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### Systematic and Phylogenetic Analysis of the Ole e 1 Pollen Protein Family Members in Plants

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#### 1. Introduction

Pollen allergens are specific substances able to cause IgE-mediated hypersensitivity (allergy) after contact with the immune system [D'Amato et al. 1998]. To date, about 50 plant species have been registered in the official allergen list of the International Union of Immunological Societies (IUIS) Allergen Nomenclature Subcommittee http://www.allergen.org as capable of inducing pollen allergy in atopic individuals [Mothes et al. 2004]. These plants are usually grouped as (1) trees (members of the orders: *Fagales, Pinales, Rosales, Arecales, Scrophulariales, Junglandales, Salicales, and Myrtales*), (2) grasses (members of the families: *Bambusioideae, Arundinoideae, Chloridoideae, Panicoideae,* and *Poideae*), and (3) weeds (components of families *Asteraceae, Chenopodiaceae* and *Urticaceae*) [Hauser et al. 2010].

Allergens are proteins with a broad range of molecular weights (~5 to 50 kDa), which exhibit different features of solubility and stability. More than 10 groups of pollen allergens have been reported. Among all groups of pollen allergens, Pollen Ole e I (Ole) domain-containing proteins are the major allergens, included like-members of the "pollen proteins of the Ole e 1 family" (Accession number: PF01190) within the Pfam protein families database [Finn et al. 2010].

Ole e 1 was the first allergen purified from *Olea europaea* L. [Lauzurica et al. 1998] and named as such according to the IUIS nomenclature [King et al. 1994]. This protein is considered the major olive pollen allergen on the basis of its high prevalence among atopic patients and the high proportion it represents within the total pollen protein content, in comparison with other olive pollen allergens. These include at present another 10 allergens already identified and classified like Ole e 2 to Ole e 11 [Rodríguez et al. 2002, Barral et al. 2004, Salamanca et al. 2010]. Ole e 1 consists of a single polypeptide chain of 145 amino acid residues with a MW of 18–22 kDa, displaying acidic pI and different forms of N-glycosylation [Villalba et al. 1990, Batanero et al. 1994]. Heterologous proteins with a relevant homology have been described in other members of the *Oleaceae* family, such a fraxinus, lilac, jasmine and privet. The polypeptides encoded by the *LAT52* gene from tomato and the *Zmc13* gene from maize pollens also exhibit a high similarity to Ole e 1 [Twell et al. 1989, Hanson et al. 1989]. These plant pollen proteins are structurally related but their biological function is not yet known; though they have been suggested to be

involved in important events of pollen physiology, such as hydration, germination and/or pollen tube growth, and other reproductive functions [Alché et al. 1999, 2004, Tang et al. 2000, Stratford et al. 2001].

Structurally, the Ole domain contains six conserved cysteines which may be involved in disulfide bonds, since no free sulfhydryl groups have been detected in the native protein [Villalba et al. 1993]. Olive Ole e 1 exhibits a high degree of microheterogeneity, mainly concentrated in the third of the molecule closer to the N- terminus. The Ole e I (Ole) domain defining the pollen proteins Ole e I family signature or consensus pattern sequences PS00925 [Sigrist et al. 2010], is characterized by the amino acid sequence [EQT]-G-x-V-Y-C-D-[TNP]-C-R, where "x" could be any residue.

There is a high diversity of proteins sharing the Ole domain among plant species. To date, eleven Ole domain-containing genes have been isolated and characterized from olive pollens [Rodríguez et al. 2002]. Ole-containing proteins include proline-rich proteins, proteins encoding extensin-like domains, phosphoglycerate mutase, tyrosine-rich hydroxyproline-rich glycoprotein, and hydroxyproline-rich glycoprotein. These Ole-containing proteins can exhibit: (1) the pollen Ole signature exclusively, e.g. the ALL1\_OLEEU P19963 protein from *Olea europaea* L., (2) both the pollen Ole signature and the replication factor A protein 3 motive pattern (PF08661), e.g. the O49527 pollen-specific protein-like from *Arabidopsis thaliana* (842 residues), (3) both the pollen Ole domain and the phosphoglycerate mutase (PGAM) motif, e.g. the Q9SGZ6 protein from *Arabidopsis thaliana*., and finally (4) both the pollen Ole signature and the reverse transcriptase 2 (RVT2) motif, e.g. the A5AJL0 protein from *Vitis vinifera*.

Several efforts have been made to develop an understandable and reliable systematic classification of the diverse and increasing number of different allergen protein structures. As mentioned above, the classification system widely established for proteins that cause IgE-mediated atopic allergies in humans (allergens) was defined by Chapman et al. (2007). This system uses the first three letters of the genus; a space; the first letter of the species name; a space and an Arabic number. Despite this classification system, protein databases are full of allergen proteins lacking this systematic and comprehensive nomenclature. In other cases, many of the proteins described here have not been described as allergens, or their naming makes no reference to the Ole e 1 family that facilitates their identification. Otherwise, naming in databases is frequently given randomly, on the basis of chromosome location, addressing structural features and functional characterizations or simply using the name of the entire family. In this study, we used a combination of functional genomics and computational biology to name and classify the entire Ole e 1 family, as well as to characterize structurally and functionally the proteins of this superfamily. Our data indicate that the Ole e 1 protein family consists of at least 109 divergent families, which will likely expand as more genomic studies are undertaken, and fully sequenced plant genomes become available.

#### 2. Material and methods

#### 2.1 Database search for Ole e 1 family genes

Sequences of Ole e 1 and Ole e 1-like genes were retrieved from the US National Center for Biotechnology Information (NCBI, http://www.ncbi.nlm.nih.gov/), the Uniprot database (http://www.uniprot.org/), and the non-redundant expressed sequence tag (EST)

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databases using BLASTX, BLASTN and BLAST (low complexity filter, Blosum62 substitution matrix) [Altschul et al. 1997]. Searches were conducted using previously characterized Olea europaea L. Ole e 1 (GenBank Accession number P19963), Solanum lycopersicum LAT52 (GenBank Accession number P13447), Zea mays Zmc13 (GenBank Accession number B6T1A9), Arabidopsis thaliana pollen-specific protein-like (GenBank Accession number O49527), Arabidopsis thaliana PGAM containing domain protein (GenBank Accession number Q9SGZ6), and Vitis vinifera RVT2 containing domain protein (GenBank Accession number A5AJL0). Full-length amino acid sequences for Ole e 1 proteins were compiled and aligned using ClustalW [Thompson et al. 1994]. Genetic distances between pairs of amino acid sequences were calculated with Bioedit V7.0.5.3 [Hall 1999]. Consensus protein sequences were derived from these original alignment, and further analyzed for the presence of putative functional motifs using the PROSITE database [Sigrist et al. 2010], of biologically meaningful motif descriptors derived from multiple alignments and the ScanProsite program [de Castro et al. 2006], from the Expert Protein Analysis System (ExPASy) proteomics server of the Swiss Institute of Bioinformatics [Gasteiger et al. 2003]. Finally, the consensus protein sequences were submitted to BLASTP analysis to identify homologous proteins from other plant species.

#### 2.2 Revised/unified nomenclature

In order to provide a revised and unified nomenclature for Ole e 1-like gene superfamily, we developed a sequence-based similarity approach to classify all the retrieved sequences using a previously developed gene nomenclature model [Kotchoni et al. 2010]. For this new nomenclature, Ole e 1 protein sequences that are more than 40% identical to previously identified Ole e 1 sequences compose a family, and sequences more than 60% identical within a family, compose a gene subfamily. Protein sequences that are less than 40% identical would describe a new Ole e 1 gene family. Taking olive protein Ole e 1\_57A9 (previous name Ole e 1, major olive pollen allergen) as an example for the revised nomenclature (Table 1), Ole e 1 indicates the root; the digits (57) indicates a family and the first letter (A) a subfamily, while the final number (9) identifies an individual gene within a subfamily. The revised nomenclature is therefore composed of an assigned gene symbol (Ole e 1) (abbreviated gene name) for the whole gene superfamily. The gene symbol must be (i) unique and representative of the gene superfamily; (ii) contain only Latin letters and/or Arabic numerals, (iii) not contain punctuation, and (iv) without any reference to species. These newly developed criteria have been applied to database curators to generate the unified Ole e 1 gene families/classes regardless of the source of the cloned gene(s).

#### 2.3 Sequence alignments and phylogenetic analyses

The retrieved Ole e 1 protein families were used to generate a phylogenetic tree using ClustalW [Thompson et al. 1994]. The alignment was created using the Gonnet protein weight matrix, multiple alignment gap opening/extension penalties of 10/0.5 and pairwise gap opening/extension penalties of 10/0.1. These alignments were adjusted using Bioedit V7.0.5.3 [Hall 1999]. Portions of sequences that could not be reliably aligned were eliminated. Phylogenetic tree was generated by the neighbourjoining method (NJ), and the branches were tested with 1,000 bootstrap replicates. The three was visualized using Treedyn program [Chevenet et al. 2006].

#### 2.4 Ole e 1 superfamily: Protein modeling and structural characterization

In order to study the structural and conformational variability between the Ole e 1 protein families, selected members of the Ole e 1 superfamily were modelled using SWISS-MODEL server, via the ExPASy web server [Gasteiger et al. 2003]. The initial modelled Ole e 1 structures were subjected to energy minimization with GROMOS96 force field energy [van Gunsteren et al. 1996] implemented in DeepView/Swiss-PDBViewer v3.7 [Guex and Peitsch 1997] to improve the van der Waals contacts and to correct the stereochemistry of the improved models. The quality of the models was assessed by checking the protein stereology with PROCHECK [Laskowski et al. 1993] and the protein energy with ANOLEA [Melo et al. 1997, 1998]. Ramachandran plot statistics for the models were calculated to show the number of protein residues in the favoured regions.

#### 3. Results

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#### 3.1 The Ole e 1 protein families: Revised and unified nomenclature

In order to provide a revised/international consensus and unified nomenclature for the Ole e 1 gene superfamily, we first retrieved all the Ole e 1 and Ole e 1-like gene sequences using PS00925 as the major molecular consensus defining the entire superfamily of Ole e 1 proteins. We next verified all annotated plant Ole e 1 open reading frames (ORFs) using Ole e 1 sequence domains. A complementary and comparative study was developed by using Uniprot database to validate the molecular function and previous denomination of each Ole e 1 protein. Our searches resulted in the identification of 571 sequences encoding Ole e 1 and Ole e 1 like proteins from a wide variety of plant species, with the diagnostic motif PS00925 (Table 1). According to the established criteria (see Material and Methods), these sequences integrated 109 Ole e 1 gene families which have been attributed to different functional categories including extensins and extensin-like proteins, proline-rich hydroxyproline-rich tyrosine-rich/hydroxyproline-rich proteins, glycoproteins, glycoproteins, hydrolases, phosphoglycerate mutases, arabinogalactan proteins, etc. (Table 1).

Among the sequences retrieved, Ole e 1\_48 is the most extensive family with 63 gene members encoding for different pollen-specific protein C13 homologues, followed by Ole e 1\_57 family with 42 gene homologues encoding Ole e 1 (the olive major pollen allergen), Ole e 1\_16 with 26 gene members encoding proline-rich proteins, and Ole e 1\_52 with 22 members encoding LAT52 homologues (Table 1). The number of Ole e 1 genes greatly varied from one plant species to another. The genus *Oryza* included the highest number of Ole e 1 genes (143), followed by *Arabidopsis* with 95 genes (Table 1). At present, more than half of the catalogued Ole e 1 families encoded a single Ole e 1/Ole e 1-like gene, which was in most cases "uncharacterized" (Table 1).

The total number of genes in the Ole e 1 superfamily is expected to increase steadily with time, mainly due to the genomic sequencing of additional species like *Olea europaea* L. (http://www.gen-es.org/11\_proyectos/PROYECTOS.CFM?pg=0106&n=1). Regardless of the plethora of Ole e 1 genes yet to be identified/characterized, their classification and relationship to the entire extended Ole e 1 gene superfamily will be easy owing to this nomenclature building block that catalogues newly identified/characterized Ole e 1 gene products only on the basis of sequence similarity to previously characterized Ole e 1 gene products.

Tie a 1 Family	Rement	Previous annotalion	GensBank Accession Number	Smarte
1	Ole et SAI	A14g1/215	QERXZE	ARATH
4	Ole et 1A2		Q8L8V8	ARATH
1	Ole s1_1A3	ARALYDRAFT_493155	D7MC15	ARALY
1	Ole s 1_1A4	40,100006	Q2A9B5	BRAOL
1	Q10 e 1_1A5	31,100008	Q2A9F3	BRADE
1	Qie e 1_181	ARALYORAFT_403053	DTLEFT	ARALY
1	Qia e 1_182	At2g40113	Q58FY6	ARATH
1	Ole s 1_183		QHLE52	ARATH
1	Ole # 1_184	AI5g47635	Q29PT1	ARATH
1	Ofe e 1_185	ARALYDRAFT_330672	D7MP26	ARALY
2	Die et_2AT	POPTRORAFT_818926	BUHCDO	POPTR
2	Qis e1_2A2	POPTRDRAFT 176772	BOINTE	POPTR
2	Ole a 1_7B1	VIT_00005138001	D/SSK6	VITVI
2	Ole e 1_2C1	*	CETJER	SOVEN
2	Ole s 1_201	RCOM_UE60270	BSSAFD	RICCO
3	Ole e 1 JA1	Osi_33016	B8BG44	ORYS
3	Die e 1_3A2	Os10g0206500	Q109X3	ORYSJ
3	Ola e 1 381	OSJNBa0014J14_3	Q7G7E7	ORVSJ
3	Qie e 1 382	OJ1004_F02.9	Q8RV11	ORYSJ
3	Ole # 1_3C1	OSJNBa0014J14.29	QSSSUO	ORYSJ
3	Ole e 1_3D1	Ost0g0209600	Q10931	ORYSJ
3	Q10 0 1_3D2	Ost_33026	B88053	ORYS
3	Ole # 1_JE1	SORBIDRAFT_01g013620	CSWR76	SOABI
3	Qie e 1_3F1	and the second sec	BAFESE	MAIZE
- A -	Ole e 1_4A1	SELMODRAFT_444621	DBSBK5	SELML
4	Ole a 1_4A2	SELMODRAFT_4433115	DSSOX9	SELML
5	Ole e 1_5A1	ARALYDRAFT_4IN639	D7LGX1	ARALY
5	Die e1 SAZ	A17g27385	OGNLES	ARATH
5	Ole e 1_5B1	÷2	C65VUS	SOYBN
5	Qie e 1 587		CHTUFA	SOYEN
5	Ole # 1_8C1	*	C65201	SOYBN
5	Ole s 1_5D1	POPTRORAFT_821599	A9P157	POPTR
5	Ole e 1_5D2	RCOM_1281870	BUSCW4	RICCO
5	Ofe e 1_5D3	VIT16V_031997	ASBV12	VITVI
5	Diee1_5E1	AL5g22430	QSFMQB	ARATH
5	Ole e 1_5EZ	-	QBL914	ARATH
5	Qle e 1_5E3	ARALYDRAFT_351256	D7MeX5	ARALY
C	Ole s 1_BA1	× .	B6TL01	MAIZE
5	Oin a 1_6AZ		B4FQB6	MAIZE

