32	0.000	-1
CASQ1	0.05	0.925	0	0.49	0.175	0	-1.34	0.007	-1	0.67	0.715	0	-1.32	0.002	-1	-0.60	0.065	0
SYT17	0.08	0.853	0	0.20	0.591	0	0.08	0.726	0	-0.59	0.165	0	0.21	0.163	0	-1.23	0.001	-1
TCHHL1	2.70	0.165	0	1.00	0.703	0	0.79	0.326	0	-2.68	0.110	0	1.76	0.000	1	-3.09	0.023	-1
RPTN	1.90	0.000	1	0.03	0.976	0	4.57	0.000	1	2.50	0.000	1	4.88	0.000	1	2.71	0.000	1
PARD3B	-0.01	0.986	0	0.29	0.250	0	-0.45	0.064	0	-0.53	0.039	0	-0.31	0.039	0	-1.68	0.000	-1
CD8A	-0.18	0.711	0	0.09	0.878	0	0.14	0.551	0	0.83	0.064	0	0.77	0.000	0	2.40	0.000	1
COL4A6	-0.53	0.037	0	-0.40	0.173	0	-1.12	0.002	-1	-0.74	0.011	0	-0.14	0.362	0	-2.32	0.000	-1
KLB	0.55	0.392	0	0.47	0.519	0	0.26	0.667	0	-0.07	0.899	0	-0.15	0.356	0	-1.46	0.000	-1
CSDC2	0.49	0.304	0	0.16	0.807	0	-0.02	0.967	0	-1.42	0.055	0	0.69	0.010	0	-1.82	0.024	-1
C1QC	-0.14	0.820	0	-0.40	0.409	0	1.17	0.011	1	0.46	0.335	0	0.35	0.201	0	0.56	0.106	0
DDIT4	-1.23	0.004	-1	-1.42	0.007	-1	-0.24	0.378	0	-0.38	0.251	0	0.03	0.902	0	-0.10	0.695	0
NFE2	0.08	0.905	0	-0.09	0.891	0	0.20	0.696	0	-0.28	0.502	0	0.28	0.140	0	1.39	0.000	1
EVL	0.40	0.049	0	0.09	0.763	0	0.53	0.052	0	-0.03	0.960	0	0.32	0.017	0	1.12	0.000	1

ACCEPTED MANUSCRIPT

ENAH	0.36	0.060	0	-0.07	0.813	0	0.78	0.012	0	0.68	0.005	0	0.72	0.000	0	1.12	0.000	1
PARPBP	0.21	0.530	0	0.02	0.976	0	0.94	0.007	0	0.86	0.043	0	0.32	0.094	0	1.13	0.000	1
LAMA2	0.17	0.467	0	0.40	0.081	0	0.00	0.990	0	0.62	0.173	0	-0.21	0.150	0	-1.15	0.000	-1
PFKFB4	0.15	0.643	0	-0.22	0.478	0	0.58	0.019	0	0.60	0.023	0	0.68	0.031	0	1.45	0.000	1
CFHR3	0.20	0.621	0	0.38	0.295	0	0.66	0.017	0	1.08	0.145	0	0.75	0.004	0	-1.00	0.019	-1
PLAC9	0.80	0.002	0	1.15	0.000	1	0.17	0.356	0	0.16	0.742	0	-0.64	0.435	0	-0.73	0.002	0
PNPLA5	0.76	0.004	0	-0.01	0.978	0	-0.75	0.014	0	1.24	0.021	1	-0.87	0.002	0	-0.48	0.137	0
DUSP8	0.08	0.907	0	0.00	0.999	0	-0.40	0.163	0	-0.95	0.005	0	0.16	0.257	0	-1.46	0.000	-1
CCR4	-0.01	0.981	0	0.04	0.942	0	-0.31	0.341	0	-1.34	0.009	-1	-0.07	0.779	0	0.36	0.046	0
REL	0.12	0.879	0	0.12	0.879	0	-0.06	0.759	0	0.16	0.425	0	0.26	0.086	0	2.37	0.000	1
IFIH1	0.00	0.997	0	0.24	0.578	0	-0.19	0.338	0	0.42	0.193	0	1.94	0.000	1	0.89	0.008	0
SVOPL	-0.49	0.019	0	-0.20	0.435	0	-0.46	0.050	0	-0.08	0.813	0	-0.31	0.056	0	-2.20	0.000	-1
SIGLEC12	0.04	0.945	0	0.07	0.905	0	1.12	0.094	0	-0.36	0.542	0	0.30	0.315	0	3.16	0.000	1
SIGLEC7	0.04	0.945	0	0.07	0.905	0	1.12	0.094	0	-0.36	0.542	0	0.30	0.315	0	3.16	0.000	1
SIGLEC8	0.04	0.945	0	0.07	0.905	0	1.12	0.094	0	-0.36	0.542	0	0.30	0.315	0	3.16	0.000	1
FMO2	-0.62	0.042	0	-0.32	0.397	0	-1.41	0.002	-1	-0.90	0.024	0	-2.51	0.000	-1	-2.33	0.000	-1
NFIA	-0.10	0.706	0	0.20	0.418	0	-0.18	0.255	0	0.17	0.501	0	-0.58	0.009	0	-1.13	0.000	-1
PPIL6	0.04	0.957	0	-0.25	0.597	0	-0.44	0.189	0	-0.99	0.019	0	-0.59	0.063	0	-1.11	0.000	-1
RAB11FIP4	-0.98	0.000	0	-0.46	0.111	0	-1.14	0.006	-1	-1.46	0.002	-1	-0.63	0.000	0	-1.52	0.000	-1
IL10RA	-0.29	0.534	0	-0.03	0.965	0	0.71	0.053	0	-0.22	0.720	0	0.99	0.002	0	2.12	0.000	1
TMEM26	-0.03	0.950	0	0.02	0.953	0	0.56	0.044	0	0.50	0.335	0	0.34	0.068	0	1.02	0.006	1
RPAP2	-0.15	0.496	0	-0.23	0.259	0	-0.12	0.521	0	-0.07	0.867	0	-0.27	0.246	0	1.00	0.000	1
GLIPR2	0.75	0.043	0	0.15	0.789	0	1.58	0.007	1	0.71	0.080	0	0.29	0.269	0	1.20	0.001	1
FZD2	0.77	0.151	0	0.51	0.436	0	0.14	0.712	0	-0.64	0.116	0	0.15	0.292	0	-1.17	0.000	-1
FAM162A	0.67	0.029	0	-0.01	0.988	0	1.33	0.001	1	1.01	0.001	1	1.10	0.000	1	0.86	0.000	0
KRT12	0.30	0.484	0	-0.12	0.826	0	-0.12	0.684	0	-0.53	0.314	0	-0.20	0.177	0	-1.01	0.000	-1
WISP2	-0.02	0.980	0	0.12	0.853	0	1.59	0.005	1	0.26	0.769	0	0.15	0.314	0	1.07	0.028	1
MLF1	0.21	0.708	0	0.43	0.368	0	-0.40	0.118	0	-0.70	0.398	0	-0.71	0.011	0	-1.32	0.000	-1
NFKBIZ	0.75	0.001	0	-0.25	0.309	0	0.48	0.217	0	0.17	0.479	0	0.42	0.005	0	1.75	0.000	1
COL8A2	0.16	0.788	0	0.25	0.640	0	-0.37	0.077	0	-0.25	0.690	0	-0.16	0.212	0	-1.18	0.000	-1
PILRA	-0.35	0.544	0	-0.08	0.921	0	1.22	0.045	1	0.98	0.052	0	0.80	0.004	0	2.54	0.000	1
BDH1	0.47	0.034	0	0.03	0.950	0	0.16	0.480	0	0.84	0.014	0	0.15	0.374	0	1.06	0.050	1

