GEO Publications

Series GSE74446

Status	**Private until Jan 02, 2017**
Title	Placental Gene Expression in Response to Histamine and Oxygen
Organism	Homo sapiens
Experiment type	Expression profiling by array
Summary	Maternal Blood histamine levels are tightly controlled in normal pregnancy. However, in specific complications of human pregnancy such as pre-eclampsia the levels of both placental and maternal blood histamine increase. Increasing blood histamine levels nonetheless, have been associated with oxidative stress, endothelial dysfunction, abnormal tissue growth, and Th1/TH2 imbalance, which are also linked to pre-eclampsia. Little is known of the molecular responses in the placenta to the prolonged exposure to increasing histamine levels in the presence of changing oxygen concentrations. We used microarray to detail the global programme of placental gene expression in response to histamine and oxygen and identified distinct classes of regulated genes underlying the molecular functions of histamine in the placenta.
Overall design	Term (weeks 38 -40) placental micro explants from normal singleton pregnancies delivery by Elective Caesarean Sections were incubated in 8% (PL 8%) or 20% (PL 20%) oxygen for 6 days with (PL 8%-Treat or PL 20%-Treat) or without (PL 8%-Con or PL 20%-Con) histamine and aminoquanidine.
Contributor(s)	Brew OB, Sullivan MH
Citation missing	*Has this study been published? Please update or notify GEO.* *Note that private accession will be released, in accordance to guidelines.*
NIH grant(s)	Add grant

Submission date	Oct 28, 2015
Last update date	Mar 18, 2016
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Platforms (1) GPL570 [HG-U133_Plus_2] Affymetrix Human Genome U133 Plus 2.0 Array

Samples (21)
Less...

GSM1920834 PL 3 20% C
GSM1920835 PL 2 8% C
GSM1920836 PL 1 8% C
GSM1920837 PL 1 20% TREAT
GSM1920838 PL 2 20% TREAT
GSM1920839 PL 6 20% C
GSM1920840 PL 5 8% C
GSM1920841 PL 3 8% TREAT
GSM1920842 PL 5 20% C
GSM1920843 PL 4 8% C
GSM1920844 PL 4 20% TREAT
GSM1920845 PL 4 20% C
GSM1920846 PL 6 8% TREAT
GSM1920847 PL 1 20% C
GSM1920848 PL 2 20% C
GSM1920849 PL 5 8% TREAT
GSM1920850 PL 4 8% TREAT
GSM1920851 PL 3 20% TREAT
GSM1920852 PL 6 20% TREAT
GSM1920853 PL 5 20% TREAT
GSM1920854 PL 2 8% TREAT

Relations

BioProject PRJNA300430

Title	Placental Gene Expression in Response to Histamine and Oxygen
Sample type	RNA
Source name	Term (weeks 38 -40) placental explant from normal singleton pregnancies delivery by Elective Caesarean Sections
Organism	Homo sapiens
Characteristics	tissue: placenta treatment: Placental Explant in 20% Oxygen_Control
Treatment protocol	Micro explants were treated 8% oxygen (8% oxygen, 5% CO2) or 20% oxygen (95% air; 5% CO2) at the liquid-gas interface. All tissues were incubated at 37°C in standard media for 5 days, followed by a final media change on day 5, with basic only or media containing 100nM histamine in the presence of aminoguanidine (10-4 M final concentration), and incubated for further 24 hours.
Growth protocol	Placental micro explants (<50 mg wet weight) were each placed on a mesh support in a 12-well culture plate containing 15mm diameter Netwell inserts with 74µm polyester mesh bottoms attached to polystyrene inserts, and cultured at 37°C in Standard medium made of RPMI 1640 medium, (containing 25mM HEPES for buffering against changes in pH), supplemented with 10% fetal calf serum, 10ml/L insulin transferrin selenium (ITS), 2mM L-glutamine, penicillin (100 IU/ml) and streptomycin (100 µg/ml)
Extracted molecule	total RNA

Extraction protocol	Trizol extraction of total RNA was performed according to the manufacturer's instructions.
Label	biotin
Label protocol	cDNA was fragmented and labelled using the FL-Ovation™ cDNA Biotin Module V2. The enzymatically and chemically fragmented product (50-100 nt) was labelled via the attachment of biotinylated nucleotides onto the 3'-end of the fragmented cDNA.
Hybridization protocol	The resultant fragmented and labelled cDNA was added to the hybridisation cocktail in accordance with the NuGEN™ guidelines for hybridisation onto Affymetrix GeneChip® arrays, and hybridised for 16-18 hours at 45°C in an Affymetrix GeneChip® Hybridisation Oven 640.
Scan protocol	Following hybridisation, the array was washed and stained on the GeneChip® Fluidics Station 450 using the appropriate fluidics script, before being inserted into the Affymetrix autoloader carousel and scanned using the GeneChip® Scanner 3000.
Description	Gene expression data from term placental explant cultured in 20% oxygen for 6 days. S0365F026
Data processing	The data were analyzed with Robust Multi-array Average (RMA) algorithm. A background correction on the PM data (Perfect Match) was performed, then applied log2 transformation and a quantile normalization and followed by summarization of the probe set information using Tukey's median polish algorithm

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Platform ID	GPL570
Series (1)	GSE74446 Placental Gene Expression in Response to Histamine and Oxygen

Data table header descriptions

ID_REF

VALUE RMA signal intensity

Data table

ID_REF	VALUE
117_at	7.50478363
121_at	5.584467411
1552283_s_at	4.554630756
1552301_a_at	8.559398651
1552309_a_at	7.733915806

1552316_a_at	4.929325104
1552325_at	3.667836666
1552326_a_at	5.248970032
1552365_at	8.851099014
1552367_a_at	6.889646053
1552389_at	4.902846813
1552398_a_at	4.236886978
1552400_a_at	6.249483585
1552455_at	2.250261784
1552470_a_at	5.061270237
1552485_at	5.675517559
1552487_a_at	5.002053261
1552489_s_at	4.361513615
1552496_a_at	7.547087193
1552509_a_at	2.953812599

Total number of rows: **6671**

Table truncated, full table size **147 Kbytes**.

Supplementary file	Size	Download	File type/resource
GSE74446_RAW.tar		(http)(custom)	TAR (of CEL)

Raw data provided as supplementary file

Processed data included within Sample table