Ola e 1 Fandly	Revision	Previous annotation	GoneBone Accession	Source
6	Oin e 1, 651		BETXHS	MAIZE
- 6	Ole e 1 BC1	Sti04g021840	C5XTZ8	SORE
6	Ote e 1 601	B1136H02.23	Q6EPW8	ORYSJ
7	Ole e 1 7A1	SELMODRAFT 405039	DEQYEE	SELML
1	Ole e 1 7A2	SELMODRAFT 414879	D8RTV5	SELML
8	Dine 1 BA1	SELMODRAFT 448129	DET4Z3	SELML
8	Gie e 1, 861	SELMODRAFT 409805	DERCH	SELML
8	Olu e 1_BC1	SELMOORAFT 448128	D8T4Z1	SELML
9	Qie e 1 BA1	A/2g21140	QSSKPS	ARATH
9	Ole e 1_BAZ	Proline-rich protein 2	Q9M7P0	ARATH
9	Ola e 1 9A3	ARALYDRAFT 906523	D7LL03	ARALY
9	Oin e 1 981	Extensin-like protein	Q9M676	ARATH
9	Ole e 1 982	Fmilme-rich protein 4	Q9M7N8	ARATH
Э	Ole e 1 983	AT4038770/T6A14 50	QUINS	ARATH
y	Ole o 1 964	ARALYORAFT 490841	D7MFN2	ARALY
10	Ofe e 1_10A1	Proline-rich protein	Q9M6T7	NICGL
10	Ofe e 1 1081	VIT 08024051001	D7U5A0	VITVI
10	Ola #1 1082	POPTRDRAFT 200888	BUHRAS	POPTR
10	Qle u 1 10C2	POPTRDRAFT 195015	B9H154	POPTR
10	Ole # 1 10D2	RCOM 0660490	BBSTC5	RICCO
11	Ole e 1 11A1	Proline-rich protein	082068	SOLTU
12	Ole # 1_12A1	VITISV_029841	A5BOP2	VITVI
13	Die e 1_13A1	VITISV 029038	ASBOP1	VITVI
13	Qin a 1 13AZ	VITISV 029817	ASBOPO	VITVI
43	Ol# e 1_13B1	VIT_00024076001	D7U597	VITVI
14	Olv a 1_14A1	proline-rich protein	QB3WF4	ORYSA
14	ON# # 1_14A2	011000149100	C7.5771	ORYSJ
14	Ole 6 1 14A3	proline-rich protein	Q93WL9	ORYSA
14	Ole e 1_14Ai	Os10g0149800	Q7XGT3	ORYSJ
14	Oln #1_14A5	proline-rich protein	Q94H18	ORYSA
14	Ole s 1_14A6	Os10g0149200	Q/XGT1	ORVSJ
14	Ole # 1_14A7	053_30733	A3CZJB	ORYSJ
14	Ole e 1_14A8	Ost_12924	AZXKER	ORYSI
14	Die e 1_14A9	Osi_12923	A2XKE7	ORYSI
14	Gie a 1_14A10	Osl_12971	BRAP23	ORYSI
14	Gia e 1_14A11	OSUNBa0031A07.6	Q84H17	ORVSA
14	Qie e 1_14A12	051_30737	A3C7K3	ORYSJ
14	Ole e 1_14A13	Os10g0149400	Q7XGT0	ORYSJ
14	GIRG T TAATA	051 30734	A3C2K0	ORYSJ

Table 1. The Ole e 1 protein superfamily: new and unified nomenclature. ARATH: Arabidopsis thaliana; ARALY: Arabidopsis lyrata; BETPN: Betula pendula; BRAOL: Brassica oleracea; BRARP: Brassica rapa; CAPAN: Capsicum annuum; CARAS: Cardaminopsis arenosa; CHE1: Chenopodium album; CROSA: Crocus sativus; DAUCA: Daucus carota; EUPPU: Euphorbia pulcherrima; FRAEX: Fraxinus excelsior; GOSBA: Gossypium barbadense; GOSHE: Gossypium herbaceum; GOSHI: Gossypium hirsutum; GOSKI: Gossypioides kirkii; HYAOR: Hyacinthus orientalis; LigVu: Ligustrum vulgare; LILLO: Lilium longiflorum; LOLPE : Lolium perenne; MAIZE: Zea mays; MEDTR: Medicago truncatula; NICAL: Nicotiana alata; NICGL: Nicotiana glauca; NicLa: Vitis pseudoreticulata; OleEu: Olea europaea; ORYSI: Oryza sativa; PETCR: Petroselinum crispum; PETHY: Petunia hybrida; PHAVU: Phaseolus vulgaris; PHEPR : Phleum pratense; PHYPA: Physcomitrella patens; PICSI: Picea sitchensis; PLALA: Platanus lanceolata; POPTR: Populus trichocarpa; RICCO: Ricinus communis; SALKA: Salsola kali; SAMNI: Sambucus nigra; SELML: Selaginella moellendorffii; SOLLI: Solanum lycopersicum; SOLTU: Solanum tuberosum; SORBI: Sorgum bicolor; SOYBN: Glycine max; TOBAC: Nicotiana tabacum; TRISU: Trifolium subterraneum; VITVI: Vitis vinifera; 9ROSI: Cleome spinosa; (-): uncharacterized.