ACCEPTED MANUSCRIPT

OPCML	0.38	0.240	0	0.77	0.027	0	-0.08	0.888	0	-0.13	0.751	0	-0.39	0.045	0	-1.89	0.001	-1
GABRP	1.98	0.043	1	0.82	0.523	0	0.05	0.946	0	-2.33	0.084	0	1.29	0.003	1	-3.02	0.001	-1
CD24	0.18	0.668	0	0.11	0.823	0	0.75	0.002	0	0.63	0.041	0	0.33	0.023	0	1.16	0.000	1
ACTN3	-0.38	0.437	0	0.14	0.833	0	-1.40	0.005	-1	1.27	0.527	0	-1.11	0.023	-1	-0.67	0.020	0
SLFN12L	0.14	0.759	0	-0.01	0.981	0	1.63	0.008	1	1.17	0.007	1	3.30	0.000	1	1.75	0.002	1
GALNT15	-0.27	0.568	0	-0.01	0.989	0	-1.47	0.004	-1	-0.04	0.970	0	-0.44	0.020	0	-1.24	0.007	-1
CHAC1	1.22	0.359	0	0.41	0.824	0	0.68	0.051	0	-2.16	0.041	-1	0.93	0.003	0	-0.95	0.072	0
CCDC71L	-0.22	0.517	0	-0.32	0.337	0	0.27	0.112	0	0.07	0.880	0	1.58	0.000	1	0.76	0.000	0
NOTUM	-0.43	0.296	0	-0.21	0.686	0	-1.03	0.008	-1	0.50	0.499	0	0.12	0.508	0	-1.42	0.000	-1
MYD88	-0.02	0.945	0	-0.22	0.318	0	0.62	0.028	0	0.54	0.140	0	1.39	0.000	1	1.03	0.000	1
SOSTDC1	0.58	0.009	0	0.55	0.030	0	-0.15	0.614	0	-0.45	0.372	0	-0.13	0.668	0	-1.11	0.000	-1
EPB41L4B	-0.14	0.572	0	-0.07	0.807	0	-0.58	0.024	0	-0.49	0.041	0	-0.44	0.009	0	-1.17	0.000	-1
TMEM182	-0.22	0.714	0	0.70	0.157	0	-1.09	0.003	-1	0.73	0.496	0	-1.12	0.004	-1	-0.88	0.002	0
CLDN10	0.18	0.633	0	0.05	0.916	0	0.07	0.778	0	-0.69	0.033	0	0.01	0.961	0	-1.45	0.000	-1
XYLT2	0.06	0.931	0	-0.35	0.502	0	-0.06	0.802	0	0.10	0.769	0	-0.42	0.119	0	1.06	0.000	1
PTGER3	0.16	0.735	0	0.70	0.070	0	-0.66	0.014	0	-0.18	0.799	0	0.14	0.585	0	-1.32	0.001	-1
CD274	0.26	0.554	0	0.59	0.147	0	0.15	0.771	0	1.08	0.009	1	2.87	0.000	1	1.84	0.000	1
HIST1H2BM	0.48	0.048	0	0.16	0.623	0	0.32	0.082	0	0.46	0.022	0	-0.09	0.795	0	-1.01	0.000	-1
POU2AF1	-0.23	0.566	0	-0.18	0.692	0	0.24	0.276	0	-0.10	0.884	0	-0.02	0.955	0	3.44	0.000	1
CKMT2	-0.04	0.922	0	0.55	0.060	0	-1.39	0.004	-1	1.11	0.430	0	-1.21	0.005	-1	-1.12	0.016	-1
AKR1D1	-0.27	0.458	0	-0.36	0.318	0	2.69	0.000	1	2.51	0.009	1	3.25	0.000	1	1.02	0.029	1
STC2	-0.43	0.197	0	0.03	0.964	0	0.14	0.615	0	0.18	0.813	0	0.05	0.831	0	1.23	0.000	1
KRTAP7-1	1.60	0.383	0	0.65	0.791	0	0.26	0.842	0	-3.58	0.071	0	4.43	0.000	1	-4.98	0.001	-1
KRT73	2.82	0.019	1	0.94	0.551	0	0.79	0.366	0	-1.70	0.255	0	2.46	0.000	1	-4.48	0.002	-1
DNAJC19	0.22	0.570	0	0.50	0.326	0	-0.29	0.152	0	0.35	0.072	0	-0.19	0.183	0	-1.11	0.000	-1
PNP	0.07	0.934	0	-0.11	0.889	0	-0.07	0.895	0	-0.04	0.952	0	1.32	0.000	1	0.76	0.006	0
PDE12	0.18	0.571	0	-0.47	0.103	0	0.57	0.012	0	0.96	0.001	0	0.52	0.001	0	1.28	0.000	1
EMC9	0.00	0.997	0	-0.07	0.880	0	-0.67	0.046	0	0.62	0.091	0	-1.25	0.000	-1	0.08	0.712	0
CCBL1	0.11	0.793	0	-0.08	0.853	0	0.22	0.177	0	-0.20	0.593	0	0.37	0.112	0	-1.92	0.000	-1
HEYL	0.25	0.678	0	0.23	0.722	0	0.37	0.103	0	-0.57	0.161	0	0.23	0.234	0	-1.19	0.028	-1
IL1RAP	-0.11	0.597	0	0.21	0.703	0	1.02	0.134	0	-0.52	0.251	0	0.32	0.042	0	1.02	0.000	1
SNCG	0.02	0.973	0	0.48	0.226	0	-0.84	0.008	0	0.47	0.314	0	-0.77	0.004	0	-1.54	0.000	-1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

IGSF6	0.19	0.742	0	0.67	0.156	0	1.16	0.039	1	0.33	0.543	0	0.17	0.465	0	1.92	0.001	1
DEGS1	0.22	0.639	0	0.00	0.995	0	-0.46	0.454	0	3.04	0.035	1	0.21	0.555	0	-0.21	0.711	0
SYDE2	-0.20	0.571	0	-0.14	0.732	0	-0.43	0.084	0	-0.24	0.366	0	0.00	0.993	0	-1.05	0.000	-1
PMEL	1.01	0.022	1	-0.18	0.793	0	-0.01	0.981	0	-0.88	0.265	0	-0.97	0.001	0	-1.61	0.019	-1
LAPTM5	-0.23	0.461	0	-0.20	0.559	0	0.88	0.036	0	0.43	0.269	0	0.67	0.016	0	1.17	0.005	1
KRT83	1.91	0.243	0	0.71	0.749	0	0.57	0.580	0	-3.40	0.029	-1	3.94	0.000	1	-3.72	0.005	-1
KRT81	1.91	0.243	0	0.71	0.749	0	0.57	0.580	0	-3.40	0.029	-1	3.94	0.000	1	-3.72	0.005	-1
KRT86	1.91	0.243	0	0.71	0.749	0	0.57	0.580	0	-3.40	0.029	-1	3.94	0.000	1	-3.72	0.005	-1
GPRC5A	0.62	0.463	0	0.37	0.718	0	1.02	0.053	0	-1.66	0.039	-1	0.19	0.676	0	-1.20	0.085	0
PHLDA1	0.07	0.911	0	-0.23	0.658	0	0.38	0.251	0	-0.01	0.989	0	1.55	0.000	1	-0.19	0.389	0
DECR1	0.24	0.394	0	0.12	0.727	0	-0.28	0.191	0	0.10	0.741	0	-1.16	0.000	-1	-1.03	0.000	-1
CD160	-0.18	0.624	0	-0.08	0.859	0	-0.17	0.610	0	0.00	1.000	0	0.08	0.633	0	1.97	0.000	1
ACOX2	0.99	0.001	0	0.75	0.025	0	-0.30	0.241	0	1.54	0.007	1	-0.55	0.035	0	-0.44	0.092	0
TRPC3	0.04	0.957	0	0.19	0.729	0	-0.47	0.028	0	0.20	0.721	0	-0.14	0.510	0	-1.32	0.000	-1
DRAM1	0.32	0.353	0	0.54	0.119	0	0.61	0.059	0	1.00	0.095	0	0.52	0.023	0	1.03	0.000	1
C15orf48	1.41	0.008	1	-0.02	0.989	0	0.77	0.073	0	1.48	0.040	1	2.63	0.000	1	1.94	0.001	1
ATF3	1.09	0.025	1	0.18	0.807	0	-0.24	0.807	0	0.22	0.716	0	1.62	0.000	1	0.97	0.005	0
PNP	-0.02	0.975	0	-0.06	0.896	0	0.03	0.908	0	0.12	0.783	0	1.38	0.000	1	0.60	0.015	0
CD209	0.14	0.785	0	0.40	0.337	0	0.73	0.040	0	-0.26	0.816	0	-0.47	0.064	0	-1.17	0.020	-1
RBM20	0.06	0.903	0	0.01	0.993	0	0.11	0.692	0	-0.04	0.952	0	-0.03	0.862	0	-1.58	0.000	-1
SLFN12L	-0.30	0.668	0	0.11	0.900	0	1.38	0.005	1	0.86	0.207	0	0.81	0.010	0	2.28	0.004	1
RAB17	0.19	0.660	0	0.12	0.803	0	0.14	0.636	0	-0.57	0.194	0	-0.11	0.523	0	-1.01	0.001	-1
IRAK3	0.52	0.048	0	0.00	0.999	0	0.38	0.052	0	0.74	0.001	0	0.28	0.210	0	1.29	0.000	1
TMTC1	0.00	0.995	0	0.23	0.415	0	-0.51	0.014	0	-0.49	0.091	0	-0.35	0.005	0	-1.35	0.000	-1
KRT31	1.53	0.296	0	0.50	0.806	0	0.14	0.887	0	-3.20	0.019	-1	0.85	0.003	0	-3.81	0.005	-1
HEPACAM2	0.04	0.961	0	0.35	0.534	0	-0.65	0.035	0	0.00	0.997	0	-0.35	0.056	0	-1.19	0.011	-1
SLC25A27	-0.33	0.492	0	0.07	0.926	0	-0.76	0.006	0	-0.47	0.040	0	-0.41	0.015	0	-1.57	0.000	-1
TSLP	-0.21	0.685	0	-0.07	0.922	0	0.93	0.020	0	0.39	0.716	0	-0.04	0.951	0	-1.22	0.026	-1
ARSJ	0.23	0.431	0	0.14	0.684	0	1.39	0.004	1	0.65	0.153	0	0.15	0.438	0	0.17	0.484	0
NFE2L2	0.17	0.597	0	0.46	0.110	0	0.27	0.329	0	0.49	0.012	0	0.19	0.173	0	2.51	0.000	1
TMEM88B	0.38	0.345	0	0.39	0.365	0	-0.41	0.119	0	0.27	0.421	0	0.07	0.711	0	-1.53	0.000	-1
NPL	-0.05	0.910	0	-0.16	0.623	0	0.16	0.435	0	1.04	0.003	1	-0.78	0.003	0	0.25	0.429	0