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15	Ole # 1_15A1	053_30735	A3C2K1	ORYSJ	10	Ofe # 1_19E3	Profine-rich protein	B4FQ36	MAIZE
16	Dia e 1_16A1	proline-rich protein	Q94H17	ORYSA	20	Ole e 1_20A1	proline-rich protein	Q94684	ORYSA
16	Ola = 1 1842	proline tith gratein	ASN1C7	ORVSI	20	Ola a 1 2042	0+10-0141700	OZXGTE	OFVS.I
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16	Ole e 1_1fiA4	Osl_32757	A22531	ORYSI	21	Ole 91_21A1	Qsl_10730	AZXEH3	ORYSI
16	Ole u 1_16A5	proline-rich protein	Q94H09	ORYSA	21	Ole e 1 21A2	Os03g0245300	Q10P64	ORYSJ
16	Ole # 1 16AE	0410-01150200	073692	08781	74	Ole # 1 2181	Sb05c041220	C5W076	SORRI
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15	Ole e 1_16AS	prollowrich protein	094H10	ORVSA	27	Ole e 1_22A1	Osl_04802	AZWXZ6	ORVSI
16	Ole # 1 16A9	Os10g0150700	Q7XGS3	ORV5.	22	Ola # 1 22A2	Os01p9899700	Q5N8V8	ORVSJ
16	Ofe e 1 16410	Oct 32759	A27533	ORYS	37	Ole a 1 2741	Sb03o042800	COVERA	SORRI
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19	CIP 0 1_19A11	proune-rich protein	ABINZED	ORTSI	4.2	Die 0 1 23A3	SELMODRAFT_448871	USTAV4	SELML
16	Ofe # 1.15A12	proline-rich protein	Q94H11	ORYSA	- 24 -	Ole e 1_24A1	SELMODRAFT_449207	DITOPE	SELML
16	Oin a 1 35A13	Os10g0150600	Q7GBX3	ORYSJ	25	Ole a 1 25A1	OH-proline-rich glycoprotein	009085	PHAVU
16	Ole # 1 16A14	Proline sich pustelo	AGN177	ORVSI	26	Ois et 26A1	Typ. Off-proline-tich plycoprof.	040793	PETCA
2.0	Charles active	5-1 33960	499177	DEVE		Blood 3344	API HODBATT HININ	BARRAN	
- 10	CIE 9 1_10A10	091_32(38	A46331	UNYSI		Die 81_2/A1	SELMODRAFT_41948/	083830	SECHOL
16	Qie e 1_15A16	Os1_32768	BRBFR/	ORVSI	27	Ola 91_27A2	SELMODRAFT_427121	DESYKS	SELML
16	Ofe e 1_10A17	LOC_0+10005990	Q33816	ORYSJ	28	Qie e 1 28A1	SELMODRAFT 441903	DERNMO	SELML
16	Ole # 1 1681	Proline-rich protein	Q94H13	ORVSA	78	Ole e 1 28A2	SELMODRAFT 430005	087309	SELML
40	OI	0-40-0460100	OIVORE	CAVEL	20	Dises 3mbr	PRIMACODAET INDES	Depost	PT1 841
10	Qie e 1_1687	091080150200	47,4035	United	18	Qie e 1_2051	SELMOURAP1_435053	USRUUZ	SELML
16	Ole # 1_16B3	094_32756	AZ2530	OHVSI	28	Ole n 1 2/182	BELMODRAFT_449338	0817-68	SELML
16	Gie #1_16C1		BESJAA	MAIZE	28	Ola # 1 28A1	SELMODRAFT_438058	DSR009	SELML
16	Ole s 1 16C2		BSTBY5	MAIZE	29	Ola s 1 78A2	SELMOORAFT 439721	DSR5C2	SELML
10	Dia # 5 35/73	Broline sich sectors	BETTIN	MADE	10	Ole at 3044	SELMODRAST Januar	DETION	SEI MI
10	010 0 1 1003	Proine arch protein	DOILLA	MALE		Chara 1 30M1	SECILO DILAP. 1_443085	Lin Lettax	GELML
16	Qie e 1_16C4	5001g026190	CSWP19	SORBI	31	Ola e 1_31A1	SELMODRAFT_413728	DSRQ13	SELML
16	Ote a 1 16D1		BEUBAS	MAIZE	31	Ole a 1 31A2	SELMODRAFT 416536	DIRZL3	BELML
16	Ole a 1 15E1		COPAE?	MAIZE	32	Ole a 1 37A1	SELMODRAFT 416534	DIRZII	SELMI
4.1	Okend AZAd	Ebolentente	CAMIDAL	8088	32	Diand ATAT	SELMODEALT 413730	DECAS	PEL MI
- 17	OID 01_17A1	adurguesuru	COVER	SONDI	32	Ole 9 1 JEAZ	SECHODICAPT_413730	DANGID	actmt
17	Qie e 1_17A2	Proline-rich protein	QUSBX4	MAIZE	33	Ole e 1_33A1	ARALYDRAFT_488422	D/M/G1	ARALY
18	Ole e 1_18A1	50010026170	C5WPte	SORBI	33	Ole e 1_33AZ	AL5g15780	Q9LFU8	ARATH
19	Die # 1 13A1	proline-rich protein	094686	ORVSA	33	Die e 1 3381	Contraction of the second s	O1KUY6	98051
40	Ole a 1 1047	0+10-0145100	OTXOTO	OFVEL	3.4	Dis a 1 3441	Bollon Cis a Lallergeolecteorie	034250	MEDTR
10	OIL & A DATE	CISTAGUTANTOD	Gradio	United		Ole D. L. Jaket	Politici cas e i ante gerricitatism	sachoes	MCUTA
10	CARL I & BIO	OsJ_30727	89G7.J2	ORYSJ	34	Ole #1.34B1		B7FKI5	MEDTR
19	Qie e 1_19A4	Oct_32749	A72574	ORYSI	34	Ole 91_34C1	RCOM_0790500	1895#V7	RICCO
19	Ole a 1 1981		C4JAB8	MAIZE	34	Ole e 1 3401	VIT 00036543001	D72MN1	VITVI
àà	Ole # 1_35A1	MirDRAFT_AC172742021v1	A20679	MEDTE	47	Ois e 1_47A2	Os12y0472800	920852	ORYSJ
35 36	Ole e 1_35A1 Ole e 1_36A1	MUDRAFT_AC172742523v1 POPTRDRAFT_SE4521	AZQ625 B9N7M0	MEDTR	47	Ois e 1_47A2 Ois e 1_47B1	Ost2g0472800	Q2QR52 B4FY58	ORYSJ
36 37	Ole # 1_35A1 Ole # 1_36A1 Ole # 1_36A1	MirDRAFT_AC172742g21v1 POPTRDRAFT_584621 Ovt_53013	A2Q629 B9N7M0 A2Z5T3	MEDTR POPTR ORYSI	47	Ois e 1_47A2 Ois e 1_47B1 Ois e 1_47B2	Ds12g0472800	Q2QR52 B4FY58 B6TZW5	ORYSJ MAIZE MAIZE
35 36 37 37	Ole # 1_35A1 Ole # 1_36A1 Ole # 1_37A1 Ole # 1_37A2	MirDRAFT_AC172742g29v1 POPTRDRAFT_S84521 Okt_33013 Ost1060205700	A2Q629 B9N7M0 A2Z5T3 QURV00	MEDTR POPTR ORYSI ORYSI	47 47 47 47	Ois e 1_47A2 Ois e 1_47B1 Ois e 1_47B2 Ois e 1_47B2	0s12g0472800 Sci0011s012840	Q2QR52 B4FY58 B6TZW5 C6JRP6	ORYSJ MAIZE MAIZE SORBI
35 36 37 37 37	Ole = 1_35A1 Ole = 1_36A1 Ole = 1_37A1 Ole = 1_37A2 Ole = 1_37A2	MirDRAFT_AC172742g23y1 POPTRORAFT_S64621 Owt_33013 Oct10g62065700 Oct_96257	A2Q629 B9N7M0 A2Z5T3 QBRV00 A2VMD0	MEDTR POPTR ORYSI ORYSI	47 47 47 47	Ois e1_47A2 Ois e1_47A1 Ois e1_47B1 Ois e1_47B2 Ois e1_47B2	Os12g0472800 	Q2QR52 B4FV58 B612W5 C6JRP6 C0PAV0	ORYSJ MAIZE MAIZE SORBI MAIZE
36 36 37 37 37	Ole = 1_35A1 Ole = 1_36A1 Ole = 1_37A1 Ole = 1_37A2 Ole = 1_37A3	MirDRAFT_AC172742g21v1 POPTNDRAFT_S84524 Oct.33013 Oct0g0205700 Oct_25237	A2Q629 B9N7M0 A2Z5T3 QBRV00 A2YM00	MEDTR POPTR ORYSI ORYSI ORYSI	47 47 47 47 47 47	Ois e1 47A2 Ois e1 47B1 Ois e1 47B2 Ois e1 47B3 Ois e1 47B3 Ois e1 47B3	Os12g0472800 S00011s012840	Q2QR52 B4FV58 B6TZW5 C8JRP6 C8PAV0	ORYSJ MAIZE MAIZE SORBI MAIZE
36 36 37 37 37 37	Ole e 1 35A1 Ole e 1 36A1 Ole e 1 37A1 Ole e 1 37A2 Ole e 1 37A3 Ole e 1 37A3	MirDRAFT_AC172742g21v1 POPTRORAFT_564624 O4_33013 O410g0205700 O4_26257 O5J_31017	A2Q629 BSN7M0 A2Z5T3 QURV00 A2VM00 A3C3E5	MEDTR POPTR ORYSI ORYSI ORYSI ORYSI	47 47 47 47 47 41	Oia e 1 47A2 Oia e 1 47B1 Oia e 1 47B2 Oie e 1 47B3 Oie e 1 47B3 Oie e 1 47B3 Oie e 1 47B3	Ost2y0472890 S00011s012840 Polien ole e 1 allergen	Q2QR52 B4FV58 B6TZW5 C6JRP6 C0PAV0 07M2T9	ORYSJ MAIZE MAIZE SORBI MAIZE ARALY
35 36 37 37 37 37 37	Ole e 1_35Å1 Ole e 1_36Å1 Ole e 1_36Å1 Ole e 1_37Å1 Ole e 1_37Å2 Ole e 1_37Å3 Ole e 1_37Å3	MirDRAFT_AC172742g21y1 POPTRDRAFT_S64521 Ovt_33013 Ovt0g0205700 Ovt_26257 Ovt_31017 Sb065g003010	A2Q629 BSN7M0 A2Z5T3 QURV00 A2YMD0 A3C3E5 G5Y4M4	MEDTR POPTR ORYSI ORYSI ORYSI ORYSI SORBI	47 47 47 47 47 47 47 48	Oin e1 47A2 Oie e1 47B1 Oie e1 47B2 Oie e1 47B3 Oie e1 47B3 Oie e1 47B3 Oie e1 47B3 Oie e1 48A1	Ost2y0472800 Sod011s012840 Polion ole e 1 allergen A15010130 Jike protein	Q2QR52 B4FV58 B6T2W5 C85RP5 C85RP5 C8PAV0 07M2T9 B7U959	ORYSJ MAIZE MAIZE SORBI MAIZE ARALY CARAS
35 36 37 37 37 37 37 37 37	Ole e1 35A1 Ole e1 35A1 Ole e1 37A1 Ole e1 37A2 Ole e1 37A2 Ole e1 37B1 Ole e1 37B1 Ole e1 37C1 Ole e1 37C1	MirDRAFT AC172742g21v1 POPTRDRAFT S48524 Ost_33013 Os10g0205700 Ost_26257 Ost_2507 Ost_25070	A20629 B9N7M0 A225T3 QURV00 A3C3E5 C5Y4M4 B4FWB4	MEDTR POPTR ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ SORBJ MAIZE	47 47 47 47 47 47 47 48 48	Oin e1 47A2 Oie e1 47B2 Oie e1 47B2 Oie e1 47B2 Oie e1 47B3 Oie e1 47B3 Oie e1 47B3 Oie e1 48A1 Oie e1 48A2 Oie e1 48A3	Ost2g0472800 S000115012840 Pollen ole e 1 allergen A15G10130 like protein A15g10130	Q20852 B4FY58 B6TZW5 C8JRP6 C0PAV0 07M2T9 B7U959 Q9LX15	ORYSJ MAIZE MAIZE SORBI MAIZE ARALY CARAS ARATH
35 36 37 37 37 37 37 37 38	Ois e1_35A1 Ois e1_36A1 Ois e1_37A1 Ois e1_37A2 Ois e1_37A3 Ois e1_37A3 Ois e1_37B1 Ois e1_37C7 Ois e1_37C7	MirDRAFT_AC172742g23y1 POPTRDRAFT_S84521 Ovt_53013 Ovt10g0205700 Ovt_26257 Ost_31017 S8065g003010	A2Q625 B5N7M0 A2Z5T3 Q3RV00 A3C3E5 C674M4 B4FW84 A5NK80	MEDTR POPTR ORYSI ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ SORBJ MAIZE PICSI	47 47 47 47 47 48 48 48 48	Oin e1,47A2 Oix e1,47B1 Oix e1,47B2 Oix e1,47B2 Oix e1,47B3 Oix e1,47B3 Oix e1,48A1 Oix e1,48A3 Oix e1,48A3 Oix e1,48A3	Ds12g0472806 S00011s012840 Pollen ole e 1 allergen A15g10130 like protein A15g10130	Q2QR52 B4FY38 B612W5 C8JRP6 C0PAV0 07M2T9 B70959 Q3LX15 C3JJ38	ORYSJ MAIZE SORBI MAIZE ARALY CARAS ARATH ARAAL
35 36 37 37 37 37 37 37 37 37 37 37 37 37 37	Ole e1 35Å1 Ole e1 36Å1 Ole e1 37Å1 Ole e1 37Å2 Ole e1 37Å2 Ole e1 37Å1 Ole e1 37Å1 Ole e1 37Å1 Ole e1 37Å1 Ole e1 37Å1 Ole e1 37Å1	MirDRAFT_AC172742g25v1 POPTRDRAFT_S84521 Ost_33013 Ost0g0205700 Ost_26237 Ost_31017 S005g003010	A20629 B9N7M0 A225T3 QURV00 A3C3E5 C6Y4M4 B4FWB4 A5WKB0 B042208	MEDTR POPTR ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ SORBJ MAIZE PICSJ PICSJ DICSJ	47 47 47 47 47 48 48 48 48 48 48 48	Ois e1,47A2 Ois e1,47B2 Ois e1,47B2 Ois e1,47B3 Ois e1,47B3 Ois e1,47B3 Ois e1,47B3 Ois e1,48A3 Ois e1,48A3 Ois e1,48A3 Ois e1,48A3	Ost2g0472800 S00011s012840 Pollen ole e 1 allergen AT6010130 Albe protein Al5g10130 Putalive pollen 01e e 1 allergen S00.05 e 10	Q20852 B4FY38 B4T2W5 C8JRP6 C8PAV0 07M2T9 B7U959 Q3LX15 C3UJ88 D4AP07	ORYSJ MAIZE MAIZE SORBI MAIZE ARALY CARAS ARATH ARAAL BRARP
35 36 37 37 37 37 37 37 37 37 37 37 37 37 37	Ole e1_35Å1 Ole e1_35Å1 Ole e1_37Å1 Ole e1_37Å2 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3	MirDRAFT_AC172742g23y1 POPTRORAFT_S64621 Ovt_33013 Ovt10g2005700 Ovt_26257 Ovt_2507 Sb05g003010	A20629 B9N7M0 A225T3 QURV00 A3C3E5 G5V4M4 B4FWB4 A5NKB0 A9NZN6 A9NZN6	MEDTR POPTR ORYSI ORYSI ORYSI ORYSI SORIBI MAZE PICSI PICSI PICSI	47 47 47 47 47 48 48 48 48 48 48	Oin e1 47A2 Oin e1 47A2 Oin e1 47B2 Oin e1 47B2 Oin e1 47B3 Oin e1 47B3 Oin e1 47B3 Oin e1 47B3 Oin e1 47B3 Oin e1 48B4 Oin e1 48B4	Os12g0472800 So0011s012840 Pollen ole e 1 allergen AT6G101304be protein Al5g10130 Putallive pollen Ole e 1 allergen 80A08_10	Q2QR52 B4FY38 B6T2W5 C8JRP6 C8JRP6 C8JRP6 C8JRP6 C8JRP6 O7M279 B7/0599 Q3LX15 C3UJ38 Q4ABQ7 S80E02	ORYSJ MAIZE SORBI MAIZE SORBI MAIZE ARAIZ ARAIZ ARAIZ ARAIZ ARAIX ARAAL BRARP BOOTO
115 36 37 37 37 37 37 37 37 37 38 38 38 38	Ole e1_35A1 Ole e1_36A1 Ole e1_37A1 Ole e1_37A2 Ole e1_37A3 Ole e1_37B1 Ole e1_37C1 Ole e1_37C1 Ole e1_37C1 Ole e1_38A1 Ole e1_38A2	MirDRAFT_AC172742g23y1 POPTRDRAFT_S84521 Ovt_33013 Ovt0g0205700 Ovt_20257 Ost_34017 Sb059003010	A20629 B947M0 A22573 QURV00 A3C3E5 C574M4 B4FW84 A9NK80 A9NZNE A9NZNE	MEDTR POPTR ORYSI ORYSJ ORYSJ ORYSJ SORIJ MAJZE PICSI PICSI PICSI	47 47 47 47 47 48 48 48 48 48 48 48 48	Oin e 1, 47A2 Oie e 1, 47B2 Oie e 1, 47B2 Oie e 1, 47B2 Oie e 1, 47B3 Oie e 1, 47B3 Oie e 1, 47B3 Oie e 1, 48B4 Oie e 1, 48B4 Oie e 1, 48B4 Oie e 1, 48B5	Ds12g0472806 S00011s012840 Polien ole e 1 allergen A15010130 dike protein A15g10130 Putative polien Ole e 1 allergen SUA05_10	Q2QR52 B4FY58 B6T2W5 C8JRP6 C0PAV0 07M2T9 B7U959 Q8LX15 C3U356 Q4ABQ7 89HFN2	ORYSJ MAIZE MAIZE SORBI MAIZE ARALY CARAS ARATH ARAAL BRARP POPTR
35 36 37 37 37 37 37 37 38 38 38 38 38 38	Oin e1_35Å1 Oin e1_35Å1 Oin e1_37Å2 Oin e1_37Å2 Oin e1_37Å3 Oin e1_37Å3 Oin e1_37Å3 Oin e1_37Å3 Oin e1_37Å3 Oin e1_3ÅÅ3 Oin e1_3ÅÅ3 Oin e1_3ÅÅ3	MirDRAFT AC172742g21v1 POPTNDRAFT_S4624 Octu_30013 Octu_30013 Octu_9205700 Oct_9202570 Oct_92020700 	A20625 B90/M0 A22513 QURV00 A2VM00 A3C3E5 G5V4M4 B4FW84 A5NK80 A9NZN6 A9NZN6 A9NZ56	MEDTR POPTR ORYSI ORYSI ORYSI ORYSI SORBI MAIZE PICSI PICSI PICSI	47 47 47 47 48 48 48 48 48 48 48 48	Ois e1 47A2 Ois e1 47B2 Oie e1 47B2 Oie e1 47B3 Oie e1 48A1 Oie e1 48A3 Oie e1 48B1 Oie e1 48B1	Ost2g0472800 S00011s012840 Pollen ole e 1 allergen At5g10130 like protein Al5g10130 Putative pollen Qle e 1 allergen 80A03_10	Q20R52 B4FY38 B4T2W5 CB/RP6 CIPAV0 07M2T9 B7/U559 B7/U559 Q3LX15 C3UJ38 Q4ABQ7 B9/U553	ORYSJ MAIZE MAIZE SORBI MAIZE ARALY CARAS ARATH ARAAL BRARP POPTR POPTR