ACCEPTED MANUSCRIPT

TFEC	-0.16	0.787	0	-0.23	0.656	0	1.78	0.008	1	0.84	0.173	0	2.13	0.000	1	1.53	0.005	1
TLR6	0.03	0.970	0	0.21	0.777	0	1.32	0.112	0	-0.52	0.286	0	0.44	0.010	0	1.61	0.000	1
SLC26A4	0.42	0.283	0	-0.06	0.928	0	0.73	0.081	0	-0.24	0.548	0	0.36	0.036	0	2.68	0.000	1
SEMA3A	0.23	0.412	0	0.33	0.236	0	0.70	0.015	0	1.36	0.040	1	0.75	0.001	0	1.14	0.000	1
BMP4	-0.02	0.982	0	0.89	0.042	0	-0.84	0.145	0	-1.18	0.004	-1	-0.54	0.028	0	-1.65	0.000	-1
CYSLTR2	0.16	0.659	0	0.14	0.695	0	0.00	0.996	0	1.71	0.013	1	0.21	0.291	0	0.74	0.000	0
COL6A5	-1.18	0.015	-1	-0.41	0.512	0	1.69	0.010	1	1.94	0.000	1	1.07	0.004	1	0.20	0.192	0
MFSD2A	0.24	0.342	0	-0.54	0.040	0	0.22	0.393	0	1.19	0.003	1	0.22	0.291	0	0.33	0.389	0
SELENBP1	-0.24	0.734	0	-0.10	0.914	0	0.52	0.123	0	-0.41	0.406	0	0.37	0.131	0	-1.36	0.000	-1
IL21R	0.27	0.522	0	-0.03	0.963	0	0.69	0.132	0	-0.29	0.566	0	0.28	0.065	0	1.08	0.000	1
CALCB	-0.81	0.013	0	-0.64	0.079	0	-0.98	0.025	0	-0.17	0.651	0	-1.26	0.002	-1	-0.45	0.152	0
SLFN12L	-0.22	0.754	0	-0.29	0.665	0	3.58	0.009	1	0.57	0.430	0	2.44	0.000	1	1.89	0.011	1
LAT	0.18	0.727	0	-0.22	0.661	0	-0.10	0.740	0	-0.24	0.608	0	0.11	0.656	0	1.98	0.000	1
TNFAIP6	1.18	0.002	1	0.77	0.068	0	1.79	0.004	1	1.84	0.017	1	1.70	0.010	1	1.08	0.002	1
FABP5	0.79	0.006	0	-0.05	0.928	0	1.15	0.001	1	1.10	0.001	1	0.69	0.000	0	0.46	0.002	0
PSTPIP1	-0.16	0.789	0	-0.26	0.637	0	0.73	0.052	0	-0.06	0.899	0	0.11	0.511	0	1.85	0.000	1
ACOT2	1.12	0.002	1	-0.55	0.182	0	0.59	0.089	0	1.91	0.005	1	-0.35	0.158	0	0.65	0.001	0
ACOT1	1.12	0.002	1	-0.55	0.182	0	0.59	0.089	0	1.91	0.005	1	-0.35	0.158	0	0.65	0.001	0
RILPL2	0.28	0.583	0	0.13	0.848	0	0.59	0.159	0	-0.58	0.206	0	0.09	0.722	0	1.12	0.000	1
WFIKKN1	-0.36	0.222	0	-0.40	0.209	0	-0.03	0.933	0	-0.34	0.260	0	-0.42	0.028	0	1.05	0.000	1
CGREF1	0.47	0.437	0	-0.06	0.953	0	1.80	0.000	1	0.30	0.624	0	0.94	0.006	0	1.23	0.000	1
ELF5	1.67	0.026	1	0.10	0.944	0	0.18	0.469	0	-1.34	0.057	0	0.90	0.000	0	1.26	0.026	1
CDK6	-0.28	0.191	0	-0.36	0.114	0	0.19	0.239	0	0.41	0.082	0	1.24	0.000	1	0.30	0.161	0
COL5A1	-0.07	0.899	0	-0.18	0.713	0	1.25	0.005	1	0.65	0.132	0	0.39	0.012	0	-0.16	0.527	0
IRX4	0.43	0.283	0	-0.22	0.664	0	0.22	0.461	0	0.13	0.785	0	0.22	0.400	0	-1.11	0.008	-1
PDCD1LG2	-0.35	0.536	0	-0.10	0.898	0	0.47	0.163	0	0.33	0.517	0	1.47	0.000	1	2.53	0.000	1
PPP1R3A	-0.44	0.440	0	0.60	0.291	0	-1.49	0.002	-1	1.29	0.374	0	-1.34	0.002	-1	-0.25	0.049	0
CHSY3	0.08	0.894	0	-0.27	0.579	0	0.28	0.348	0	-0.05	0.938	0	0.06	0.840	0	-1.55	0.000	-1
SOCS2	-0.35	0.406	0	-0.26	0.383	0	0.74	0.029	0	0.73	0.239	0	1.45	0.000	1	-0.50	0.050	0
CCDC93	0.17	0.672	0	0.17	0.690	0	0.03	0.904	0	-0.08	0.783	0	0.19	0.073	0	1.13	0.000	1
CRYM	2.11	0.092	0	0.65	0.715	0	0.60	0.223	0	-2.59	0.053	0	1.10	0.001	1	-3.30	0.001	-1
TOP2A	0.43	0.213	0	-0.31	0.453	0	1.28	0.002	1	0.56	0.127	0	0.80	0.000	0	0.31	0.117	0

ACCEPTED MANUSCRIPT

EMILIN2	0.21	0.593	0	0.07	0.893	0	1.50	0.005	1	0.83	0.063	0	0.34	0.143	0	0.74	0.005	0
SLCO5A1	0.41	0.295	0	0.54	0.183	0	-0.14	0.566	0	-1.42	0.040	-1	-0.21	0.332	0	-1.16	0.001	-1
SLCO2B1	-0.18	0.641	0	0.32	0.345	0	-0.46	0.034	0	-0.22	0.541	0	-0.06	0.691	0	-1.74	0.000	-1
SHCBP1	0.36	0.486	0	-0.36	0.519	0	1.38	0.002	1	1.32	0.004	1	0.58	0.078	0	1.01	0.001	1
CXCR2	0.93	0.103	0	-0.57	0.411	0	2.44	0.008	1	2.41	0.001	1	2.32	0.000	1	2.73	0.000	1
ACVR1C	0.22	0.604	0	0.46	0.233	0	-0.46	0.065	0	0.45	0.425	0	-0.13	0.665	0	-2.09	0.000	-1
TGM6	1.76	0.082	0	0.61	0.663	0	0.09	0.882	0	-1.91	0.028	-1	0.60	0.012	0	-1.49	0.025	-1
IRF4	-0.12	0.777	0	0.32	0.336	0	-0.22	0.463	0	0.07	0.920	0	1.72	0.000	1	-0.98	0.023	0
CD3D	0.10	0.878	0	0.18	0.772	0	-0.10	0.776	0	-0.10	0.797	0	0.31	0.144	0	2.04	0.000	1
ITGB2	0.13	0.739	0	0.19	0.613	0	1.16	0.024	1	0.57	0.110	0	0.74	0.001	0	1.61	0.001	1
PVALB	-0.36	0.434	0	0.27	0.607	0	-1.38	0.010	-1	1.16	0.433	0	-1.97	0.015	-1	-0.43	0.003	0
MYL4	-0.26	0.491	0	-0.14	0.760	0	0.25	0.511	0	-0.50	0.380	0	-0.06	0.880	0	2.99	0.001	1
KRT16	1.37	0.018	1	-1.40	0.037	-1	4.89	0.001	1	3.21	0.003	1	3.71	0.000	1	3.01	0.000	1
ARC	-0.20	0.772	0	-0.20	0.774	0	0.62	0.082	0	0.14	0.773	0	1.47	0.001	1	0.39	0.167	0
OSBPL6	-0.17	0.772	0	0.43	0.385	0	-0.53	0.041	0	-0.31	0.635	0	-0.10	0.510	0	-1.40	0.000	-1
CLEC5A	-0.07	0.901	0	-0.10	0.863	0	1.57	0.036	1	0.32	0.554	0	0.43	0.241	0	2.24	0.000	1
STMN2	0.36	0.297	0	0.48	0.175	0	0.32	0.133	0	1.50	0.005	1	-0.05	0.882	0	-0.39	0.167	0
PAQR9	0.01	0.996	0	0.23	0.782	0	0.14	0.706	0	-0.42	0.204	0	0.30	0.347	0	-1.11	0.000	-1
PKN1	-0.18	0.746	0	-0.17	0.770	0	0.32	0.246	0	-0.15	0.740	0	-0.23	0.079	0	1.22	0.000	1
P2RX4	0.13	0.539	0	0.17	0.409	0	0.38	0.126	0	0.05	0.888	0	0.21	0.313	0	1.31	0.001	1
P2RY10	0.08	0.902	0	-0.01	0.989	0	0.52	0.102	0	1.10	0.017	1	0.34	0.142	0	1.47	0.000	1
CDKN3	0.33	0.444	0	-0.25	0.603	0	0.76	0.071	0	0.68	0.076	0	0.27	0.293	0	1.21	0.000	1
PCTP	-0.52	0.442	0	0.59	0.400	0	-0.21	0.493	0	1.26	0.020	1	-0.64	0.001	0	0.98	0.009	0
AMY1C	-0.21	0.762	0	0.41	0.511	0	-1.00	0.003	-1	0.15	0.788	0	-0.93	0.000	0	-1.63	0.000	-1
AMY2B	-0.21	0.762	0	0.41	0.511	0	-1.00	0.003	-1	0.15	0.788	0	-0.93	0.000	0	-1.63	0.000	-1
MICALCL	-0.17	0.559	0	0.05	0.897	0	-0.45	0.092	0	-0.75	0.024	0	-0.10	0.535	0	-1.14	0.000	-1
DNMT3L	-0.04	0.952	0	-0.33	0.465	0	0.92	0.016	0	0.08	0.925	0	0.41	0.043	0	1.84	0.000	1
SLC2A3	-0.09	0.869	0	0.10	0.855	0	0.72	0.111	0	-0.01	0.980	0	0.28	0.119	0	1.00	0.000	1
SLC2A14	-0.09	0.869	0	0.10	0.855	0	0.72	0.111	0	-0.01	0.980	0	0.28	0.119	0	1.00	0.000	1
BBOX1	-0.91	0.000	0	-0.30	0.217	0	-0.65	0.041	0	-0.29	0.306	0	-0.87	0.002	0	-1.00	0.002	-1
TIFA	-0.48	0.276	0	-0.28	0.597	0	-0.02	0.973	0	0.46	0.258	0	0.74	0.002	0	1.23	0.000	1
TPSAB1	-0.23	0.719	0	-0.36	0.555	0	0.96	0.023	0	1.82	0.046	1	0.81	0.001	0	0.79	0.001	0