36 37 37 37 37 37 37 37 38 38 38 38 39 39	Ois e1_35A1 Ois e1_36A1 Ois e1_37A2 Ois e1_37A2 Ois e1_37A3 Ois e1_37A3 Ois e1_37A3 Ois e1_37A3 Ois e1_37C7 Ois e1_37C7 Ois e1_37A3 Ois e1_38A3 Ois e1_38A3 Ois e1_38A3	MirDRAFT_AC172742g23y1 POPTRDRAFT_S84521 Ovt_53013 Ovt10g0205700 Ovt_26257 Ost_31017 Bolt5g003010	A20629 B5M7M0 A22573 Q9RV00 A2VM00 A3C3E5 C6V4M4 B4FW84 A9NK80 A9NX80 A9NX80 A9NX80 A9NX80 C9PTE0	MEDTR POPTR ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI PICSI PICSI PICSI PICSI	47 47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e1,47A2 Oie e1,47B1 Oie e1,47B2 Oie e1,47B2 Oie e1,47B3 Oie e1,47B3 Oie e1,47B3 Oie e1,47B3 Oie e1,47B3 Oie e1,48A1 Oie e1,48A3 Oie e1,48B3 Oie e1,48B3 Oie e1,48B3	Ds12g0472806 So0011s012840 Pollen ole e 1 allergen A15g10130.like protein A15g10130.like er allergen S0A03_10 Putative pollen Ole e 1 allergen S0A03_10	Q20852 B4FV38 B6T2W5 CBJRP6 CBPAV0 07/M279 B7U959 Q3LX15 C3UJ36 Q4ABQ7 89HFN2 B94553 B974H0	ORYSJ MAIZE MAIZE SORBI MAIZE ARALY CARAS ARATH ARAAL BRARP POPTR POPTR RICCO
35 36 37 37 37 37 37 37 38 38 38 38 39 39 39 39	Ole e1 35A1 Ole e1 36A1 Ole e1 37A1 Ole e1 37A2 Ole e1 37A3 Ole e1 37A3 Ole e1 37A1 Ole e1 37A3 Ole e1 37A1 Ole e1 37A3 Ole e1 37A3 Ole e1 38A3 Ole e1 38A3	MirDRAFT AC172742g21y1 POPTRDRAFT_S64521 Ost_33013 Ost0g205700 Ost_36257 Ost_31017 35065g003010	A2Q629 B9N7M0 A225T3 QURV00 A32YM00 A3C3E5 G5Y4M4 B4FWB4 A9NKB0 A9N2N6 A9N2N6 A9N256 C9PTE0 A9N726	MEDTŘ POPTR ORYSI ORYSI ORYSI ORYSI SORBI MAIZE PICSI PICSI PICSI PICSI PICSI	47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e 1,47A2 Oie e 1,47B2 Oie e 1,47B3 Oie e 1,48A3 Oie e 1,48B3 Oie e 1,48B3 Oie e 1,48B3 Oie e 1,48B3 Oie e 1,48B3	Ost2g0472800 So0011s012840 Polien ole e 1 allergen A15010130 ille protein Al5g10130 Putative polien Ole e 1 allergen S0A03_10 Polien-specific preiein C13	Q2QR52 B4FY38 B6T2W5 C8JRP8 C9PAV0 07M279 B7/059 B7/059 Q8LX15 C3JJ38 Q4ABQ7 89H5N2 B94553 B97480 D7/88H5	ORYSJ MAIZE MAIZE SORBI MAIZE ARALY GARAS ARATH ARAALY POPTR POPTR POPTR RICCO ARALY
35 36 37 37 37 37 37 37 37 37 37 38 38 38 38 39 39 30 30 40	Ole e1_35Å1 Ole e1_35Å1 Ole e1_37Å1 Ole e1_37Å2 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3 Ole e1_38Å3 Ole e1_38Å3 Ole e1_38Å3 Ole e1_38Å3	MirDRAFT AC172742g23y1 POPTRORAFT_S64521 Ovt_33013 Ovt10g205700 Ovt_26257 OsJ_31017 Sb05g003010	A20629 B997M0 A225T3 QURV00 A27M00 A3C3E5 C5Y4M4 B4FW84 A9N2N8 A9N2N8 A9N2N8 A9N2N8 C0PTE0 A9N728 C0PTE0 A9N728	MEDTR POPTR ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI SORBI MAIZE PICSI PICSI PICSI PICSI PICSI PICSI PICSI PICSI	47 47 47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e1,47A2 Ois e1,47B2 Oie e1,47B2 Oie e1,47B2 Oie e1,47B3 Oie e1,47B3 Oie e1,47B3 Oie e1,47B3 Oie e1,47C1 Oie e1,48A1 Oie e1,48A3 Oie e1,48A3 Oie e1,48B3 Oie e1,48B3 Oie e1,48B3 Oie e1,48B3	Os12g0472806 So0011s012840 Pollen ole e 1 allergen ATSG10130 Alles protein Al5g10130 Putalive pollen Ole e 1 allergen 89A03_10 Pollen-specific preiein C13 Allergen Jike pontein BE5x70	Q20852 B4FV58 B4T2W5 C8JRP6 C8JRP6 O7M279 B7U959 Q3LX13 C3U358 Q4ABQ7 B9HFN2 B9H553 B874H0 D7M8H5 C3U358	ORYSJ MAIZE MAIZE SORBI MAIZE ARATH ARAAL ORARP POPTR RICCO ARATH ARATH
35 36 37 37 37 37 37 37 37 37 37 37 38 38 38 39 39 39 39 39 30 40	Ole e1_35A1 Ole e1_36A1 Ole e1_37A1 Ole e1_37A2 Ole e1_37A3 Ole e1_37A3 Ole e1_37B1 Ole e1_37C1 Ole e1_37C1 Ole e1_37C1 Ole e1_38A2 Ole e1_38A2 Ole e1_38A2 Ole e1_38A2 Ole e1_38A2	MirDRAFT_AC172742g23y1 POPTRDRAFT_SE4521 Ovt_33013 Ovt0g0205700 Ovt_26257 Ost_34017 Bb65g003910	A20629 B9N7M0 A22573 QURV00 A3C3255 C5Y4M4 B4FWB4 A9NKB0 A9NZ96 A9NZ96 C0PTE0 A9NZ96 A9NZ96 C0PTE0 A9NZ86 C0PTE0	MEDTR POPTR ORYSI ORYSJ ORYSJ ORYSJ ORYSJ SQRBJ MAZZE PICSI PICSI PICSI PICSI PICSI PICSI PICSI PICSI	47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e 1,47A2 Oie e 1,47B1 Oie e 1,47B2 Oie e 1,47B3 Oie e 1,47B3 Oie e 1,47B3 Oie e 1,47B3 Oie e 1,48A1 Oie e 1,48A2 Oie e 1,48A2 Oie e 1,48B3 Oie e 1,48B3 Oie e 1,48B3 Oie e 1,48B3 Oie e 1,48C1 Oie e 1,48C3	Ost2g0472806 So0011s012840 Polion ole e 1 allergen. A15010130 dike protein A15010130 dike protein A15010130 dike protein Putative polion Ole e 1 allergen SUA03_10 Polion-specific protein C13 Allergen-like protein BRSh20 Bolion specific Security	Q2QR52 B4FV58 B6T2W5 CBJRP6 CBJRP6 CBJRP6 CBJRP6 O7M279 B7/J059 Q5LX15 C3UJ86 Q4ABQ7 B9H553 B974H0 D7M8H5 Q932V5 D4277	ORYSJ MAIZE MAIZE SORBI MAIZE CARAS CARAS ARATH ARAAL BRARP POPTR POPTR POPTR RICCO ARALY ARATH ARATH
35 36 37 37 37 37 37 37 37 37 37 37 38 38 39 39 39 30 30 40 40	Ole = 1_35Å1 Ole = 1_36Å1 Ole = 1_36Å1 Ole = 1_37Å1 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_38Å1 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_40Å3	MirDRAFT_AC172742g23y1 POPTRORAFT_S64521 Ovt_33013 Ovt10g2005700 Ovt_26257 Ovt_2507 Sb05g003010	A20629 B5977M0 A22573 QJIRV00 A2VM00 A3C3E5 G5V4M4 B4FW84 A5NK80	MEDTA POPTR ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ SORBJ MAIZE PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ	47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e1 47A2 Oin e1 47A2 Oin e1 47B2 Oie e1 47B2 Oie e1 47B3 Oie e1 47B3 Oie e1 47B3 Oie e1 47B3 Oie e1 47B3 Oie e1 48A3 Oie e1 48B3 Oie e1 48B3 Oie e1 48C3	Os12g0472800 So0011s012840 Pollen ole e 1 allergen AT6G101304be protein Al5g10130 Putallive pollen Ole e 1 allergen 80A03_10 Pollen-specific protein Cf3 Allergen4ike protein BRSh20 Pollen specific protein	Q2Q852 B4FY58 B4T2W5 CB2RP6 CBPAV0 07M2T9 B7U959 Q8LX15 C3U38 Q4ABQ7 89HFN2 B9H553 B974H0 D7M8H5 Q932V5 Q42077	ORYSJ MAIZE MAIZE SORBI MAIZE SORBI MAIZE CARAS ARALY ARATH ARAAL POPTR POPTR RICCO ARALY ARATH
35 36 37 37 37 37 37 37 38 38 38 38 39 39 39 39 30 40 40 40	Ois e1_35Å1 Ois e1_36Å1 Ois e1_37Å1 Ois e1_37Å2 Ois e1_37Å3 Ois e1_37Å3 Ois e1_37Å3 Ois e1_37Å1 Ois e1_37Å1 Ois e1_37Å2 Ois e1_38Å3 Ois e1_38Å2 Ois e1_38Å2 Ois e1_38Å2 Ois e1_38Å2 Ois e1_48Å2	MirDRAFT_AC172742g23y1 POPTRDRAFT_S64524 Ost_33013 O410g205700 Ost_26257 Ost_31017 Sb085g003910	A2Q629 B5A7M0 A225T3 QURV00 A2YM00 A3C3E5 C6Y4M4 B4FWB4 A5NKB0 A9A2NE A9AXNE A9AXNE A9AXNE A9AXNE A9AXNE A9AXNE A9AXSE A9	MEDTR POPTR ORYSI ORYSJ ORYSJ ORYSJ ORYSJ SORBI MAIZE PICSI PICSI PICSI PICSI PICSI PICSI PICSI PICSI PICSI PICSI ARALY ARALH MAIZE	47 47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e 1,47A2 Oie e 1,47B1 Oie e 1,47B2 Oie e 1,47B3 Oie e 1,47B3 Oie e 1,47B3 Oie e 1,47B3 Oie e 1,48A1 Oie e 1,48A1 Oie e 1,48A1 Oie e 1,48A5 Oie e 1,48B3 Oie e 1,48B3 Oie e 1,48B3 Oie e 1,48B2 Oie e 1,48C3 Oie e 1,48C3 Oie e 1,48C3	Ds12g0472806 S00011s012840 Pollen ole e 1 allergen ATSG10130-like protein Al3g10130 Putative pollen Ole e 1 allergen S0A03_10 Pollen-specific protein C13 Affergen-like protein ERSh20 Pollen specific protein	Q20852 B4FY38 B8T2W5 C8JRPE C8JRPE C8JRPE 07M279 B7U959 Q3LX15 C3UJ35 C3UJ35 C3UJ35 C3UJ35 C3UJ35 B9T4H0 D7M8H53 B9T4H0 D7M8H53 C3UJ277 A3P956	ORYSJ MAIZE SORBI MAIZE SORBI MAIZE CARAS ARATH ARAL BRARP POPTR RICCO ARALY ARATH ARATH ARATH POPTR
35 36 37 37 37 37 37 37 37 37 38 38 38 39 39 39 39 39 39 39 30 40 40 40	Oin e 1 35Å1 Oin e 1 35Å1 Oin e 1 37Å2 Oin e 1 37Å2 Oin e 1 37Å2 Oin e 1 37Å3 Oin e 1 37Å3 Oin e 1 37Å3 Oin e 1 37Å3 Oin e 1 38Å2 Oin e 1 38Å3 Oin e 1 38Å3 Oin e 1 38Å3 Oin e 1 38Å3 Oin e 1 48Å3 Oin e 1 48Å3 Oin e 1 48Å3	MirDRAFT AC172742g21y1 POPTNDRAFT_S84521 Ost_33013 Ost0g0205700 Ost_36257 Ost_31017 35065g003010 ARALYDRAFT_664511 A13g28500 Polien proteins Ole e 1 family ARALYDRAFT_358211	A2Q629 B9N7M0 A2Z5T3 QURV00 A3CYM00 A3C3E5 C5Y4M4 B4FWB4 A9NKB0 A9NZ55 C9PTE0 A9NZ55 C9PTE0 D7LRC1 QEL653 B65LJ6 D7MIZ7	MEDTŘ POPTR ORYSJ ORYSJ ORYSJ SORBJ MAZE PICSI PICSI PICSI PICSI PICSI PICSI ARALY ARALY ARALY	47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e 1, 47A2 Oie e 1, 47B1 Oie e 1, 47B2 Oie e 1, 47B3 Oie e 1, 48A3 Oie e 1, 48A3 Oie e 1, 48A3 Oie e 1, 48B3 Oie e 1, 48B3 Oie e 1, 48C1 Oie e 1, 48C1 Oie e 1, 48C1 Oie e 1, 48D2	Ost2g0472800 So0011s012840 Polien ole e 1 allergen A15010130 ille protein A15g10130 Putative polien Ole e 1 allergen S0A03_10 Polien-specific preiein C13 Aftergen-like protein BREn20 Polien specific protein	Q2QR52 B4FY58 B4TY58 B4T2W5 C8JRP8 C9PAV0 07M279 B7U959 Q3LX15 C3UJ38 Q4AB07 89HFN2 B94553 B94553 B94553 B94553 B94553 B94553 B94553 Q43275 Q43275 Q43275 Q43275 Q43275	ORYSJ MAIZE MAIZE SORBI MAIZE ARAN CARAS ARATH ARAAL BRARP POPTR RICCO ARALY ARATH ARATH ARATH POPTR
35 36 37 37 37 37 37 37 37 37 37 37 37 37 37	Ole e1_35Å1 Ole e1_37Å1 Ole e1_37Å1 Ole e1_37Å2 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3 Ole e1_38Å3 Ole e1_38Å3 Ole e1_38Å3 Ole e1_38Å3 Ole e1_48Å3 Ole e1_48Å3	MirDRAFT AC172742g23y1 POPTRDRAFT_S64521 Ost_53013 Ost10g0205700 Ost_26257 Ost_31017 S8065g003010 ARALYDRAFT_664511 A13g26560 Pollien proteins Olie e I family ARALYDRAFT_S5821 Arb41050	A2Q629 BSN7M0 A225T3 QURV00 A3C3E5 G5Y4M4 B4FW84 ASNK80 ASNK80 ASNK80 ASNX80 AS	MEDTR POPTR ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ SORBJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ ARALY ARATH	47 47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e1,47A2 Oie e1,47B2 Oie e1,47B2 Oie e1,47B3 Oie e1,47B3 Oie e1,47B3 Oie e1,47B3 Oie e1,47B3 Oie e1,48A1 Oie e1,48A3 Oie e1,48A3 Oie e1,48B3 Oie e1,48B3 Oie e1,48B3 Oie e1,48C3 Oie e1,48C3 Oie e1,48D2 Oie e1,48D2	Ost2g0472806 So0011s012840 Pollen ole e 1 allergen A15g10130 like protein A15g10130 Putative pollen Ole e 1 allergen S0A08_10 Pollen-specific pretein C43 Aflergen-like protein BRSn20 Pollen specific protein	Q20852 B4FV36 B4T2W5 C8JRP6 C0PAV0 07N379 B7U959 Q3LX15 C3U356 Q4ABQ7 B9H553 B974H0 D7N8H5 Q382V5 Q42077 A9P956 A9P600	ORYSJ MAIZE MAZE SORBI MAZE SORBI MAZE GARAS ARATH ARATH ARATH ARATH ARATH POPTR POPTR POPTR
35 36 37 37 37 37 37 37 37 38 38 38 38 38 38 39 39 39 30 40 40 40 40 40 40	Ole e1 35Å1 Ole e1 36Å1 Ole e1 37Å1 Ole e1 37Å1 Ole e1 37Å1 Ole e1 37Å3 Ole e1 37Å3 Ole e1 37Å1 Ole e1 37Å1 Ole e1 37Å1 Ole e1 38Å1 Ole e1 38Å2 Ole e1 38Å3 Ole e1 38Å2 Ole e1 38Å3 Ole e1 38Å2 Ole e1 40Å1 Ole e1 40Å1 Ole e1 40Å3	MirDRAFT AC172742g23y1 POPTRDRAFT_SE4521 Ovt_33013 Ovt0g0205700 Ovt_26257 Obt_31017 B065g003010 ARALYDRAFT_564511 A13g26960 Police proteins Oice al family ARALYDRAFT_355871 Ar5g41050	A20629 B9N7M0 A22573 QURV00 A2VM00 A3C3E5 C5V4M4 B4FWB4 A9NKB0 A9NZ95 A9NZ95 C9PTE0 A9NZ95 D7LRC1 QEL953 BK5LJ6 07MIZ7 Q9FLM4 C67792	MEDTR POPTR ORYSI ORYSI ORYSJ ORYSJ SQRBI MAZZE PICSI PICSI PICSI PICSI PICSI PICSI PICSI PICSI PICSI ARALY ARALY ARATH MAZE ARALY	47 47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e1,47A2 Oie e1,47B1 Oie e1,47B2 Oie e1,47B2 Oie e1,47B2 Oie e1,47B2 Oie e1,47C1 Oie e1,47C1 Oie e1,48A1 Oie e1,48A2 Oie e1,48A2 Oie e1,48B3 Oie e1,48B3 Oie e1,48B3 Oie e1,48C1 Oie e1,48C2 Oie e1,48D2 Oie e1,48D2 Oie e1,48D2 Oie e1,48D2 Oie e1,48D2 Oie e1,48D2	Ost2g0472800 So0011s012840 Pollen ole e 1 allergen A15050130 ille protein A15g10130 Putative pollen Ola e 1 allergen B0A08_10 Pollen-specific protein C13 Allergen-like protein BREh20 Pollen specific protein	Q2QR52 B4FY38 B6T2W5 C8JRP6 C8JRP6 C9PAV0 07M279 B7U959 Q3LX15 C3UJ38 Q3LX15 C3UJ38 Q3LX15 C3UJ38 B4FN2 B9H533 B974H0 D7M8H5 Q3S2Y5 Q42077 Q42077 Q42077 A9P956 A9P860 A9P860	ORYSJ MAIZE SORBI MAIZE SORBI MAIZE CARAS ARATH ARAAL BRARP POPTR RICCO ARALY ARATH ARATH POPTR POPTR POPTR POPTR