MYOZ1	-0.20	0.728	0	0.13	0.841	0	-1.31	0.002	-1	0.93	0.480	0	-0.98	0.016	0	-0.94	0.006	0
IL1RN	0.24	0.463	0	-0.04	0.934	0	0.84	0.064	0	-0.31	0.273	0	0.41	0.022	0	1.42	0.000	1
TPH1	-0.18	0.725	0	0.17	0.742	0	1.07	0.005	1	1.94	0.003	1	1.71	0.000	1	1.40	0.000	1
TRIM2	-0.32	0.127	0	-0.07	0.835	0	-0.49	0.015	0	-1.09	0.001	-1	-0.71	0.008	0	-2.07	0.000	-1
WISP1	0.31	0.510	0	0.16	0.782	0	1.66	0.009	1	0.67	0.146	0	0.34	0.070	0	0.78	0.051	0
CXCL5	0.22	0.728	0	0.08	0.926	0	4.35	0.008	1	0.68	0.563	0	1.64	0.001	1	4.58	0.000	1
VIT	-0.20	0.408	0	0.47	0.051	0	-0.30	0.187	0	-0.08	0.907	0	-0.32	0.071	0	-1.76	0.000	-1
KRT31	1.84	0.154	0	0.64	0.718	0	-0.12	0.912	0	-4.05	0.025	-1	1.24	0.001	1	-3.28	0.006	-1
VAT1L	0.01	0.990	0	-0.03	0.971	0	-0.52	0.107	0	-0.64	0.191	0	0.02	0.926	0	-1.38	0.000	-1
PAQR5	-0.56	0.008	0	-0.29	0.237	0	-0.42	0.223	0	-0.48	0.044	0	-0.80	0.000	0	-1.22	0.000	-1
SLC25A37	0.58	0.177	0	0.42	0.408	0	0.15	0.589	0	-1.07	0.038	-1	0.35	0.028	0	-0.76	0.020	0
TAP2	-0.10	0.761	0	-0.02	0.967	0	0.05	0.853	0	0.03	0.925	0	1.10	0.000	1	0.84	0.000	0
ALS2CR12	-0.28	0.540	0	-0.22	0.668	0	-0.02	0.955	0	1.08	0.048	1	-0.34	0.197	0	-0.44	0.017	0
GMFG	-0.14	0.800	0	-0.14	0.789	0	-0.18	0.809	0	0.07	0.900	0	0.35	0.171	0	1.38	0.003	1
MASTL	0.36	0.342	0	-0.21	0.652	0	0.96	0.008	0	1.23	0.000	1	0.24	0.322	0	1.03	0.000	1
HBEGF	0.80	0.016	0	0.02	0.974	0	1.35	0.019	1	0.79	0.075	0	2.55	0.000	1	1.82	0.000	1
REG1A	0.38	0.199	0	0.04	0.942	0	4.21	0.001	1	0.08	0.891	0	0.53	0.055	0	2.95	0.000	1
FKBP10	-0.27	0.468	0	-0.07	0.902	0	1.09	0.001	1	0.85	0.012	0	0.40	0.035	0	0.83	0.000	0
CCNB2	0.32	0.510	0	-0.06	0.930	0	1.42	0.000	1	0.65	0.247	0	0.68	0.000	0	0.66	0.011	0
CASP5	1.21	0.004	1	0.13	0.847	0	0.98	0.014	0	0.25	0.533	0	2.52	0.000	1	1.54	0.000	1
TIMP4	-0.27	0.350	0	0.65	0.025	0	-1.09	0.028	-1	-0.23	0.841	0	-0.91	0.000	0	-1.79	0.000	-1
PLA2G4D	-0.28	0.454	0	-0.20	0.652	0	1.12	0.024	1	0.36	0.363	0	0.37	0.045	0	4.62	0.000	1
ZC3HAV1L	-0.12	0.785	0	-0.14	0.754	0	0.00	0.996	0	-0.27	0.482	0	0.04	0.833	0	-1.07	0.000	-1
PELI2	-0.77	0.001	0	-0.31	0.200	0	-0.63	0.021	0	-0.82	0.001	0	-0.63	0.001	0	-1.75	0.000	-1
SNX20	0.12	0.851	0	-0.10	0.884	0	0.79	0.048	0	0.48	0.398	0	0.33	0.053	0	1.02	0.000	1
DHRS7	0.29	0.226	0	0.02	0.960	0	-0.43	0.054	0	0.98	0.002	0	-1.10	0.000	-1	0.26	0.014	0
CYP4B1	-0.74	0.015	0	-0.02	0.970	0	-0.01	0.964	0	-0.54	0.222	0	-0.41	0.034	0	-1.10	0.002	-1
VANGL2	-0.04	0.913	0	-0.21	0.442	0	-0.48	0.018	0	-0.31	0.222	0	0.06	0.744	0	-1.12	0.000	-1
SUSD3	0.07	0.918	0	0.04	0.953	0	0.58	0.128	0	0.28	0.513	0	0.07	0.685	0	1.51	0.000	1
C9orf43	-0.30	0.531	0	-0.05	0.948	0	-0.20	0.528	0	-0.01	0.992	0	-0.06	0.783	0	1.15	0.000	1
PFN2	-0.10	0.813	0	0.12	0.775	0	-0.48	0.023	0	-0.16	0.756	0	-0.52	0.061	0	-1.22	0.000	-1
FGF18	-0.05	0.905	0	0.42	0.151	0	-1.33	0.001	-1	-1.54	0.002	-1	-1.19	0.000	-1	-1.20	0.012	-1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