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35 36 37 37 37 37 37 37 37 38 38 39 38 39 38 39 38 39 30 40 40 40 40 40 40	Ois e1 35Å1 Ois e1 37Å1 Ois e1 38Å3 Ois e1 38Å3 Ois e1 38Å1 Ois e1 49Å1 Ois e1 49Å3 Ois e1 40Å3 Ois e1 40Å3 Ois e1 40Å3	MirDRAFT_AC172742g23y1 POPTRDRAFT_S64624 Ovt_33013 Ovt0g0205700 Ovt_26257 Ost_31017 Bb05g003910 ARALYDRAFT_564511 A13g26960 Polien proteins Ole e1 family ARALYDRAFT_355871 Ar5g41050	A2Q629 B9N7M0 A22573 Q9RV00 A2VM00 A3C3255 C5V4M4 B4FW84 A9NK80 A9NZ96 A9NZ96 A9NZ96 A9NZ96 A9NZ96 D7LRC1 Q8L053 BK5LJ6 D7MI27 Q9FLM4 C67792 C6S215	MEDTR POPTR ORYSI ORYSJ ORYSJ ORYSJ ORYSJ SQRBI MAIZE PICSI PICSI PICSI PICSI PICSI PICSI PICSI PICSI PICSI ARALY ARALY ARATH SQYBN SQYBN	47 47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e 1, 47A2 Oie e 1, 47B2 Oie e 1, 47B2 Oie e 1, 47B2 Oie e 1, 47B3 Oie e 1, 47B3 Oie e 1, 47B3 Oie e 1, 47B3 Oie e 1, 48A1 Oie e 1, 48A3 Oie e 1, 48A5 Oie e 1, 48B3 Oie e 1, 48B3 Oie e 1, 48B3 Oie e 1, 48C3 Oie e 1, 48D3 Oie e 1, 48D3	Ds12g0472806 S000115012840 Polien ole e 1 allergen A15010130 dike protein A15g10130 Putative polien Ole e 1 allergen SUA03_10 Polien-specific protein C13 Attergendike protein BRSh20 Polien specific protein Polien specific protein C13	Q2QR52 B4FV38 B6T2W5 C8JRP6 C9PAV0 07M279 B7U959 Q3LX15 C3UJ86 Q4ABQ7 B9H533 B974H0 D7M8H5 Q43Q77 A9P956 A9P960 A9P960 A9P602	ORYSJ MAIZE MAIZE SORBI MAIZE CARAS CARAS ARATH ARAA BRARP POPTR POPTR POPTR POPTR POPTR POPTR POPTR POPTR POPTR POPTR RICCO
35 36 37 37 37 37 37 37 37 37 37 37 38 38 38 39 39 39 39 39 30 39 40 40 40 40 40 40	Ole = 1_35Å1 Ole = 1_36Å1 Ole = 1_37Å1 Ole = 1_37Å2 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_38Å1 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_40Å3 Ole = 1_40Å3 Ole = 1_40Å3 Ole = 1_40Å3 Ole = 1_40Å3	MirDRAFT AC172742g23y1 POPTRORAFT_584521 O4(_33013 O410g0205700 O4(_26257 O54_2107 B005g003010 ARALYDRAFT_564511 A13g28960 Polien proteints Ole e I family ARALYDRAFT_55821 At5g41050	A20629 B997M0 A225T3 QJRV00 A2YM00 A3C3E5 G5Y4M4 B4FW84 A9NZ9 A9NZ9 A9NZ96 C0PTE0 A9NZ95 C0PTE0 A9NZ95 D7LRC1 QEL953 B65LJ6 O7M127 Q9FLM4 C67792 C65215 B7FIQ2	MEDTA POPTR ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ SORBJ MAZE PICSJ P	47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e1 47A2 Oin e1 47A2 Oin e1 47B3 Oie e1 48B4 Oie e1 48A4 Oie e1 48A4 Oie e1 48A5 Oie e1 48B3 Oie e1 48C3 Oie e1 48D3 Oie e1 48D3 Oie e1 48D5 Oie e1 48D5 Oie e1 48D5	Os12g0472800 So0011s012840 Pollen ole e 1 allergen ATSG10130 Albe protein Al5g10130 Putallive pollen Ole e 1 allergen 80A03_10 Pollen-specific protein BREn20 Pollen specific protein Pollen specific protein C13 Pollen-specific protein C13 Pollen-specific protein C13	Q20852 B47Y58 B472W5 CBAR95 CBPAV0 07M279 B7/J959 Q3LX15 C3JJ38 D4ABQ7 89HFN2 D94553 B974H0 D7M8H5 Q932Y5 Q42077 A9P950 A9P950 A9P950 A9P950 A9P950 Q32J07	ORYSJ MAIZE MAZE SORBI MAZE SORBI MAZE CARAS ARATH ARAAL BRARP POPTR RICCO ARALY ARATH ARATH POPTR POPTR POPTR POPTR RICCO RIC
35 36 37 37 37 37 37 37 38 38 38 38 39 39 39 39 39 30 40 40 40 40 40 40 40 40 40	Ois e1_35Å1 Ois e1_36Å1 Ois e1_37Å1 Ois e1_37Å2 Ois e1_37Å3 Ois e1_37Å3 Ois e1_37Å3 Ois e1_37Å3 Ois e1_37Å1 Ois e1_37Å7 Ois e1_38Å3 Ois e1_38Å3 Ois e1_38Å3 Ois e1_38Å3 Ois e1_38Å3 Ois e1_38Å3 Ois e1_38Å3 Ois e1_38Å3 Ois e1_48Å4 Ois e1_48Å3 Ois e1_48Å3 Ois e1_48Å3 Ois e1_48Å3	MirDRAFT AC172742g23y1 POPTRDRAFT_S64624 Ost_33013 O410g205700 O4_26257 O54_31017 S5085g003010 ARALYDRAFT_664511 A13g26560 Polien proteins Ole e1 family ARALYDRAFT_355871 A15g41050	A2Q629 B5A7M0 A2Z5T3 QURV00 A2YM00 A3C3E5 C6Y4M4 B4FWB4 A9H7K9 A9H2N6 A9H2N6 A9H2N6 A9H2N6 C0PTE0 A9H7K9 D7LRC1 QEL053 BK5LJ6 Q7H27 QEL053 BK5LJ6 Q7H27 QEL053 BK5LJ6 Q7H27 QEL053 BK5LJ6 Q7H27 QEL053 BK5LJ6 Q7H27 QEL053 BK5LJ6 QFL06 QEL053 BK5LJ6 QFL06 QEL053 BK5LJ6 QFL06 QEL053 BK5LJ6 QFL06 QEL053 BK5LJ6 QFL06 QEL053 BK5LJ6 QFL06 QEL053 BK5LJ6 QFL06 QEL053 BK5LJ6 QFL06 QEL053 BK5LJ6 QFL06 QEL053 BK5LJ6 QFL06 QEL053 BK5LJ6 QFL06 QEL053 BK5LJ6 QFL06 QEL053 BK5LJ6 QFL06 QEL053 BK5LJ6 QFL06 QEL053 BK5LJ6 QFL0	MEDTR POPTR ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ SORBJ MAZZE PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ PICSJ SOYBN SOYBN SOYBN MEDTR	47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e 1, 47A2 Oie e 1, 47B2 Oie e 1, 47B2 Oie e 1, 47B2 Oie e 1, 47B3 Oie e 1, 47B3 Oie e 1, 47B3 Oie e 1, 48A1 Oie e 1, 48A4 Oie e 1, 48A4 Oie e 1, 48A5 Oie e 1, 48B3 Oie e 1, 48B3 Oie e 1, 48C2 Oie e 1, 48D3 Oie e 1, 48D4 Oie e 1, 48D4	Ds12g0472806 S00011s012840 Pollen ole e 1 allergen A15G101304lke protein A15g10130 Putative pollen Ole e 1 allergen 80A08_10 Pollen-specific protein C13 Allergen4lke protein BRSh20 Pollen-specific protein Pollen-specific protein C13 Pollen-specific protein C13 Pollen-specific protein C13	Q20852 B4FV38 B6TZW5 C8JRP6 C8JRP6 C8JRP6 C8JRP6 C7M279 B7U959 Q3LX15 C3JJ35 Q4A8Q7 89HFN2 B9H553 B974H0 D7/M8H53 B9755 A3P950 A3P950 A3P950 A3P7W2 A3P950 A3P7W2 A3P950 A3P7W2	ORYSJ MAIZE SORBI MAIZE SORBI MAIZE CARAS ARALY ARATH ARAL BRARP POPTR POPTR RICCO ARALY ARATH POPTR POPTR RICCO NICLA VITV
35 36 37 37 37 37 37 37 38 38 38 38 39 39 39 39 39 39 39 40 40 40 40 40 40 40 40 40	Oin e 1 35Å1 Oin e 1 35Å1 Oin e 1 37Å2 Oin e 1 37Å2 Oin e 1 37Å2 Oin e 1 37Å3 Oin e 1 38Å2 Oin e 1 38Å3 Oin e 1 38Å3 Oin e 1 38Å3 Oin e 1 40Å1 Oin e 1 40Å3 Oin e 1 40Å3	MirDRAFT AC172742g23y1 POPTRORAFT S64521 Ovt.33013 Ovt10g20205700 Ovt.26257 Ovt.2507 S005g003010 ARALYDRAFT 564511 A13g26960 Polien proteins Oile el family ARALYDRAFT 564511 A13g26960 Polien proteins Oile el family ARALYDRAFT 35821 A13g41050 POPTRORAFT 194502	A20629 B5977M0 A22573 QJIRV00 A27M00 A3C3E5 G574M4 B4FW84 A9N7X9 A9N7X9 A9N7X9 A9N7X9 A9N7X9 A9N7X9 A9N7X9 D7LRC1 QELU53 B65LJ6 07M127 Q9FLM4 C67792 C65215 B7FIQ2 B9GF61 B9GF61	MEDTA POPTR ORYSJ ORYSJ ORYSJ ORYSJ SORBJ MAIZE PICSJ	47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e1 47A2 Oin e1 47A2 Oin e1 47B3 Oie e1 48A3 Oie e1 48B3 Oie e1 48C1 Oie e1 48C3 Oie e1 48D3 Oie e1 48D3	Os1290472800 Sod011s012840 Pollen ole e 1 allergen At6G101304be protein At6g10130 Putative pollen Ole e 1 allergen 80A03_10 Pollen-specific protein C13 Allergen4ike protein BRSh20 Pollen-specific protein C13 Pollen-specific protein C13 Pollen-specific protein C13 Pollen-specific protein C13	Q20852 B4FY58 B4T2W5 CBAR95 CBPAV0 07M2T9 B7U959 Q8LX15 C3UJ88 Q4ABQ7 89HFN2 B9H553 B974H0 D7M8H5 Q432V5 Q432V5 Q432V5 Q432V7 A9P950 A3P50 A3P50	ORYSJ MAIZE MAIZE SORBI MAIZE SORBI MAIZE SORBI MAIZE CARAS ARATH ARATH ARATH ARATH ARATH ARATH ARATH ARATH POPTR POPTR POPTR POPTR POPTR POPTR POPTR
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35 36 37 37 37 37 37 37 38 38 38 39 39 39 39 39 39 39 30 40 40 40 40 40 40 40 40	Oin e 1 35Å1 Oin e 1 35Å1 Oin e 1 37Å2 Oin e 1 37Å2 Oin e 1 37Å2 Oin e 1 37Å3 Oin e 1 38Å2 Oin e 1 38Å2 Oin e 1 38Å3 Oin e 1 38Å3 Oin e 1 48Å3 Oin e 1 48Å3	MirDRAFT_AC172742g23v1 POPTRORAFT_S64521 Ovt_33013 Ovt10g20205700 Ovt_26257 Ovt_26257 Ovt_26257 Ovt_26257 Ovt_26257 ARALYDRAFT_564511 A13g26500 Polien proteins Ole e1 family ARALYDRAFT_56571 A13g41050 POPTRORAFT_1059256 POPTRORAFT_1258273	A20629 B5M7M0 A225T3 QJ9RV00 A3C3E5 G5Y4M4 B4FW84 B4FW84 A9NY89 A9NZ96 C9PTE0 D7LRC1 QEL953 B7FL02 B7FL02 B7FL02 B7FL02 B9GF59 A9PAE7	MEDTA POPTR ORYSJ ORYSJ ORYSJ ORYSJ SQRBJ MAZZE PICSI	47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e1 47A2 Oin e1 47A2 Oin e1 47B3 Oin e1 48A3 Oin e1 48A3 Oin e1 48A3 Oin e1 48A3 Oin e1 48A3 Oin e1 48A3 Oin e1 48B3 Oin e1 48B3 Oin e1 48C3 Oin e1 48C3 Oin e1 48C3 Oin e1 48D3 Oin e1 48D5 Oin e1 48D5	Os12g0472800 S00011s012840 Pollen ole e 1 allergen A T6G10130 Albe protein A 15g10130 Putative pollen Ole e 1 allergen S0A03_10 Pollen-specific protein C13 Aftergen-like protein BREn20 Pollen-specific protein C13 Pollen-specific protein C13 Pollen-specific protein S0A03_00 Pollen-specific protein C13 Pollen-specific protein S0A03_00 Pollen-specific protein C13	Q2Q852 B4FY58 B4T2W5 C82RP6 C82RP6 C82RP40 07M2T9 B7U959 Q8LX15 C3JJ86 Q4ABQ7 89H553 B974H0 D7M8H5 Q932V5 Q42077 A3P956 A3P956 A3P956 A3P956 Q2J07 A3PK1 B8RJG5 Q2J07 A58PK1 D7TR84 E2LMG1	ORYSJ MAIZE MAIZE SORBI MAIZE CARAS ARATH ARAAL GARAS ARATH ARAAH POPTR POPTR POPTR POPTR POPTR POPTR POPTR POPTR RICCO Nicla VITM CRIPE
35 37 37 37 37 37 37 37 37 37 37 37 37 37	Ole = 1_35Å1 Ole = 1_36Å1 Ole = 1_36Å1 Ole = 1_37Å1 Ole = 1_37Å2 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_48Å3 Ole = 1_40Å3 Ole = 1_40Å3	MirDRAFT AC172742g23y1 POPTRDRAFT_S64521 O4L_53013 O4L09205700 O4L_26257 O5L_31017 5005g003010 ARALYDRAFT_664511 A13g26960 Polien proteints Ole e I family ARALYDRAFT_155821 Ar5g41050 POPTRDRAFT_1069266 POPTRDRAFT_1069266 POPTRDRAFT_14592 POPTRDRAFT_14592 POPTRDRAFT_14592 POPTRDRAFT_14592 POPTRDRAFT_14592 POPTRDRAFT_14592	A2Q629 B997M0 A2Z5T3 QURV00 A3G25 G5Y4M4 B4FW84 A9NZN8 A9NZN8 A9NZN8 A9NZN8 C9PTE0 A9NZ88 C9PTE0 A9NZ88 C9PTE0 A9NZ88 C9PTE0 QRL853 BK5LJ8 O7NIZ7 Q9FLM4 C6T792 C6S215 B7F1Q2 B9GF61 B9GF61 B9GF59 B9RH38	MEDTR POPTR ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ SORBJ PICSJ	47 47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e 1, 47A2 Oin e 1, 47B2 Oie e 1, 47B3 Oie e 1, 48A1 Oie e 1, 48A4 Oie e 1, 48A5 Oie e 1, 48A5 Oie e 1, 48B3 Oie e 1, 48B3 Oie e 1, 48C3 Oie e 1, 48D3 Oie e 1, 48D5 Oie e 1, 48D5	Ost2g0472806 So0011s012840 Pollen ole 4 1 allergen At5G10130 like protein Al5g10130 Putative pollen Ole 4 1 allergen 99A03_10 Pollen-specific protein C13 Aflergen-like protein BRSh20 Pollen-specific protein C13 Pollen-specific protein BRSh20	Q20852 B4FY38 B4T2W5 C8JRP6 C8DAV0 07W3T9 B7U959 Q3LX15 C3U358 Q4ABQ7 B9H553 B974H0 D7M8H5 Q932Y5 Q42077 A9P956 A9P950 A3PCW2 A9PHV1 B9RJG6 Q21307 A5BPK1 Q7TRB4 Q21307	ORYSJ MAIZE MAZE SORBI MAZE SORBI MAZE SORBI MAZE GARAS ARATH ARATH ARATH ARATH POPTR RICCO ARALY ARATH POPTR POPTR POPTR POPTR POPTR POPTR POPTR RICCO CO NICLA VITO VITO CRIPE SAMNI
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35 36 37 37 37 37 37 37 38 38 39 39 39 39 39 39 39 39 39 39 40 40 40 40 40 40 40 40 40 40 40 40 40	Ole e1_35Å1 Ole e1_36Å1 Ole e1_37Å1 Ole e1_37Å2 Ole e1_37Å1 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å3 Ole e1_37Å1 Ole e1_37Å7 Ole e1_37Å2 Ole e1_38Å3 Ole e1_38Å3 Ole e1_38Å3 Ole e1_38Å3 Ole e1_38Å3 Ole e1_48Å3 Ole e1_48Å3	MirDRAFT AC172742g23y1 POPTRDRAFT_S64521 Ost_33013 Ost10g205700 Ost_26257 Ost_31017 S5085g003010 ARALYDRAFT_664511 A13g26560 Polien proteins Ole e1 family ARALYDRAFT_35521 A15g41050 POPTRDRAFT_1059266 POPTRDRAFT_1059266 POPTRDRAFT_1059266 POPTRDRAFT_1059266 POPTRDRAFT_1059266 POPTRDRAFT_1059266 POPTRDRAFT_556873 RCOM_1347049 VIT_0003047001 P1 clone: MGJ10	A2Q629 B5A7M0 A2Z5T3 QURV00 A2YM00 A3C3E5 C6Y4M4 B4FWB4 A9H7K9 A9H2N6 A9H2N6 A9H2N6 A9H2N6 A9H2N6 C0PTE0 A9H7K9 D7LRC1 D7LRC1 QEL053 BK5LJ6 D7H27 C6S215 B7FIQ2 C6S215 C75S25 C75	MEDTR POPTR ORYSI ORYSI ORYSJ ORYSJ ORYSJ ORYSJ SORBI MAZZE PICSI	47 47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e 1, 47A2 Oin e 1, 47B2 Oie e 1, 47B3 Oie e 1, 48A1 Oie e 1, 48A4 Oie e 1, 48A5 Oie e 1, 48A5 Oie e 1, 48B3 Oie e 1, 48C3 Oie e 1, 48D4 Oie e 1, 48D4 Oie e 1, 48D5 Oie e 1, 48D9 Oie e 1, 48D9	Ds12g0472808 S00011s012840 Pollen ole e 1 allergen A15G101304lke protein A15g10130 Putative pollen Ole e 1 allergen B0A03_10 Pollen-specific protein C13 Allergen4lke protein BRSh20 Pollen-specific protein S0A03_00 Pollen-specific protein C13 Pollen-specific protein C13 Pollen-specific protein scattoid_357.assembly12x Allergen4lke protein BRSh20 Putative SAH7 protein Putative SAH7 protein	Q20852 B4FY38 B4T2W5 C8JRPE C8JRPE C8JRPE C8JRPE C8JRPE C3JJ35 Q4ABQ7 89HFN2 B9H553 B974H0 D7/M8H52 B974H0 D7/M8H52 B9755 A3P950 A3P950 A3P950 A3PFW7 B9RJQ5 Q2J307 A3P950 A3PFW7 B9RJQ5 Q2J307 A58PK1 Q32554 Q3107TRB4 EZLMG1 Q32554 Q84PK9 Q84PK9 Q84PK9	ORYSJ MAIZE MAIZE SORBI MAIZE SORBI MAIZE CARAS ARALY ARATH ARATH ARATH ARATH ARATH ARATH POPTR RICCO ARALY ARATH POPTR POPTR RICCO NICLA VITV VITM CRIPE SAMNI SAMNI
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35 36 37 37 37 37 37 37 37 38 38 39 39 39 39 39 39 39 39 39 39 30 40 40 40 40 40 40 40 40 40 40 40 40 40	Oin e 1 35Å1 Oin e 1 35Å1 Oin e 1 37Å2 Oin e 1 37Å2 Oin e 1 37Å2 Oin e 1 37Å3 Oin e 1 38Å2 Oin e 1 38Å1 Oin e 1 38Å2 Oin e 1 38Å3 Oin e 1 38Å3 Oin e 1 38Å3 Oin e 1 38Å3 Oin e 1 40Å3 Oin e 1 40Å6 Oin e 1 40Å6 Oin e 1 44Å1 Oin e 1 44Å1 Oin e 1 44Å1 Oin e 1 46Å3	MirDRAFT AC1/22/42g23v1 POPTRORAFT S64521 Ovt.33013 Ovt10g20205700 Ovt.26257 Ovt.26257 Ovt.26257 Ovt.26257 Ovt.26257 ARALYDRAFT 564511 A13g26960 Pollen proteins Oile el family ARALYDRAFT 566511 A13g26960 Pollen proteins Oile el family ARALYDRAFT 566511 A13g26960 PolTRORAFT 174592 POPTRORAFT 174592 POPTRORAFT 174592 POPTRORAFT 566873 RCOM 1417040 VIT.90033047001 PT clone: MOJ10 A45g13140 ARALYDRAFT 428130 VITISV.011138 POPTRORAFT_4128130 VITISV.011138 POPTRORAFT_4128130 VITISV.011138 POPTRORAFT_4128130 VITISV.011138 POPTRORAFT_4128130 VITISV.011138 POPTRORAFT_4128130 VITISV.01138 POPTRORAFT_4128130 VITISV.01138 POPTRORAFT_4128130 VITISV.01138	A20629 B5M7M0 A225T3 QJIRV00 A2VM00 A3C3E5 G5V4M4 B4FW8A A5NK80 A5NY85 A5NY85 A5NY85 A5NY85 C0PTE0 A5NY85 A5NY85 C0PTE0 A5NY85 C0PTE0 A5NY85 B7FIQ2 B7FIQ3 B	MEDTA POPTR ORYSJ ORYSJ ORYSJ ORYSJ SORBJ MAIZE PICSI	47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e 1, 47A2 Oin e 1, 47B3 Oin e 1, 48A3 Oin e 1, 48B3 Oin e 1, 48B3 Oin e 1, 48C3 Oin e 1, 48C4 Oin e 1, 48C5 Oin e 1, 48C3 Oin e 1, 48C4 Oin e 1, 48C4 Oin e 1, 48C5 Oin e 1, 48C5 Oi	Os1290472800 S00011s012840 Pollen ole e 1 allergen AT6G101304lbe protein A15g10130 Putative pollen Ole e 1 allergen S0A03_10 Pollen-specific protein C13 Allergen-like protein BREn20 Pollen-specific protein Pollen-specific protein S0A04_357 assembly12x Allergen-like protein BREn20 Pollen-specific protein Scattold_357 assembly12x Allergen-like protein BS520 Putative SAH7 protein Putative SAH7 protein	Q2Q852 B4FY38 B4T2W5 CB2NP5 C0PAV0 07M2T9 B7U959 Q8LX15 C3JJ86 Q4ABQ7 89H553 B874H0 D7M8H5 Q932V5 Q42077 A9P956 A3P956 A3P956 A3P956 A3P956 A3P956 Q32077 A9P956 A3P956 Q32077 A3P956 Q32077 A3P956 Q32077 Q32554 Q21307 C3558PK1 Q32554 Q84PK5 C655VR9 Q84PK5 C655VR9 C655VR9 D77N25 Q802552 Q802552 Q80134 A2X522 Q8134	ORYSJ MAIZE MAIZE SORBI MAIZE SORBI MAZE SORBI ARALY ARATH ARATH ARATH POPTR RICCO ARALY ARATH ARATH POPTR POPTR POPTR POPTR POPTR POPTR POPTR SAMNI CRIPE SAMNI CRIPE SAMNI COSBA GOSBA GOSBA GOSBA SOYBN SOYBN SOYBN SOYBN SOYBN SOYBN
35 36 37 37 37 37 37 37 37 37 37 37 37 37 37	Ole = 1_35Å1 Ole = 1_36Å1 Ole = 1_37Å1 Ole = 1_37Å1 Ole = 1_37Å1 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å1 Ole = 1_38Å1 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_48Å2 Ole = 1_40Å3 Ole = 1_40Å6 Ole = 1_40Å6 Ole = 1_43Å3 Ole = 1_43Å3	MirDRAFT AC172742g23y1 POPTRDRAFT_564521 O44_33013 O410g205700 O4_26257 O54_26257 O54_26257 O54_26257 O54_26257 O54_2607 O54_2607 O54_2607 O54_26060 Polien proteins Oice al family ARALYDRAFT_564511 A13g26560 Polien proteins Oice al family ARALYDRAFT_564511 A13g26560 Polien proteins Oice al family ARALYDRAFT_564511 A13g26560 POPTRDRAFT_56673 RCOM_1447040 VIT_00033047001 P1 clone: MOJ10 A15g13140 ARALYDRAFT_482130 VITISV_011138 POPTRDRAFT_541228 Hydrolase POPTRDRAFT_541378 Ep60 O43_31875 O54092608200 O43_29355	A2Q629 B5977M0 A2Z573 QURV00 A2YM00 A3G25 G5Y4M4 B4FW84 A9N2N8 A9N2N8 A9N2N8 A9N2N8 A9N2N8 A9N2N8 A9N2N8 A9N2S8 C0PTE0 A9N729 D7LRC1 QEL953 BFSLJ6 07MIZ7 Q9FLM4 C67792 C6S215 B7FQ2 B9GF61 B9GF51 B9FH38 D75M072 A5ALLR B9GH55 B9FH38 D75508 B9FM98 Q9FY96 Q4LEU2 D7M672 A5ALLR B9GMF55 B9RM38 B9G2C8 A51558 B9G2C8	MEDTR POPTR ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ PICSJ	47 47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e1, 47A2           Oin e1, 47B2           Oie e1, 47B3           Oie e1, 48A1           Oie e1, 48A3           Oie e1, 48A3           Oie e1, 48A3           Oie e1, 48A3           Oie e1, 48B3           Oie e1, 48C3           Oie e1, 48C3           Oie e1, 48C3           Oie e1, 48C3           Oie e1, 48D3           Oie e1, 48D3 </td <td>Os1290472800 So0011s012840 Pollen ole 4 1 allergen At5010130/like protein At5010130/like protein S0A03_10 Putative pollen Ole 4 1 allergen 90A03_10 Pollen-specific protein C13 Allergen-like protein BRSh20 Pollen-specific protein C13 Pollen-specific protein Co164_397 assembly12x Allergen-like protein BRSh20 Putative SAH7 protein Putative SAH7 protein</td> <td>Q2Q852 B4FY38 B4T2W5 C8JRP6 C8JRP6 C8JRP40 O7/#279 B7/J959 Q8LX13 C3JJ38 Q4A8Q7 B9/H553 B974H0 D7/#3H5 Q932Y5 Q42077 A9P956 A9P956 Q322Y5 Q42077 A9P956 A9P800 A3PCW2 A3PKW2 B97450 Q32107 A58PK1 D7TR84 Q3107 A58PK1 Q77R84 Q84PK8 Q84PK8 Q84PK5 Q84PK</td> <td>ORYSJ MAIZE MAZE SORBI MAIZE SORBI MAIZE ARATH ARATH ARATH ARATH RICCO ARALY ARATH POPTR POPTR POPTR POPTR POPTR POPTR POPTR POPTR POPTR POPTR SAMNI GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA</td>	Os1290472800 So0011s012840 Pollen ole 4 1 allergen At5010130/like protein At5010130/like protein S0A03_10 Putative pollen Ole 4 1 allergen 90A03_10 Pollen-specific protein C13 Allergen-like protein BRSh20 Pollen-specific protein C13 Pollen-specific protein Co164_397 assembly12x Allergen-like protein BRSh20 Putative SAH7 protein Putative SAH7 protein	Q2Q852 B4FY38 B4T2W5 C8JRP6 C8JRP6 C8JRP40 O7/#279 B7/J959 Q8LX13 C3JJ38 Q4A8Q7 B9/H553 B974H0 D7/#3H5 Q932Y5 Q42077 A9P956 A9P956 Q322Y5 Q42077 A9P956 A9P800 A3PCW2 A3PKW2 B97450 Q32107 A58PK1 D7TR84 Q3107 A58PK1 Q77R84 Q84PK8 Q84PK8 Q84PK5 Q84PK	ORYSJ MAIZE MAZE SORBI MAIZE SORBI MAIZE ARATH ARATH ARATH ARATH RICCO ARALY ARATH POPTR POPTR POPTR POPTR POPTR POPTR POPTR POPTR POPTR POPTR SAMNI GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA
35 36 37 37 37 37 37 37 38 38 38 38 39 39 39 30 40 40 40 40 40 40 40 40 40 40 40 40 40	Oin e 1 35Å1 Oin e 1 35Å1 Oin e 1 37Å2 Oin e 1 37Å2 Oin e 1 37Å2 Oin e 1 37Å3 Oin e 1 38Å2 Oin e 1 38Å3 Oin e 1 38Å3 Oin e 1 38Å3 Oin e 1 38Å3 Oin e 1 48Å3 Oin e 1 40Å3 Oin e 1 44Å1 Oin e 1 44Å1	MirDRAFT AC172742g23v1 POPTRORAFT S64521 Ovt.33013 Ovt10g20205700 Ovt.26257 Ovt.2507 S005g003010 ARALYDRAFT 564511 A13g26500 Polien proteins Oic e1 family ARALYDRAFT 566511 A13g2650 Polien proteins Oic e1 family ARALYDRAFT 55571 A13g41050 POPTRORAFT 135571 A13g41050 POPTRORAFT 13572 POPTRORAFT 428130 VITISV 011138 POPTRORAFT 41251 POPTRORAFT 41372 POPTRORAFT 41372 POPTRORAFT 41372 POPTRORAFT 41373 POPTRORAFT 41373 POPTRORAFT 41375 DV90280200 Obl.25955 Sb02g025470	A20629 B5M7M0 A225T3 QJWRV00 A3C3E5 G5Y4M4 B4FWB4 A9NYX9 A9NZ96 C0PTE0 A9NYX9 A9NZ96 C0PTE0 D7LRC1 Q8L953 B7FIQ2 B9CF39 B7FIQ2 B9CF39 A9NZ26 C65215 B7FIQ2 B9CF39 A9PAE7 B9CF39 A9PAE7 B9CF39 A9PAE7 B9CF39 A9PAE7 B9CF39 B9C72 A5ALL1 B9C6F53 B9C72 A5ALL1 B9C6F53 B9C72 A5ALL1 B9C72 A5ALL1 B9C72 A5ALL1 B9C72 B9C73 B9C72 A5ALL1 B9C72 B9C72 A5ALL1 B9C72 B9C72 B9C72 A5ALL1 B9C72 B7C72 B7C72 B7C72 B7C72 B7C72 B	MEDTA POPTR ORYSJ ORYSJ ORYSJ ORYSJ SORBJ PICSJ	47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e 1, 47A2 Oin e 1, 47B3 Oin e 1, 48A3 Oin e 1, 48B3 Oin e 1, 48B3 Oin e 1, 48B3 Oin e 1, 48D4 Oin e 1, 48D4 Oin e 1, 48D5 Oin e 1, 48F3 Oin e 1, 48F3 Oin e 1, 48F3 Oin e 1, 48F4 Oin e 1, 48F3 Oin e 1, 48F4 Oin e 1, 48F3	Os1290472800 S00011s012840 Pollen ole e 1 allergen ATSG10130.4lbe protein ATSG10130.4lbe protein S0A03_10 Putative pollen Ole e 1 allergen S0A03_10 Pollen-specific protein C13 Affergen-like protein BREn20 Pollen-specific protein Pollen-specific protein Pollen-specific protein S0A04_357 assembly12x Allergen-like protein BRSn20 Putative SAH7 protein Putative SAH7 protein	Q2Q852 B4FY38 B4T2W5 C8JRP6 C8JRP6 C8JRP6 C8JRP6 C8JRP6 C8JRP6 C8JRP6 C8JRP6 C8JRP6 C3JRP6 C3JRP6 C3JRP6 C3JRP6 B974H0 D7788H5 B974H0 D7788H5 G932V5 Q42077 A3P956 A3P956 A3P956 A3P956 A3P956 A3P956 C3J277 A3P956 C3J277 A3P956 C3J277 C3SFA C42077 C455VH7 C457FA3	ORYSJ MAIZE MAIZE SORBI MAIZE SORBI MAIZE SORBI ARALY ARATH ARATH ARATH ARATH POPTR RICCO ARALY ARATH POPTR POPTR POPTR POPTR POPTR POPTR POPTR RICCO NICLA VITW VITW CRIPE SAMNI COSBA GOSME GOSME GOSME SOYBN SOYBN SOYBN SOYBN SOYBN SORBI
35 36 37 37 37 37 37 37 37 38 38 38 39 39 39 39 39 39 39 39 39 39 39 39 39	Ole = 1_35Å1 Ole = 1_36Å1 Ole = 1_37Å1 Ole = 1_37Å2 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å3 Ole = 1_37Å1 Ole = 1_38Å1 Ole = 1_38Å1 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_38Å3 Ole = 1_40Å3 Ole = 1_43Å1 Ole = 1_44Å1 Ole = 1_44Å1 Ole = 1_44Å1 Ole = 1_46Å4 Ole = 1_46Å4	MirDRAFT AC172742g23y1 POPTRORAFT 564521 O4.033013 O4.1090205700 O4.26257 O5.1_31017 35065g003010 ARALYDRAFT 564511 A13g26960 Pollen proteints Oile el family ARALYDRAFT 564511 A13g26960 Pollen proteints Oile el family ARALYDRAFT 1959256 POPTRORAFT 174592 POPTRORAFT 174592 POPTRORAFT 174592 POPTRORAFT 174592 POPTRORAFT 174592 POPTRORAFT 174592 POPTRORAFT 14100 VIT_000.31047001 PI E Lone: MOJ10 A15g13140 ARALYDRAFT 413072 ED00 O4 31975 O540 35975 O540 35975	A20629 B5977M0 A22573 QJRV00 A27M00 A3C3E5 G5Y4M4 B4FW84 A9N2N8 A9N2N8 A9N2N8 A9N2N8 A9N2S5 C0PTE0 A9N2S5 C0PTE0 D7LRC1 QEL953 B65LJ6 07M127 Q9FLM4 C67792 C65215 B7FIQ2 B9GF61 B9GF61 B9GF59 B9F198 Q9L809 Q9FL98 B9F198 Q9FL98 B9F198 Q9FL98 D7%972 A5ALLR B9GM65 B9RH38 B9G2C8 A51598 B8D0C0 Q0J011 B9G4H1 C55598	MEDTR POPTR ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ SORBJ PICSJ	47 47 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	Oin e 1, 47A2 Oin e 1, 47B2 Oie e 1, 47B3 Oie e 1, 48A4 Oie e 1, 48A4 Oie e 1, 48A4 Oie e 1, 48A4 Oie e 1, 48B3 Oie e 1, 48B3 Oie e 1, 48B3 Oie e 1, 48B3 Oie e 1, 48D3 Oie e 1, 48D3 Oie e 1, 48D5 Oie e	Os1290472800 S00011s012840 Pollen ole e 1 allergen ATSG10130 libe protein ATSG10130 libe protein ATSG10130 libe protein Putalive pollen Gu e 1 allergen B0A03_10 Pollen-specific protein C13 Allergen-like protein BRSh20 Pollen-specific protein Pollen-specific protein Pollen-specific protein Pollen-specific protein Pollen-specific protein Putalive SAH7 protein	Q20852 B47Y38 B472W5 C8JRP6 C8JRP6 C8JRP6 C8JRP6 C8JRP6 C9JR279 B7U959 Q3LX13 C3JJ38 Q4A8Q7 8HFN2 B94553 B974H0 D7M8H5 Q322Y5 Q42077 A9P956 A3P956 A3P956 A3P950 A3P950 A3P950 A3P950 A3P950 A3P950 A3P950 C3J37 A58PK1 Q7R84 Q84PK9 Q84PK9 Q84PK9 Q84PK5 Q84P	ORYSJ MAIZE MAZE SORBI MAZE SORBI MAZE SORBI RARATH ARAALY ARATH ARATH ARATH ARATH ARATH ARATH POPTR POPTR POPTR POPTR POPTR POPTR POPTR POPTR POPTR POPTR POPTR SARATH ARATH ARATH ARATH ARATH SORBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA GOSBA