HMCN1	0.44	0.065	0	0.34	0.226	0	0.97	0.002	0	-0.10	0.883	0	1.66	0.000	1	-1.56	0.000	-1
EFNB1	-0.03	0.967	0	-0.19	0.730	0	-0.01	0.963	0	-0.39	0.238	0	-0.06	0.723	0	-1.06	0.000	-1
P3H1	0.01	0.995	0	0.03	0.964	0	1.02	0.017	1	0.62	0.151	0	0.27	0.056	0	0.73	0.000	0
GLA	0.32	0.159	0	0.13	0.668	0	0.88	0.050	0	-0.30	0.434	0	0.07	0.743	0	1.77	0.000	1
GPR15	0.11	0.882	0	-0.15	0.833	0	-0.13	0.778	0	0.06	0.919	0	0.15	0.389	0	1.51	0.000	1
PILRA	-0.11	0.927	0	0.04	0.980	0	1.11	0.103	0	0.18	0.852	0	0.27	0.374	0	2.06	0.000	1
GLRX	0.27	0.410	0	-0.24	0.511	0	1.15	0.000	1	1.56	0.000	1	1.02	0.000	1	2.23	0.000	1
TGM3	0.09	0.836	0	-0.59	0.071	0	1.34	0.002	1	0.30	0.606	0	1.07	0.000	1	1.85	0.005	1
EVI2A	0.08	0.843	0	0.38	0.225	0	0.55	0.104	0	0.67	0.092	0	0.24	0.313	0	1.48	0.003	1
ALDH1A1	-0.59	0.198	0	0.17	0.790	0	-0.49	0.176	0	-0.08	0.909	0	-0.83	0.000	0	-1.61	0.000	-1
OGN	-0.15	0.823	0	0.53	0.317	0	-0.02	0.949	0	-0.41	0.538	0	-0.28	0.427	0	-1.11	0.002	-1
ITGAL	0.72	0.043	0	0.00	0.997	0	1.44	0.010	1	0.27	0.567	0	0.44	0.008	0	2.58	0.000	1
CTSW	-0.67	0.044	0	-0.12	0.823	0	-0.51	0.107	0	0.30	0.313	0	0.22	0.210	0	1.66	0.000	1
CIITA	0.03	0.968	0	0.00	0.998	0	0.18	0.633	0	0.10	0.862	0	0.26	0.147	0	1.14	0.000	1
BHLHA9	0.53	0.203	0	0.00	0.997	0	-0.22	0.609	0	-0.82	0.037	0	0.33	0.137	0	-1.46	0.028	-1
GUCY1A3	-0.85	0.012	0	-0.09	0.872	0	0.04	0.902	0	0.77	0.053	0	-0.32	0.080	0	-1.10	0.001	-1
ARL5B	0.06	0.896	0	-0.02	0.969	0	0.08	0.626	0	0.24	0.192	0	0.44	0.016	0	1.40	0.000	1
CTXN3	-0.47	0.169	0	0.29	0.485	0	-0.64	0.063	0	0.06	0.924	0	-0.56	0.009	0	-1.28	0.001	-1
NPAS2	-0.52	0.123	0	0.14	0.782	0	-0.76	0.131	0	-1.89	0.000	-1	-0.73	0.000	0	-1.11	0.000	-1
CLEC4E	0.64	0.385	0	-0.20	0.852	0	4.47	0.006	1	0.12	0.726	0	1.43	0.005	1	6.21	0.000	1
SLC5A5	0.41	0.468	0	0.06	0.941	0	0.23	0.365	0	-0.99	0.301	0	0.39	0.006	0	-1.28	0.035	-1
TNNT1	-0.51	0.207	0	0.24	0.640	0	-0.96	0.009	0	-0.22	0.744	0	-0.95	0.000	0	2.04	0.002	1
ADCY9	-0.41	0.073	0	-0.19	0.517	0	-0.39	0.036	0	-0.06	0.852	0	-0.32	0.111	0	-1.21	0.000	-1
PXDN	0.52	0.050	0	0.32	0.316	0	1.04	0.004	1	0.40	0.395	0	0.81	0.002	0	-0.79	0.000	0
IL31RA	-0.58	0.471	0	0.49	0.583	0	-0.71	0.014	0	-1.15	0.180	0	0.16	0.279	0	-1.22	0.017	-1
GK	0.74	0.026	0	0.13	0.794	0	1.03	0.022	1	0.85	0.004	0	1.74	0.000	1	2.29	0.000	1
SERPINB4	3.21	0.000	1	-0.40	0.593	0	2.27	0.002	1	3.96	0.005	1	2.85	0.000	1	6.72	0.000	1
SERPINB3	3.21	0.000	1	-0.40	0.593	0	2.27	0.002	1	3.96	0.005	1	2.85	0.000	1	6.72	0.000	1
SLC2A6	0.07	0.915	0	-0.12	0.832	0	0.89	0.120	0	0.18	0.595	0	0.22	0.344	0	1.94	0.000	1
TUSC5	-0.30	0.632	0	0.24	0.719	0	-0.78	0.026	0	0.52	0.407	0	-0.12	0.548	0	-1.01	0.000	-1
FOXC1	0.31	0.406	0	0.14	0.767	0	-0.40	0.033	0	-0.17	0.576	0	-0.35	0.187	0	-1.16	0.000	-1
MALL	-0.04	0.912	0	-0.39	0.138	0	0.46	0.030	0	-0.03	0.949	0	0.38	0.129	0	1.11	0.001	1

ACCEPTED MANUSCRIPT

PCSK5	0.17	0.609	0	0.01	0.977	0	1.18	0.011	1	0.08	0.899	0	0.22	0.117	0	0.52	0.020	0
PANX3	0.82	0.029	0	0.44	0.326	0	-0.43	0.248	0	1.49	0.004	1	-1.28	0.000	-1	-0.28	0.266	0
HOXB8	-0.06	0.890	0	0.07	0.874	0	-0.11	0.676	0	0.27	0.735	0	0.20	0.181	0	-1.00	0.002	-1
YPEL2	-0.06	0.872	0	0.03	0.933	0	-0.71	0.012	0	-0.39	0.108	0	0.18	0.557	0	-1.05	0.002	-1
COL6A2	-0.17	0.687	0	-0.20	0.617	0	1.10	0.001	1	1.15	0.022	1	0.89	0.001	0	-0.20	0.184	0
GBP7	0.08	0.924	0	0.59	0.333	0	0.25	0.610	0	0.84	0.099	0	3.48	0.000	1	1.49	0.000	1
GBP4	0.08	0.924	0	0.59	0.333	0	0.25	0.610	0	0.84	0.099	0	3.48	0.000	1	1.49	0.000	1
ADHFE1	0.02	0.973	0	0.57	0.073	0	-0.66	0.030	0	0.50	0.212	0	-0.37	0.022	0	-1.35	0.000	-1
KRT82	2.08	0.038	1	0.55	0.696	0	-0.35	0.667	0	-2.44	0.057	0	1.58	0.000	1	-2.62	0.012	-1
RNASE3	1.14	0.031	1	-0.14	0.871	0	0.21	0.646	0	0.12	0.920	0	0.28	0.303	0	2.67	0.000	1
PSMB8	0.28	0.548	0	0.16	0.781	0	0.31	0.184	0	0.26	0.402	0	2.09	0.000	1	1.30	0.000	1
TP53	-0.19	0.596	0	0.13	0.749	0	0.00	0.994	0	-0.25	0.380	0	-0.13	0.659	0	-1.66	0.000	-1
PHLDB1	-0.31	0.434	0	-0.25	0.575	0	-0.42	0.055	0	-0.28	0.546	0	0.06	0.751	0	-1.14	0.000	-1
PPARA	-0.17	0.610	0	0.00	0.994	0	-0.66	0.019	0	-0.52	0.149	0	-0.60	0.001	0	-1.33	0.000	-1
TFPI2	0.21	0.699	0	0.29	0.568	0	1.69	0.005	1	1.54	0.067	0	0.11	0.639	0	0.83	0.016	0
LIPG	1.19	0.001	1	0.38	0.303	0	0.84	0.015	0	0.81	0.021	0	1.65	0.001	1	0.72	0.040	0
CYP2D7	-0.27	0.383	0	0.14	0.720	0	-0.53	0.072	0	-0.71	0.009	0	-0.34	0.017	0	-1.19	0.000	-1
IL36G	0.21	0.529	0	-0.33	0.301	0	1.22	0.001	1	1.35	0.000	1	1.20	0.000	1	1.53	0.001	1
GID4	-0.23	0.214	0	0.06	0.841	0	-0.33	0.067	0	-0.15	0.518	0	-0.52	0.007	0	-1.09	0.000	-1
ENO3	-0.05	0.899	0	0.33	0.187	0	-1.26	0.003	-1	0.68	0.569	0	-1.13	0.001	-1	-0.69	0.001	0
ALDH1B1	0.07	0.905	0	-0.29	0.547	0	-0.51	0.132	0	-0.47	0.147	0	-0.10	0.609	0	1.35	0.000	1
SLAMF7	-0.21	0.581	0	0.29	0.443	0	-0.50	0.066	0	0.64	0.117	0	1.03	0.000	1	2.66	0.000	1
CORO6	-0.17	0.596	0	0.59	0.043	0	-1.28	0.010	-1	-0.86	0.012	0	-0.66	0.000	0	-1.13	0.000	-1
TPRG1	0.10	0.810	0	-0.09	0.840	0	0.14	0.515	0	0.40	0.047	0	0.36	0.032	0	1.35	0.000	1
TMEM45B	0.48	0.429	0	0.12	0.889	0	0.08	0.789	0	1.71	0.002	1	0.19	0.496	0	0.53	0.048	0
KRT6C	1.36	0.163	0	-1.77	0.095	0	6.19	0.002	1	4.83	0.002	1	6.84	0.000	1	6.12	0.000	1
KRT6A	1.36	0.163	0	-1.77	0.095	0	6.19	0.002	1	4.83	0.002	1	6.84	0.000	1	6.12	0.000	1
ALOX15	-0.68	0.282	0	-0.09	0.930	0	1.03	0.004	1	0.24	0.540	0	0.20	0.103	0	1.14	0.001	1
CRTAM	0.15	0.715	0	-0.32	0.376	0	0.04	0.947	0	-0.21	0.700	0	-0.04	0.893	0	1.33	0.000	1
GDA	0.45	0.042	0	0.00	0.993	0	1.32	0.011	1	0.57	0.240	0	1.80	0.000	1	0.87	0.026	0
PEG3	0.28	0.596	0	0.63	0.183	0	-0.27	0.218	0	-0.53	0.301	0	-0.32	0.079	0	-1.40	0.000	-1
PRKAA2	-0.09	0.885	0	0.62	0.149	0	-0.73	0.020	0	0.53	0.194	0	-0.49	0.021	0	-1.29	0.001	-1

ALDH1A2	-0.14	0.872	0	-0.07	0.941	0	0.98	0.006	0	-0.13	0.920	0	0.04	0.908	0	-1.83	0.000	-1
CD19	-0.07	0.909	0	-0.12	0.844	0	0.16	0.585	0	-0.16	0.802	0	0.03	0.912	0	1.06	0.000	1
CMBL	0.11	0.842	0	0.39	0.333	0	-0.34	0.237	0	0.33	0.449	0	-1.02	0.000	-1	-0.82	0.006	0
ADGRG5	0.59	0.142	0	0.12	0.847	0	0.86	0.043	0	-0.24	0.654	0	0.36	0.088	0	1.32	0.000	1
ABAT	-0.18	0.506	0	0.24	0.393	0	-0.13	0.557	0	-0.23	0.477	0	-0.19	0.240	0	-1.18	0.000	-1
KRT72	3.36	0.074	0	1.38	0.579	0	1.34	0.126	0	-2.65	0.120	0	2.27	0.000	1	-3.40	0.005	-1
INSL6	0.09	0.734	0	0.06	0.843	0	-0.44	0.187	0	0.33	0.517	0	0.52	0.103	0	1.49	0.000	1
LMOD3	0.01	0.987	0	0.65	0.129	0	-1.09	0.002	-1	0.52	0.428	0	-1.11	0.001	-1	-0.66	0.064	0
LGI2	1.41	0.001	1	0.33	0.518	0	1.01	0.046	1	1.54	0.011	1	0.21	0.357	0	1.95	0.000	1
PLCL2	-0.17	0.554	0	0.08	0.817	0	0.39	0.196	0	0.65	0.210	0	0.00	0.992	0	1.01	0.017	1
BRIP1	0.48	0.255	0	0.38	0.447	0	0.51	0.147	0	1.12	0.010	1	0.05	0.820	0	0.93	0.001	0
CSF2RB	0.05	0.941	0	0.04	0.956	0	1.54	0.002	1	0.83	0.183	0	1.45	0.000	1	1.40	0.000	1
PAPPA	0.41	0.078	0	0.07	0.855	0	0.59	0.073	0	0.18	0.723	0	0.45	0.030	0	-1.20	0.001	-1
CYP17A1	-0.68	0.036	0	-0.71	0.056	0	0.75	0.023	0	0.56	0.244	0	0.29	0.172	0	-1.08	0.000	-1
STEAP1B	0.61	0.038	0	0.14	0.750	0	0.72	0.099	0	-0.57	0.062	0	0.54	0.018	0	2.66	0.001	1
SIRPA	0.69	0.080	0	0.26	0.619	0	2.29	0.009	1	0.17	0.804	0	1.22	0.000	1	3.65	0.000	1
KIF21A	-0.74	0.081	0	0.01	0.991	0	-1.30	0.002	-1	-1.23	0.001	-1	-1.75	0.000	-1	-1.65	0.000	-1
KRTAP15-1	1.88	0.231	0	0.96	0.626	0	-0.06	0.968	0	-3.90	0.101	0	4.90	0.003	1	-6.24	0.000	-1
ADAMTSL4	-0.30	0.327	0	0.01	0.992	0	-0.28	0.447	0	-0.61	0.070	0	-0.14	0.462	0	-1.15	0.000	-1
CD2	-0.05	0.923	0	-0.06	0.912	0	0.50	0.132	0	0.25	0.573	0	0.81	0.016	0	1.62	0.000	1
DCLK3	0.65	0.037	0	0.25	0.545	0	-0.12	0.744	0	-1.13	0.033	-1	0.04	0.884	0	-1.46	0.010	-1
RAB19	0.15	0.769	0	0.19	0.706	0	0.63	0.045	0	0.35	0.410	0	0.44	0.012	0	1.40	0.000	1
SNX10	0.16	0.519	0	0.13	0.632	0	0.20	0.550	0	0.63	0.022	0	0.85	0.000	0	1.06	0.000	1
CHAD	-0.52	0.234	0	0.38	0.457	0	-1.23	0.014	-1	-0.11	0.928	0	-1.00	0.002	-1	0.30	0.050	0
SOD3	-0.39	0.309	0	0.29	0.511	0	0.34	0.224	0	-0.12	0.901	0	-0.47	0.024	0	1.15	0.000	1
PTGES	-0.31	0.408	0	-0.56	0.131	0	0.31	0.222	0	0.39	0.344	0	1.70	0.000	1	1.63	0.000	1
EGFL6	0.20	0.690	0	0.34	0.476	0	-0.42	0.235	0	-0.75	0.085	0	-0.69	0.027	0	-2.45	0.000	-1
STEAP2	0.68	0.017	0	0.11	0.805	0	0.53	0.112	0	-0.23	0.611	0	0.14	0.589	0	1.24	0.001	1
FAM26F	0.23	0.765	0	0.35	0.627	0	0.17	0.649	0	0.29	0.670	0	0.44	0.215	0	2.43	0.000	1
TRABD2B	0.16	0.557	0	0.14	0.633	0	-0.30	0.114	0	-0.13	0.859	0	-0.40	0.101	0	-1.17	0.000	-1
MAL2	-0.06	0.832	0	-0.37	0.060	0	0.37	0.047	0	1.09	0.001	1	0.53	0.002	0	0.85	0.000	0
PAMR1	0.69	0.062	0	0.57	0.187	0	-0.10	0.746	0	0.26	0.703	0	0.38	0.157	0	-1.30	0.014	-1