Table 1. (continued). The Ole e 1 protein superfamily: new and unified nomenclature.

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#### Systematic and Phylogenetic Analysis of the Ole e 1 Pollen Protein Family Members in Plants

	Obe a 1_48#8	· · · · · · · · · · · · · · · · · · ·	BAFKOZ	MAIZE	52	Die # 1_52C1	Olea1-like protein	Q49613	BETPN
48	Ole s 1_48HS	Palien-specific protein C13	BET7Z0	MAIZE	52	Ole a 1_52D1	Pailen allergen Che a 1	BISUAE	RICCO
48	Gle e 1_4811	Putative pollen specific pret.C13	QURUSO	ORYSJ	57	Qte e 1_52E1	PN40024	DITJLT	VITVI
48	Ole e 1 4812	Os10g0371000 protein	Q0/V39	ORYSJ	52	Ola e 1 52F1		C67L27	SOYBA
40	Die at ASIS		4776.15	ORVSI	52	Ole a 1 57F2		BZEGN2	MEDTE
40	Diest date	Dollars anothe protein C13	neriin	MAITE	52	Din - 4 6104	Dation ellerates Dis a t	ORICER	CUES
46	Qiest auto	Ponen-specific protein C/2	Beaut	MALLE	32	011 01 0201	Polien wintgen che a i	GILORD	CREA
48	Ols 0 1_485	Polian-specific protein C13	861394	MALZE	52	Ola # 1_52G2	Pollen allergen Gro s 1	Q29W25	CROS/
18	Cie e 1_4HIS	Sh0012s014630	C6JHR2	SORBI	52	Ole # 1_52H1	Sal k 4	E2DOZA	SALKA
48	Ole e 1_4387	Polleo-specific protein	Q677C4	HYAOR	52	Gle e 1_5211	12	89N635	POPTA
48	Ole e 1_48J1	Major pollen allergen Lol p 11	G7M1X5	LOLPR	52	Ofe # 1 5212		BSPSZU	POPTN
49	Oten 1 4817	Pollen diaroan Phi n 11	OSHEL 7	PHIPE	52	O(e e 1 5211	745	BWIVI	POPTR
40	Ole + 4 4913	Co01+001020	CEXMOR	SOOD	- 63	Class 4 5214	Anthon encolling sent 1 ATES	DOSDKO	RICCO
4.6	Ure e 1 4503	3003007020	COARDO	SURBI	- 24	01001,2001	Without-abacilie blot rwist	B33669	RICCO
48	098 8 1_4834	Polien stargen Phi p 11	861228	MAIZE	52	Ole a 1 SZK1	451	O/HUW3	GOSH
48	OW # 1_4815		A2YE17	ORYSI	52	Ole e 1 52L1	Anther-specific prel. LATS2	P13447	SOLLO
48	Ole e 1 ASJS	Os06g0556800 protein	Q52710	ORYSJ	53	Ole e 1 53A1		D7KDQ5	ARALY
48	Ole at 4981	56080007260	C5YUU2	SOREI	54	Ole e 1 54A1	Pollan-specific protein - like	049527	ARATH
40	Dia a \$ ARK?		BIECCI	MAIZE	66	Old of SSAT	Botatika Ale a 1 Ska printelo	ATEAAE	Meta
40	Ole el tonz	Patter all cars Deb a 44	Dertus	INAL TE		Old of ACAT	Males added allocate Dista	003343	THOLE I
48	Qie e t_asha	Policin allergen Phy p 11	BEIMPS	MALLE	20	U10 01_00A1	Major potten abergen Pal 1	MRETOX	PLACA
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52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_57428           Ole e 1_57428           Ole e 1_57429           Ole e 1_57429           Ole e 1_57420           Ole e 1_57431           Ole e 1_57431           Ole e 1_57431           Ole e 1_57435           Ole e 1_57437           Ole e 1_57437           Ole e 1_57437           Ole e 1_57437	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole e I olive pollen allergen	Q9FJ4II AF532753 AF532754 AY137463 AY137463 AY137469 Y12426 AF532758 AF532763 AF532763 AF532763 AF532763 AF532764 AF532764 AF532764 AF532764	ARATH OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu	57 61 61 61 61 61 62 62 62 62 62 62 62 62 62 63 84 84	Ole # 1_67A21 Ole # 1_67A2 Ole # 1_67A2 Ole # 1_67A3 Ole # 1_67A3 Ole # 1_67B3 Ole # 1_67B3 Ole # 1_67B3 Ole # 1_67B3 Ole # 1_67B3 Ole # 1_67B3 Ole # 1_67A1 Ole # 1_67A1 Ole # 1_67A1 Ole # 1_67A1 Ole # 1_67A1 Ole # 1_67A1	Ote e 1 olive pollen altergen A/2g16s30 PN40024	Q38LF4 D7L7M3 B9H158 A9PG40 B95QJ5 A2WZR9 A3A255 B6TF27 B4F206 B6TR12 B66TR12 B66TR12 B66TR12	ARATI ARALI POPTH POPTH POPTH POPTH POPTH POPTH POPTH POPTH POPTH POPTH PHYPA
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_57825 Ole e 1_57826 Ole e 1_57826 Ole e 1_57826 Ole e 1_57825 Ole e 1_57825 Ole e 1_57825 Ole e 1_57825 Ole e 1_57825 Ole e 1_57831 Ole e 1_57831 Ole e 1_57833 Ole e 1_57835 Ole e 1_57835 Ole e 1_57836 Ole e 1_57836 Ole e 1_57836 Ole e 1_57836 Ole e 1_57836 Ole e 1_57836	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole e I olive pollen allergen	Q9FJ43 AF532753 AF532754 AY137467 AY137469 S75766 AF532762 AF532762 AF532762 AF532763 AF532763 AF532763 AF532764 AF532763 AY159884	ARATH OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu	57 61 61 61 61 61 62 62 62 62 62 62 62 62 62 63 64 64 55	Oie e 1_57A21 Oie e 1_61A2 Oie e 1_61A3 Oie e 1_61B1 Oie e 1_61B3 Oie e 1_61B3 Oie e 1_61B4 Oie e 1_61B4 Oie e 1_61B4 Oie e 1_62B1 Oie e 1_62B1 Oie e 1_62B3 Oie e 1_62B3 Oie e 1_63A1 Oie e 1_64B1 Oie e 1_64B1	Ote e 1 olive pollen allergen A/2g16830	AP533760 Q38LF4 D7L7M3 B9H159 A9PC40 B950J5 D7U593 A2WZR9 A3R255 B6TF27 B4FZ06 B6TF27 B4FZ06 B6TF27 B4FZ06 B6TF27 B4FZ06 B4FZ	ARATP ARALY POPTE RICCC VITVI ORYSS ORYSS MAIZE MAIZE MAIZE MAIZE PHYPJ SELM
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_57426           Ole e 1_57430           Ole e 1_57433           Ole e 1_57433           Ole e 1_57436           Ole e 1_57437           Ole e 1_57438           Ole e 1_57436           Ole e 1_57437           Ole e 1_57438           Ole e 1_57438           Ole e 1_57438           Ole e 1_57438	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole e I olive pollen allergen	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 Y12426 AF532763 AF532767 AF532767 AF532767 AF532767 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763	ARATH OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu	57 61 61 61 61 61 62 62 62 62 62 62 62 62 62 62 62 63 64 55 55	Ole e 1_67A21 Ole e 1_67A21 Ole e 1_67A2 Ole e 1_67A3 Ole e 1_67B1 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B4 Ole e 1_67B4 Ole e 1_67B4 Ole e 1_67B5 Ole e 1_63A1 Ole e 1_63A1 Ole e 1_63A1 Ole e 1_63A2	Ote e 1 olive pollen allergen  A/2g16630  PN450024  PN450024	AP533760 Q38LF4 D7L7M3 B9N159 A9PG40 B95QJ5 D7U593 A2W2R9 A3A255 B6TR12 B4FZU6 B6TR12 B6UFG0 A3RQ15 A3RJ10 DFTAVB DFTAVB DFTAVB	ARATI ARALI POPTI RICCC VITVI ORYS. MAIZE MAIZE MAIZE PHYPJ PHYPJ SELMI
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_52B6           Ole e 1_52B6           Ole e 1_52B6           Ole e 1_57A28           Ole e 1_57A28           Ole e 1_57A28           Ole e 1_57A28           Ole e 1_57A32           Ole e 1_57A32           Ole e 1_57A33           Ole e 1_57A33           Ole e 1_57A34           Ole e 1_57A35           Ole e 1_57A36           Ole e 1_57A38           Ole e 1_57A38           Ole e 1_57A38           Ole e 1_57A39           Ole e 1_57A39           Ole e 1_57A39           Ole e 1_57A34	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole e I olive pollen allergen	Q9FJ4II AF532753 AF532754 AY137467 AY137467 AY137468 AY137468 AY137468 AY137468 AF532758 AF532761 AF532758 AF532763 AF532764 AF532764 AF532764 AY159880 AY159881 AY159881	ARATH OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu	57 61 61 61 61 61 62 62 62 62 62 62 62 62 62 62 62 62 63 64 55 55 55	Ole e 1_57A21 Ole e 1_61A2 Ole e 1_61A2 Ole e 1_61B1 Ole e 1_61B2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_62B1 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_63A1 Ole e 1_65A2 Ole e 1_65A2 Ole e 1_65A5	Ote e 1 olive pollen allergen A/2g16630 PN40024	AP533760 D38LF4 D7L7M3 B9H158 A9PG40 B950J5 D7U593 A2WZR9 A3A255 B6TF27 B4FZ06 B6TF27 B4FZ06 B6TF27 B6UFG0 A3RQ15 A3RQ15 D8TAV9 D8TAV9 D8TAV9 D8TAV9	ARATH ARATH POPTE POPTE RICCC VITW ORYS ORYS ORYS MAIZE MAIZE MAIZE MAIZE PHYPA SELMI SELMI SELMI
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1         57.825           Ole e 1         57.826           Ole e 1         57.826           Ole e 1         57.826           Ole e 1         57.828           Ole e 1         57.833           Ole e 1         57.839           Ole e 1         57.840           Ole e 1         57.840           Ole e 1         57.840	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole e I olive pollen allergen Altergen Frie 1 Ole e I olive pollen allergen	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137469 S75766 Y12426 AF532763 AF532761 AF532762 AF532763 AF532763 AF532763 AF532763 AF532763 AY159881 AY159881 AY159881 AY159881	ARATH OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu OleEu	57 61 61 61 61 62 62 62 62 62 62 62 62 62 62 62 62 63 64 64 55 55 56 6	Ole e 1_57A21 Ole e 1_57A21 Ole e 1_61A2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B4 Ole e 1_61B4 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_63A1 Ole e 1_63A2 Ole e 1_63A2 Ole e 1_63A2	Ote e 1 olive polien allergen A/2g16630 PN40024	Q98LF4 D7/7M3 B9H159 A9PG40 B950J5 D7U593 A2WZR9 A3A255 B4FZ06 B6TR12 B4FZ06 B6TR12 B4FZ06 B4FR10 B4FZ06 B4FR10 B4FR10 B4FR10 D8TDP3 D8TDP3 D8TDP3 D8TDP3 D8TDP3	ARATI ARATI POPTI RICCC VITVI ORYS ORYS MAIZE MAIZE MAIZE MAIZE PHYPA PHYPA SELMI SELMI SELMI
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_57826           Ole e 1_57827           Ole e 1_57837           Ole e 1_57840           Ole e 1_57842	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole e I olive pollen allergen Altergen Ftäe I	Q9FJ4II AF532753 AF532754 AY137463 AY137463 AY137463 AY137463 AY137463 AY137463 AY137463 AY137463 AY137463 AF532762 AF532762 AF532762 AF532762 AF532763 AF532763 AF532764 AF532764 AF532764 AF532764 AY159884 Q60740 X76540	ARATH OleEu	57 61 61 61 61 61 62 62 62 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_57A21 Ole e 1_67A2 Ole e 1_67B1 Ole e 1_67B1 Ole e 1_67B3 Ole e 1_67B1 Ole e 1_65A2 Ole e 1_65A2 Ole e 1_65A2 Ole e 1_65A2	Ote e 1 olive polien allergen Ar2g16630 PN40024 PN40024 PN40024 Pn40024 Pn40024	Q35LF4 D7L7M3 B9H159 A9PG40 B95Q35 D7U593 A2W2R9 A3A255 B6TR12 B61R12 B71 B71 B71 B71 B71 B71 B71 B71 B71 B71	ARATH ARALL POPTT
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_57428           Ole e 1_57428           Ole e 1_57429           Ole e 1_57429           Ole e 1_57429           Ole e 1_57429           Ole e 1_57431           Ole e 1_57432           Ole e 1_57433           Ole e 1_57430           Ole e 1_57431           Ole e 1_57438           Ole e 1_57440           Ole e 1_57443           Ole e 1_57443	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole e I olive pollen allergen Altergen Ftä-6 I Ole e I olive pollen allergen Ole e I olive pollen allergen	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 S75766 Y12426 AF532756 AF532757 AF532767 AF532767 AF532767 AF532767 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AY159884 Q60740 X76540 X76539	ARATH OleEu	57 61 61 61 61 62 62 62 62 62 62 63 63 64 64 65 65 65 65 65 66	Ole e 1_57A21 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_61A2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B4 Ole e 1_61B4 Ole e 1_62B1 Ole e 1_62B1 Ole e 1_62B3 Ole e 1_63A1 Ole e 1_63A1 Ole e 1_63A1 Ole e 1_63A2 Ole e 1_66A1 Ole e 1_66A2 Ole e 1_66A3	Ote e 1 olive polisn allergen Ar2g16630 PN40024	AP533760 Q38LF4 D7L7M3 B9H159 A9PC40 B950J5 D7U593 A2WZR9 A3A255 B4FZ17 B4FZ16 B6TF27 B4FZ16 B6TF27 B4FZ16 D8TF27 D8TDP3 D7TV720 O84586 D7LH37	ARATP ARAL POPT RICCC VITVI ORYSI ORYSI MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE ARAL ARAL ARAL
52 52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_57426           Ole e 1_57430           Ole e 1_57431           Ole e 1_57433           Ole e 1_57431           Ole e 1_57441           Ole e 1_57443	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole e I olive pollen allergen	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 Y12426 AF532763 AF532767 AF532767 AF532767 AF532767 AF532767 AF532763 AY159881 AY159881 Q60740 X76539 B7FNF5	ARATH OleEu	57 61 61 61 61 61 62 62 62 62 62 62 62 62 62 62 62 62 62	Ole e 1_67A21 Ole e 1_67A21 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67A3 Ole e 1_67B1 Ole e 1_67B1 Ole e 1_67B4 Ole e 1_67B4 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B1 Ole e 1_67A1 Ole e 1_65A1 Ole e 1_65A2 Ole e 1_66A1 Ole e 1_66A1 Ole e 1_67A3 Ole e 1_66A2	Ote e 1 olive polien allergen A/2g16630 PN40024 	AP533760 Q38LF4 D7L7M3 B9N159 A9PG40 B950J5 D7U593 A2W2R5 A3A255 B4F206 B6TR12 B4F206 B6TR12 B4F206 B6TR12 B4F206 B6TR12 B4F206 B4F206 B5R152 B4F206 B4 B4 B4 B4 B4 B4 B4 B4 B4 B4	ARATI POPTI POPTI RICCC VITVI ORYS ORYS ORYS MAZE MAZE MAZE PHYR/ PHYR/ SELMI SELMI ARAL ARAL ARAL
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_57428           Ole e 1_57432           Ole e 1_57432           Ole e 1_57433           Ole e 1_57438           Ole e 1_57438           Ole e 1_57438           Ole e 1_57439           Ole e 1_57441           Ole e 1_57442	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole e I olive pollen allergen	Q9FJ48 AF532753 AF532754 AY137468 AY137468 AY137468 AY137468 AY137468 AY137468 AY137468 AY137468 AY137468 AF532758 AF532763 AF532763 AF532763 AF532763 AF532763 AY159880 AY15980 AY15980 AY15980 AY15980 AY15980 AY15980 AY15980 AY15980 AY15980 AY15980 AY15980 AY15980 AY15980 AY15980 AY15980 AY	ARATH OleEu	57 61 61 61 61 61 62 62 62 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_67A21 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67B1 Ole e 1_67B2 Ole e 1_67B3 Ole e 1_65A2 Ole e 1_65A2 Ole e 1_65A2 Ole e 1_65A2 Ole e 1_67A1 Ole e 1_67A2	Ote e 1 olive pollen allergen Ar2g16630 PN40024 PN40024 proline-rich glycopretein. Ar2g33790	AP533760 D38LF4 D7L7M3 B9H159 A9P340 B950J5 D7U593 A2WZR9 A3A255 B6TF27 B4F2U6 B6TF27 B4F2U6 B6TF27 B6UF00 A3RQ15 B6UF00 A3RQ15 D7U593 D7U5	ARATT ARAL POPT POPT RICCC VITW ORYS ORYS MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE ARATT ARAL ARAT
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_52883           Ole e 1_52883           Ole e 1_52883           Ole e 1_52883           Ole e 1_57A28           Ole e 1_57A33           Ole e 1_57A33           Ole e 1_57A33           Ole e 1_57A33           Ole e 1_57A39           Ole e 1_57A39           Ole e 1_57A31           Ole e 1_57A33           Ole e 1_57A341           Ole e 1_57A43	Ole e I-like protein Ole e I-like protein Ole e I olive protein allergen Ole e I olive pollen allergen Ole a I olive pollen allergen Ole a I olive pollen allergen Ole e I olive pollen allergen Ole a I olive pollen allergen Ole a I olive pollen allergen Ole a I olive pollen allergen	Q9FJ4II AF532753 AF532754 AY137467 AY137467 AY137467 S75766 AF532758 AF532758 AF532758 AF532758 AF532758 AF532759 AF532763 AF532763 AF532763 AF532763 AF532763 BF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF5539 B7FNF3 CF5YE3	ARATH OleEu	57 61 61 61 61 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_61A2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B4 Ole e 1_61B4 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_63A1 Ole e 1_63A2 Ole e 1_65A2 Ole e 1_65A3 Ole e 1_65A2 Ole e 1_65A3 Ole e 1_65A2 Ole e 1_65A2 Ole e 1_65A2 Ole e 1_65A2 Ole e 1_67A2 Ole e 1_67A2	Ote e 1 olive polien altergen At2g16630 PN40024 PN40024	AP533760 Q98LF4 D7/7M3 B9H159 A9PC40 B950J5 D7U593 A2WZR9 A3A255 B4FZ06 B6TR12 B4FZ06 B6TR12 B6UFG0 A3RQ15 A3SHJ0 DFTAV3 DFTDP3 DFM Y20 O64586 D7/437 D7/457 D7/47 D7/457 D7/457 D7/457 D7/4	ARATP ARALL POPTE POPTE RICCC ORYSE MAIZE MAIZE MAIZE MAIZE MAIZE PHYPJ PHYPJ SELMI SELMI ARALL ARATP ARALL ARATY ARATY