ACCEPTED MANUSCRIPT

LST1	0.00	0.996	0	0.13	0.844	0	0.68	0.062	0	0.04	0.961	0	0.61	0.033	0	2.49	0.000	1
CD53	0.25	0.423	0	0.17	0.629	0	1.65	0.018	1	1.13	0.020	1	1.82	0.000	1	1.41	0.000	1
FABP4	0.04	0.931	0	0.40	0.242	0	-0.58	0.024	0	-0.14	0.868	0	-0.21	0.377	0	-2.12	0.000	-1
S100A8	4.27	0.000	1	-0.77	0.489	0	4.65	0.002	1	1.51	0.096	0	4.82	0.000	1	4.45	0.000	1
TRIM6-TRIM	-0.25	0.597	0	0.14	0.806	0	0.41	0.396	0	0.07	0.923	0	1.47	0.000	1	0.51	0.164	0
TRIM34	-0.25	0.597	0	0.14	0.806	0	0.41	0.396	0	0.07	0.923	0	1.47	0.000	1	0.51	0.164	0
KLHL6	0.06	0.925	0	-0.19	0.704	0	0.87	0.023	0	0.23	0.575	0	0.33	0.254	0	1.16	0.008	1
PPBP	-0.30	0.515	0	0.01	0.994	0	1.48	0.038	1	0.08	0.896	0	0.14	0.589	0	0.91	0.000	0
FREM2	-0.30	0.288	0	-0.01	0.992	0	-0.78	0.036	0	-0.45	0.288	0	-0.31	0.103	0	-2.11	0.000	-1
LTB	0.58	0.144	0	-0.09	0.888	0	0.90	0.127	0	0.14	0.767	0	0.53	0.040	0	1.84	0.000	1
WDR47	-0.01	0.969	0	0.15	0.560	0	-0.67	0.005	0	-0.77	0.004	0	-0.74	0.000	0	-1.46	0.000	-1
SCARA5	-0.29	0.456	0	-0.09	0.867	0	-1.04	0.024	-1	-0.52	0.388	0	-0.22	0.189	0	-1.47	0.000	-1
SIRPA	-0.11	0.735	0	-0.04	0.920	0	0.57	0.025	0	0.00	0.992	0	0.22	0.218	0	1.38	0.000	1
IRF1	-0.35	0.542	0	0.40	0.383	0	0.43	0.079	0	0.51	0.070	0	3.70	0.000	1	1.02	0.001	1
STAB1	-0.41	0.252	0	-0.51	0.183	0	1.33	0.001	1	0.57	0.136	0	0.14	0.391	0	0.21	0.556	0
IL18R1	0.26	0.460	0	0.15	0.716	0	-0.22	0.291	0	-0.66	0.054	0	0.59	0.007	0	1.29	0.000	1
ACTC1	0.10	0.884	0	0.72	0.138	0	-0.94	0.092	0	-0.02	0.986	0	-0.58	0.459	0	2.87	0.011	1
DTX3L	0.20	0.610	0	0.47	0.181	0	0.24	0.346	0	0.48	0.171	0	2.93	0.000	1	0.67	0.017	0
FMO5	0.46	0.033	0	0.43	0.087	0	-0.46	0.094	0	-0.06	0.883	0	-0.86	0.000	0	-1.18	0.001	-1
PSMB9	0.05	0.941	0	0.23	0.669	0	-0.04	0.927	0	0.36	0.238	0	2.46	0.000	1	1.23	0.001	1
TCAP	-0.35	0.343	0	0.12	0.805	0	-1.69	0.001	-1	0.84	0.497	0	-0.93	0.007	0	-0.10	0.764	0
CCSER1	0.26	0.411	0	0.10	0.810	0	0.04	0.898	0	-0.87	0.042	0	0.08	0.722	0	-1.00	0.018	-1
GUCY1B3	-1.18	0.001	-1	-0.40	0.293	0	0.15	0.517	0	0.71	0.122	0	-0.06	0.774	0	-0.73	0.025	0
RGMB	-0.56	0.003	0	-0.10	0.698	0	-0.82	0.008	0	-0.53	0.063	0	-0.54	0.004	0	-1.62	0.000	-1
CYB5R2	0.26	0.315	0	0.23	0.424	0	-0.11	0.643	0	-0.35	0.280	0	0.04	0.873	0	-1.06	0.000	-1
COL1A1	0.06	0.902	0	-0.24	0.536	0	0.55	0.116	0	0.47	0.438	0	1.74	0.000	1	-0.28	0.014	0
CDH6	1.26	0.127	0	0.64	0.539	0	1.00	0.005	0	-1.58	0.047	-1	0.46	0.012	0	-0.58	0.182	0
WFDC12	0.52	0.105	0	-0.48	0.189	0	2.92	0.000	1	1.57	0.013	1	3.44	0.000	1	5.15	0.000	1
DIO2	0.35	0.449	0	0.16	0.797	0	1.40	0.020	1	1.81	0.016	1	0.55	0.016	0	1.31	0.000	1
SPRR1A	-0.02	0.986	0	-1.14	0.110	0	4.73	0.000	1	2.71	0.001	1	1.99	0.000	1	2.52	0.000	1
SPRR1B	-0.02	0.986	0	-1.14	0.110	0	4.73	0.000	1	2.71	0.001	1	1.99	0.000	1	2.52	0.000	1
GBP2	0.19	0.845	0	0.93	0.183	0	0.34	0.331	0	1.03	0.067	0	4.12	0.000	1	1.99	0.000	1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ARG1	0.19	0.734	0	-0.06	0.931	0	1.15	0.046	1	-1.10	0.004	-1	1.33	0.000	1	0.21	0.752	0
ATP1A2	-0.35	0.256	0	0.31	0.358	0	-1.21	0.004	-1	-0.18	0.866	0	-0.95	0.010	0	-1.31	0.000	-1
SRR	0.29	0.530	0	0.59	0.177	0	-0.19	0.396	0	-0.16	0.563	0	-0.37	0.037	0	-1.35	0.000	-1
PTPDC1	-0.16	0.571	0	0.18	0.526	0	-0.31	0.191	0	-0.18	0.656	0	0.01	0.974	0	-1.12	0.000	-1
UNC93B1	-0.20	0.689	0	-0.14	0.793	0	1.15	0.008	1	0.57	0.047	0	0.58	0.002	0	1.16	0.004	1
SERPINB12	0.35	0.345	0	-0.75	0.043	0	1.57	0.000	1	2.45	0.001	1	0.84	0.012	0	2.56	0.000	1
FAM101A	-0.09	0.857	0	0.00	0.997	0	-0.28	0.304	0	-0.24	0.611	0	0.04	0.850	0	-1.20	0.007	-1
FAM101A	-0.09	0.857	0	0.00	0.997	0	-0.28	0.304	0	-0.24	0.611	0	0.04	0.850	0	-1.20	0.007	-1
CCR9	-0.42	0.276	0	-0.22	0.638	0	0.00	0.991	0	0.23	0.585	0	0.15	0.458	0	1.01	0.000	1
AIF1	0.17	0.671	0	0.25	0.495	0	0.89	0.033	0	0.38	0.143	0	1.37	0.000	1	2.60	0.000	1
ZFAND5	0.40	0.058	0	0.10	0.731	0	0.22	0.219	0	0.37	0.250	0	0.41	0.010	0	1.18	0.000	1
TTN	-0.19	0.832	0	0.63	0.365	0	-0.88	0.008	0	1.99	0.340	0	-0.83	0.375	0	-1.39	0.000	-1
RECK	-0.27	0.436	0	0.43	0.200	0	-0.42	0.037	0	0.26	0.729	0	-0.78	0.000	0	-1.07	0.000	-1
CYP4F3	0.08	0.891	0	-0.02	0.976	0	2.27	0.035	1	0.21	0.760	0	0.39	0.134	0	1.35	0.000	1
LTBP4	-0.62	0.017	0	-0.18	0.595	0	-0.78	0.022	0	-0.70	0.014	0	-0.46	0.029	0	-1.60	0.000	-1
CRIM1	-0.26	0.160	0	-0.07	0.810	0	-0.52	0.005	0	-0.42	0.028	0	-0.17	0.235	0	-1.02	0.000	-1
RAB15	0.00	0.999	0	-0.41	0.394	0	-0.12	0.609	0	-0.37	0.547	0	0.20	0.328	0	-1.01	0.011	-1
B4GALNT1	-0.58	0.002	0	-0.62	0.005	0	0.57	0.019	0	0.42	0.134	0	0.76	0.012	0	1.25	0.000	1
C15orf62	0.26	0.460	0	-0.08	0.872	0	-0.42	0.166	0	-0.49	0.093	0	-0.32	0.026	0	-1.16	0.003	-1
NMU	-0.10	0.864	0	-0.40	0.345	0	2.28	0.000	1	0.26	0.659	0	0.65	0.036	0	-0.11	0.591	0
PDE4B	0.54	0.057	0	0.19	0.618	0	0.59	0.053	0	0.43	0.163	0	0.49	0.009	0	1.59	0.000	1
FSCN1	0.35	0.417	0	-0.06	0.930	0	1.39	0.004	1	0.43	0.410	0	1.02	0.000	1	1.11	0.000	1
PMAIP1	0.06	0.901	0	-0.19	0.623	0	0.62	0.044	0	1.12	0.006	1	0.41	0.021	0	1.28	0.000	1
MARCKSL1	0.29	0.577	0	-0.07	0.920	0	1.12	0.045	1	-0.13	0.810	0	0.54	0.030	0	0.76	0.026	0
FZD3	0.29	0.374	0	0.17	0.678	0	-0.49	0.038	0	-0.58	0.072	0	-0.29	0.094	0	-1.51	0.000	-1
AIM2	0.71	0.013	0	0.07	0.878	0	0.51	0.109	0	1.41	0.000	1	0.69	0.053	0	1.11	0.000	1
ORC1	0.21	0.631	0	-0.04	0.942	0	0.46	0.062	0	0.69	0.046	0	0.69	0.003	0	1.20	0.001	1
ZWILCH	0.00	0.999	0	-0.23	0.603	0	0.60	0.045	0	1.02	0.007	1	0.51	0.002	0	0.56	0.045	0
IL4R	0.00	0.999	0	-0.42	0.343	0	1.73	0.006	1	0.36	0.484	0	1.76	0.000	1	1.70	0.000	1
NDC80	0.63	0.111	0	-0.05	0.945	0	1.33	0.004	1	0.79	0.076	0	0.31	0.144	0	0.89	0.000	0
PLXNA2	-0.03	0.954	0	0.14	0.713	0	-0.18	0.302	0	-0.43	0.077	0	0.16	0.332	0	-1.56	0.000	-1
EPHA3	0.50	0.159	0	0.72	0.061	0	1.18	0.005	1	0.70	0.453	0	0.43	0.055	0	-0.48	0.099	0

ACCEPTED MANUSCRIPT

SYN1	0.05	0.934	0	0.21	0.684	0	0.19	0.644	0	0.14	0.792	0	-0.14	0.456	0	1.23	0.000	1
STAT2	-0.51	0.039	0	0.20	0.539	0	0.09	0.772	0	0.28	0.375	0	1.74	0.000	1	0.85	0.013	0
IFITM3	0.04	0.924	0	-0.13	0.730	0	1.72	0.021	1	-0.04	0.956	0	0.99	0.002	0	2.32	0.000	1
FBP1	1.95	0.027	1	0.23	0.875	0	0.50	0.377	0	-1.99	0.110	0	1.40	0.001	1	-2.41	0.043	-1
MGST2	0.13	0.777	0	-0.26	0.513	0	0.05	0.839	0	0.97	0.006	0	-0.14	0.644	0	1.55	0.000	1
TTC22	-0.20	0.715	0	-0.70	0.123	0	0.28	0.259	0	0.52	0.019	0	0.36	0.127	0	1.08	0.001	1
IFI35	-0.10	0.743	0	0.00	0.997	0	0.42	0.019	0	0.16	0.572	0	1.38	0.000	1	1.09	0.001	1
MEF2C	0.04	0.944	0	0.70	0.058	0	-0.49	0.018	0	1.01	0.040	1	-0.82	0.002	0	-0.64	0.051	0
C10orf54	0.17	0.700	0	0.20	0.656	0	0.46	0.055	0	0.10	0.809	0	0.27	0.062	0	1.37	0.001	1
KRT84	3.41	0.000	1	0.46	0.707	0	0.37	0.700	0	-2.47	0.036	-1	1.37	0.000	1	1.09	0.129	0
ZMYND15	0.14	0.733	0	0.11	0.799	0	0.39	0.069	0	0.49	0.175	0	0.37	0.007	0	1.76	0.000	1
SERPINA3	-0.18	0.811	0	-0.08	0.930	0	1.12	0.010	1	0.34	0.682	0	0.27	0.119	0	1.06	0.000	1
SERPINA3	-0.18	0.811	0	-0.08	0.930	0	1.12	0.010	1	0.34	0.682	0	0.27	0.119	0	1.06	0.000	1
RYR1	-0.37	0.177	0	0.24	0.479	0	-0.85	0.019	0	0.77	0.463	0	-0.49	0.055	0	-1.10	0.002	-1
IGFBP5	-0.12	0.694	0	0.41	0.105	0	-0.18	0.338	0	0.03	0.955	0	-0.52	0.049	0	-1.22	0.000	-1
STEAP4	1.00	0.000	1	0.67	0.014	0	0.79	0.017	0	0.21	0.562	0	0.53	0.032	0	0.90	0.000	0
KLHL41	-0.16	0.772	0	0.53	0.229	0	-0.87	0.009	0	1.20	0.312	0	-1.07	0.001	-1	-0.68	0.015	0
SCCPDH	-0.51	0.020	0	0.27	0.303	0	-0.61	0.002	0	-0.56	0.043	0	-1.36	0.000	-1	-0.56	0.000	0
PM20D1	0.40	0.375	0	0.19	0.748	0	-0.46	0.071	0	-1.11	0.026	-1	0.31	0.223	0	-2.30	0.003	-1
PCDHB14	0.37	0.428	0	0.37	0.468	0	0.18	0.450	0	1.17	0.013	1	0.42	0.038	0	0.07	0.518	0
DNAJA4	-0.13	0.718	0	-0.12	0.739	0	-0.19	0.312	0	0.06	0.854	0	-0.29	0.034	0	-1.06	0.000	-1
FBP2	0.32	0.633	0	0.62	0.314	0	-0.42	0.149	0	-0.52	0.215	0	-0.32	0.131	0	-1.38	0.001	-1
CRYBA4	2.13	0.033	1	0.57	0.684	0	0.48	0.415	0	-2.22	0.047	-1	0.55	0.110	0	-0.19	0.852	0
SLC11A1	-0.24	0.589	0	-0.22	0.640	0	1.77	0.018	1	0.65	0.214	0	0.34	0.084	0	1.98	0.000	1
LRG1	0.11	0.895	0	-0.06	0.944	0	1.19	0.012	1	0.12	0.876	0	1.12	0.002	1	-0.17	0.630	0
COBL	-0.59	0.009	0	-0.11	0.735	0	-0.72	0.029	0	-0.48	0.048	0	-0.94	0.000	0	-1.47	0.000	-1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

Table E1. Summary of clinical characteristics and demographics of patients (mean ± SE if not specified)

	AD (n = 25)	Psoriasis (n = 10)	CD (nickel) (n = 10)	CD (frangrance) (n = 3)	Control (n = 8)
Age (y), mean (SE)	45.7 (2.3)	51.3 (4.9)	46 (3.2)	37.3 (9.0)	50.9 (2.0)
Sex (male/female; n)	16/9	6/4	0/10	2/1	7/1
SCORAD index, mean (SE)	56.7 (3.4)				
IgE kU/L, log10, (SE)	2.4 (0.17)				
%Eosinophils (SE)	4.9 (1.2)				
Extrinsic AD, no. (%)	14/25 (56)				

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

Table E2. Characteristics of studied populations

Number	Disease or control	Race	Gender	Age	SCORAD	PASI	IgE (U/ml)	Extrinsic/ intrinsic	%eosinophil
1	AD	EA	M	45	56	NA	1281.5	Extrinsic	2.6
2	AD	EA	F	47	77	NA	3000	Extrinsic	5.4
3	AD	EA	F	49	56	NA	1304	Extrinsic	8
4	AD	EA	M	48	51	NA	41	Intrinsic	3.6
5	AD	EA	F	59	45	NA	14.1	Intrinsic	1.4
6	AD	EA	F	50	44	NA	1269	Extrinsic	6.3
7	AD	EA	M	61	52	NA	71	Intrinsic	1.2
8	AD	EA	M	33	65	NA	56.6	Intrinsic	10.3
9	AD	EA	F	67	53	NA	6	Intrinsic	0.6
10	AD	EA	F	40	72	NA	92.2	Intrinsic	2.9
11	AD	EA	F	59	56	NA	3.6	Intrinsic	3.5
12	AD	EA	M	69	61	NA	72.9	Intrinsic	2.36
13	AD	EA	M	73	55	NA	471	Extrinsic	7.5
14	AD	EA	F	36	65	NA	492	Extrinsic	11.8
15	AD	EA	M	42	53	NA	1821	Extrinsic	9.2
16	AD	EA	M	34	76	NA	100	Intrinsic	4.2
17	AD	EA	F	39	37	NA	2000	Extrinsic	6
18	AD	EA	M	48	51	NA	39	Intrinsic	4.3
19	AD	EA	M	36	36	NA	1021	Extrinsic	4.4
20	AD	EA	M	26	33	NA	254	Extrinsic	7.6
21	AD	EA	M	30	57	NA	2000	Extrinsic	2.1
22	AD	EA	M	50	56	NA	907	Extrinsic	3.7
23	AD	EA	M	23	76	NA	93	Intrinsic	6.7
24	AD	EA	M	38	64	NA	2000	Extrinsic	1.3
25	AD	EA	M	41	70	NA	1562	Extrinsic	5.9
26	Psoriasis	EA	M	59	NA	20.1	NA	NA	NA
27	Psoriasis	EA	F	49	NA	8.4	NA	NA	NA
28	Psoriasis	EA	F	30	NA	8.5	NA	NA	NA
29	Psoriasis	EA	M	43	NA	31.6	NA	NA	NA
30	Psoriasis	EA	M	59	NA	13.5	NA	NA	NA
31	Psoriasis	EA	F	42	NA	13.9	NA	NA	NA
32	Psoriasis	EA	M	64	NA	59.5	NA	NA	NA
33	Psoriasis	EA	F	62	NA	14.5	NA	NA	NA
34	Psoriasis	EA	M	44	NA	21.6	NA	NA	NA
35	Psoriasis	EA	M	61	NA	11.7	NA	NA	NA
36	CD (nickel)	EA	F	45	NA	NA	NA	NA	NA
37	CD (nickel)	EA	F	33	NA	NA	NA	NA	NA
38	CD (nickel)	EA	F	52	NA	NA	NA	NA	NA
39	CD (nickel)	EA	F	48	NA	NA	NA	NA	NA
40	CD (nickel)	EA	F	51	NA	NA	NA	NA	NA
41	CD (nickel)	EA	F	55	NA	NA	NA	NA	NA
42	CD (nickel)	EA	F	37	NA	NA	NA	NA	NA
43	CD (nickel)	EA	F	54	NA	NA	NA	NA	NA
44	CD (nickel)	EA	F	28	NA	NA	NA	NA	NA
45	CD (nickel)	EA	F	57	NA	NA	NA	NA	NA
46	CD (fragrance)	EA	M	42	NA	NA	NA	NA	NA
47	CD (fragrance)	EA	F	50	NA	NA	NA	NA	NA
48	CD (fragrance)	EA	M	20	NA	NA	NA	NA	NA
49	Control	EA	F	46	NA	NA	NA	NA	NA
50	Control	EA	M	56	NA	NA	NA	NA	NA
51	Control	EA	M	55	NA	NA	NA	NA	NA
52	Control	EA	M	57	NA	NA	NA	NA	NA
53	Control	EA	M	49	NA	NA	NA	NA	NA
54	Control	EA	M	40	NA	NA	NA	NA	NA
55	Control	EA	M	53	NA	NA	NA	NA	NA
56	Control	EA	M	51	NA	NA	NA	NA	NA

AD = atopic dermatitis
EA = European American
SCORAD = scoring atopic dermatitis
PASI = psoriasis area and severity index
IgE levels of greater than 200 kU/L defining extrinsic AD and values of less than 200 kU/L defining intrinsic AD

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

Table E3: Primers used for qRT-PCR

Gene symbol	Assay ID
18S	Hs99999901_s1
Ccl17	Mm01244826_g1
Ccl20	Mm01268754_m1
Ccl22	Mm00436439_m1
Cxcl1	Mm04207460_m1
Cxcl10	Mm00445235_m1
Flg	Mm01716522_m1
Ifng	Mm01168134_m1
Il12b	Mm00434174_m1
Il13	Mm00434204_m1
Il17a	Mm00439618_m1
Il19	Mm01288324_m1
Il1b	Mm00434228_m1
Il20	Mm00445341_m1
Il23a	Mm01160011_g1
Krt16	Mm01306670_g1
Lcn2	Mm01324470_m1
Lor	Mm01962650_s1
Mx1	Mm00487796_m1
Ppl	Mm00447206_m1
Rplp0	Mm00725448_s1
S100a8	Mm00496696_g1
Stat1	Mm00439531_m1
Tnfsf4	Mm00437214_m1

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

Table E6: KEGG pathways

KEGG PATHWAY	MADAD	Flaky -tail	FLG mut	NcNga	Ova	Oxa	IL-23
PPAR SIGNALING	6.205	1.020	0.000	0.092	1.950	0.000	2.685
CYTOKINE CYTOKINE RECEPTOR INTERACTION	4.550	1.131	0.000	8.271	1.950	18.453	19.899
JAK/STAT SIGNALING	3.858	0.596	0.000	2.947	0.416	9.129	10.866
T CELL RECEPTOR SIGNALING	3.829	0.000	0.000	0.020	0.000	1.734	6.713
CHEMOKINE SIGNALING	2.921	0.000	0.000	5.195	0.942	4.127	15.619
CELL ADHESION MOLECULES (CAMS)	2.329	0.000	0.000	4.175	0.000	3.025	7.956
ADIPOCYTOKINE SIGNALING	1.817	0.000	0.000	0.113	0.000	0.348	4.281
NATURAL KILLER CELL MEDIATED CYTOTOXICITY	1.217	0.000	0.000	1.066	0.000	2.289	7.959
BIOSYNTHESIS OF UNSATURATED FATTY ACIDS	1.217	2.206	3.937	0.000	2.432	0.000	0.347
COMPLEMENT AND COAGULATION CASCADES	1.104	0.000	0.000	2.010	0.106	0.005	0.700
TOLL LIKE RECEPTOR SIGNALING	0.883	0.000	0.000	0.044	0.126	2.617	3.750
LEUKOCYTE TRANSENDOTHELIAL MIGRATION	0.734	0.000	0.000	4.713	0.000	0.371	5.774
FC EPSILON RI SIGNALING	0.556	0.397	0.000	3.006	0.460	0.948	3.803
RETINOL METABOLISM	0.541	4.521	0.000	0.167	6.670	4.919	2.774
B CELL RECEPTOR SIGNALING	0.369	0.000	0.000	1.436	0.000	0.053	4.257
HEDGEHOG SIGNALING	0.000	1.669	0.000	0.000	0.000	0.000	2.227
MELANOGENESIS	0.000	1.020	0.000	0.000	0.000	0.000	2.786

ACCEPTED MANUSCRIPT