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_57826           Ole e 1_57837           Ole e 1_57847           Ole e 1_57840           Ole e 1_57841           Ole e 1_57842           Ole e 1_57842           Ole e 1_57842           Ole e 1_5884           Ole e 1_5884           Ole e 1_5884           Ole e 1_5884	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole a I olive pollen allergen Ole a I olive pollen allergen Ole a I olive pollen allergen	Q9FJ4II AF532753 AF532754 AY137463 AY137463 AY137463 AY137469 CF532761 AF532762 AF532762 AF532762 AF532762 AF532762 AF532763 AY159884 Q60740 X765341 X76536 B7FNF5 B7FNF5 B7FNF5 B7FNF5	ARATH OleEu	57 61 61 61 61 61 61 62 62 62 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67B3 Ole e 1_67A1 Ole e 1_67A1 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67A2	Ote e 1 olive pollen allergen Ar2g16630 PN40024 PN40024 proline-rich glycopentein Ar2g33790 Ar1g28280 Profine-fic Produin	APS33760 APS33760 APS33760 APS34760 B9H158 B9H158 B9H58 D7U593 A2WZR9 A3A255 B6TF27 B4F206 B6TF27 B4F206 B6TF27 B6UF00 D8TAV2 D8TDP3 D7H720 D8TAV2 D8TDP3 D7H720 O64586 D7LH37 D7LGF2 P33013 Q6FZA2 Q0W2P47	ARATI POPTI POPTI POPTI RICCO VITVI ORYS MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE ARATI ARATI ARATI ARATI ARATI
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Oile # 1_5/285           Oile # 1_5/2737           Oile # 1_5/2737           Oile # 1_5/2737           Oile # 1_5/2741           Oile # 1_5/242	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole a I olive pollen allergen	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 Y12426 AF532756 Y12426 AF532757 AF532752 AF532752 AF532763 AF532765 AF53276 AF532765	ARATH OleEu	57 61 61 61 61 62 62 62 62 62 62 63 63 64 64 65 65 65 65 65 65 65 67 67 67	Ole e 1_57A21 Ole e 1_57A21 Ole e 1_61A2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B4 Ole e 1_61B3 Ole e 1_62B1 Ole e 1_62B1 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_63A1 Ole e 1_63A1 Ole e 1_63A1 Ole e 1_63A2 Ole e 1_66A1 Ole e 1_66A3 Ole e 1_67B1 Ole e 1_67B2 Ole e 1_67B2	Ote e 1 olive polien allergen Ar2g16630 PN40024 PN40024 Proline-rich glycopretein Ar2g33790 Ar1g28290 proline-rich protein	AP533760 Q98LF4 D7L7M3 B9H159 A9PC40 B950J5 D7U593 A2WZR9 A3A255 B4FZ17 B4FZ16 B6TF27 B4FZ16 B6TF27 B4FZ16 D8TDP3 D7W720 D8TDP3 D7W720 D8TDP3 D7LGE7 P33013 Q9FZA2 Q0WP47 D7LGE7	ARATT POPT POPT POPT POPT RICCC VITVI ORYS ORYS MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE ARATT ARAL ARATT ARATT
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_57826           Ole e 1_57836           Ole e 1_57836           Ole e 1_57837           Ole e 1_57841           Ole e 1_57841           Ole e 1_57843           Ole e 1_57843           Ole e 1_57843           Ole e 1_57843           Ole e 1_5884           Ole e 1_5884           Ole e 1_5884           Ole e 1_5984           Ole e 1_5984	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole e I olive pollen allergen	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 Y12426 AF532763 AF532767 AF532767 AF532767 AF532767 AF532767 AF532767 AF532767 AF532763 AY159881 AY159881 AY159881 AY159881 AY159881 AF535 B7FNF3 B7FNF5 B7FNF5 B7FNF5 B7FNF5 B7FNF5 B7FNF5	ARATH OleEu	57 61 61 61 61 62 62 62 62 62 62 62 62 62 62 62 62 62	Ole e 1_67A21 Ole e 1_67A21 Ole e 1_67A2 Ole e 1_61A2 Ole e 1_61A2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B4 Ole e 1_61B4 Ole e 1_61B4 Ole e 1_62B2 Ole e 1_62B3 Ole e 1_62B1 Ole e 1_63A1 Ole e 1_63A1 Ole e 1_65A1 Ole e 1_66A1 Ole e 1_67A3 Ole e 1_67B3 Ole e 1_67B3	Ote e 1 olive polien allergen A/2g16630 PN440074 	AP533760 Q38LF4 D7L7M3 B9N159 A9PG40 B950J8 D7U593 A2W2R9 A3A255 B6TF27 B4F2U6 B6TR72 B4F2U6 B6TR72 B4F2U6 B6TR72 B4F2U6 B6TR72 D7U593 D7W720 O84586 D7LH37 D7LGE7 P33013 Q9F2A2 Q0WP47 O7KCU8	ARATT ARAL POPTT POPTT POPTT RICCC VITVI ORYS ORYS MAIZE MAIZE MAIZE MAIZE MAIZE PHYP/ SELMI SELMI ARAL ARATT ARAL ARATT ARATT
52 552 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_57428           Ole e 1_57432           Ole e 1_57433           Ole e 1_57438           Ole e 1_57438           Ole e 1_57438           Ole e 1_57438           Ole e 1_57439           Ole e 1_57442           Ole e 1_57442           Ole e 1_57442           Ole e 1_5842           Ole e 1_5843	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole a I olive pollen allergen	Q9FJ4II AF532753 AF532754 AY137463 AY137463 AY137463 AY137463 AY137463 AY137463 AY137463 AY137463 AY137463 AY137463 AF532763 AF532763 AF532764 AF532763 AF532764 AY159880 AY15980 AY15980 AY15980 AY159880 AY159880 AY159880 AY159880 AY15980	ARATH OleEu	57 61 61 61 61 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_57A21 Ole e 1_61A2 Ole e 1_61B1 Ole e 1_61B2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_63A1 Ole e 1_63A1 Ole e 1_63A2 Ole e 1_65A2 Ole e 1_65A2 Ole e 1_65A2 Ole e 1_67A3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3	Ote e 1 olive polien allergen Ar2g16630 PN40024 PN40024 proline-rich glycopretein Ar2g33790 Ar1g22200 proline-rich protein HyPRP1	AP533760 QIBLF4 D7L7M3 B9H159 A9P340 B950J5 D7U593 A2WZR9 A3A255 B6TF27 B4FZ06 B4FZ06 B4FZ07 B4FZ06 B4FZ07 B4FZ07 B4FZ08 D7U593 D70555 D70555 D70555 D70555 D70555	ARATT ARAL POPT POPT RICCC VITW ORYS ORYS MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE ARAT ARAL ARAT ARAL ARAT ARAT ARAT ARAT
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_57826           Ole e 1_57833           Ole e 1_57833           Ole e 1_57836           Ole e 1_57836           Ole e 1_57837           Ole e 1_57836           Ole e 1_57836           Ole e 1_57837           Ole e 1_57837           Ole e 1_57841           Ole e 1_57841           Ole e 1_5881           Ole e 1_5883           Ole e 1_5883 <tr< td=""><td>Ole e I-like protein Ole e I-like protein Ole e I olive protein allergen Ole e I olive pollen allergen Ole a I olive pollen allergen</td><td>Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 AY137467 Y12426 AF532758 AF532758 AF532758 AF532758 AF532759 AF532761 AF532763 AF532763 AF532763 AF532763 BF5327539 B7FNF3 B7FNF3 B7FNF5 B</td><td>ARATH OleEu</td><td>57 61 61 61 62 62 62 62 62 62 62 62 62 62</td><td>Ole e 1_57A21 Ole e 1_67A2 Ole e 1_61A2 Ole e 1_61A2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_63A1 Ole e 1_63A2 Ole e 1_63A2 Ole e 1_63A2 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_67A2 Ole e 1_67B3 Ole e 1_67B3</td><td>Ote e 1 olive polien allergen Ar2g16630 PN40024 PN40024 Ar2g33790 Ar1g28290 proline-rich protein HyPRP1 Arzsbinogalactan protein</td><td>AP533760 Q98LF4 D7L7M3 B9H159 A9PC40 B950J5 D7U593 A2WZR9 A3A255 B4FZ06 B6TR12 B4FZ06 B6TR12 B6UFG0 A3RQ15 A3SHJ0 D8TDP3 D7M Y20 O84586 D7L437 D7L6E7 P33013 Q9FZA2 O0WP47 O7KCUB Q0FW32 C8YQU7</td><td>ARATI POPTI POPTI POPTI POPTI POPTI POPTI POPTI ORYS ORYS ORYS ORYS ORYS ORYS ORYS ORYS</td></tr<>	Ole e I-like protein Ole e I-like protein Ole e I olive protein allergen Ole e I olive pollen allergen Ole a I olive pollen allergen	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 AY137467 Y12426 AF532758 AF532758 AF532758 AF532758 AF532759 AF532761 AF532763 AF532763 AF532763 AF532763 BF5327539 B7FNF3 B7FNF3 B7FNF5 B	ARATH OleEu	57 61 61 61 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_67A2 Ole e 1_61A2 Ole e 1_61A2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_63A1 Ole e 1_63A2 Ole e 1_63A2 Ole e 1_63A2 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_67A2 Ole e 1_67B3 Ole e 1_67B3	Ote e 1 olive polien allergen Ar2g16630 PN40024 PN40024 Ar2g33790 Ar1g28290 proline-rich protein HyPRP1 Arzsbinogalactan protein	AP533760 Q98LF4 D7L7M3 B9H159 A9PC40 B950J5 D7U593 A2WZR9 A3A255 B4FZ06 B6TR12 B4FZ06 B6TR12 B6UFG0 A3RQ15 A3SHJ0 D8TDP3 D7M Y20 O84586 D7L437 D7L6E7 P33013 Q9FZA2 O0WP47 O7KCUB Q0FW32 C8YQU7	ARATI POPTI POPTI POPTI POPTI POPTI POPTI POPTI ORYS ORYS ORYS ORYS ORYS ORYS ORYS ORYS
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52 52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_57428           Ole e 1_57438           Ole e 1_57438           Ole e 1_57438           Ole e 1_57438           Ole e 1_57439           Ole e 1_57439           Ole e 1_57431           Ole e 1_57432           Ole e 1_57431           Ole e 1_57432           Ole e 1_57431           Ole e 1_57432           Ole e 1_5842           Ole e 1_5842           Ole e 1_5842           Ole e 1_5843           Ole e 1_5943           Ole e 1_5943           Ole e 1_5943	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole i I I olive pollen allergen Ole I I I olive pollen allergen Ole I I I I I I I I I I I I I I I I I I I	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 Y12426 AF532756 Y12426 AF532757 AF532767 AF532767 AF532767 AF532767 AF532767 AF532767 AF532767 AF532767 AF532763 A	ARATH OleEu	57 61 61 61 61 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_57A21 Ole e 1_61A2 Ole e 1_61B1 Ole e 1_61B1 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B4 Ole e 1_62B2 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_65A1 Ole e 1_65A2 Ole e 1_67B3 Ole e 1_68A4 Ole e 1_67B3 Ole e 1_68A4 Ole e 1_68A4 Ole e 1_68A4 Ole e 1_68A4 Ole e 1_68A4	Ote e 1 olive polien allergen Ar2g16830 PN40024 PN40024 proline-rich glycopretein Ar2g33790 Ar1g28290 proline-rich protein HyPRP1 Arzbinogalactan protein proline-rich protein	AP533760 AP533760 D7U7M3 B9H159 A9PC40 B950J5 D7U593 A2WZR9 A3A255 B6TF27 B4FZ06 B4FZ06 B4FZ07 B4FZ06 B4FZ07 B4FZ07 B4FZ07 B4FZ07 B4FZ07 B4FZ07 B4FZ07 B4FZ07 B4FZ07 B4FZ07 D7U593 D7	ARATT POPT POPT RICCC VITVI ORYS ORYS MAIZE MAIZ
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_57A26           Ole e 1_57A30           Ole e 1_57A31           Ole e 1_57A33           Ole e 1_57A33           Ole e 1_57A36           Ole e 1_57A37           Ole e 1_57A38           Ole e 1_57A31           Ole e 1_57A32 <td>Ole e I-like protein Ole e I-like protein Ole a I olive pollen allergen Ole a I olive pollen allergen Extensin-like protein ATI g2/100/77/N9_16</td> <td>Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 AY137469 S75764 AY137469 S75764 AF532762 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 BFNF5 B7FNF5</td> <td>ARATH OleEu</td> <td>57 61 61 61 62 62 62 62 62 62 62 62 62 62</td> <td>Ole e 1_57A21 Ole e 1_57A21 Ole e 1_61A2 Ole e 1_61A2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B4 Ole e 1_61B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_63A1 Ole e 1_63A2 Ole e 1_65A2 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_67B3 Ole e 1_63A4 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_63A4 Ole e 1_63A5 Ole e 1_67B3 Ole e 1_63B4 Ole e 1_63B4</td> <td>Ote e 1 olive polien altergen Ar2g16630 PN40024 PN40024 Ar2g33790 Ar1g28290 proline-rich protein HyPRP1 Arsbinogalactan protein proline-rich protein</td> <td>AP533760 Q98LF4 D7/L7M3 B9H159 A9PC40 B950J5 D7U593 A2WZR9 A3A255 B4FZ06 B6TR12 B4FZ06 B6TR12 B4FZ06 B6TR12 B4FZ06 D8TR23 D8TDP3 D7M Y20 O84586 D7/L93 D7M Y20 O64586 D7/L93 D7/L92 Q8TDP3 D7/L92 D</td> <td>ARATT POPTT POPTT RICCC ORYS ORYS ORYS ORYS MAIZE MAIZ</td>	Ole e I-like protein Ole e I-like protein Ole a I olive pollen allergen Ole a I olive pollen allergen Extensin-like protein ATI g2/100/77/N9_16	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 AY137469 S75764 AY137469 S75764 AF532762 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 AF532763 BFNF5 B7FNF5	ARATH OleEu	57 61 61 61 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_57A21 Ole e 1_61A2 Ole e 1_61A2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B4 Ole e 1_61B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_63A1 Ole e 1_63A2 Ole e 1_65A2 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_67B3 Ole e 1_63A4 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_63A4 Ole e 1_63A5 Ole e 1_67B3 Ole e 1_63B4 Ole e 1_63B4	Ote e 1 olive polien altergen Ar2g16630 PN40024 PN40024 Ar2g33790 Ar1g28290 proline-rich protein HyPRP1 Arsbinogalactan protein proline-rich protein	AP533760 Q98LF4 D7/L7M3 B9H159 A9PC40 B950J5 D7U593 A2WZR9 A3A255 B4FZ06 B6TR12 B4FZ06 B6TR12 B4FZ06 B6TR12 B4FZ06 D8TR23 D8TDP3 D7M Y20 O84586 D7/L93 D7M Y20 O64586 D7/L93 D7/L92 Q8TDP3 D7/L92 D	ARATT POPTT POPTT RICCC ORYS ORYS ORYS ORYS MAIZE MAIZ
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Oile e 1_52863           Oile e 1_52863           Oile e 1_52863           Oile e 1_57428           Oile e 1_57432           Oile e 1_57431           Oile e 1_57433           Oile e 1_57431           Oile e 1_57441           Oile e 1_57441           Oile e 1_57442           Oile e 1_57443           Oile e 1_57442           Oile e 1_5842           Oile e 1_5842           Oile e 1_5942           Oile e 1_5943           Oile e 1_5043	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole a I olive pollen allergen	Q9FJ4II Q9FJ4II AF532753 AF532754 AY137463 AY137463 AY137463 AY137463 AY137463 AY137463 AY137463 AY137463 AY137463 AF532762 AF532762 AF532762 AF532762 AF532763 AY159884 Q60740 X76541 X76540 X76541 X76540 AY159884 B7FNF5 C65YE3 Q94EJ3 Q84EJ3 Q84EJ3 Q84EJ3 Q84EJ3 C65VQ8	ARATH ONELI ONEEU	57 61 61 61 61 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_67A21 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67B1 Ole e 1_67B1 Ole e 1_67B3 Ole e 1_67A1 Ole e 1_67A2 Ole e 1_67A1 Ole e 1_67B3 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67A3 Ole e 1_67B3 Ole e 1_67B3	Ote e 1 olive pollin allergen Ar2g16630 PN40024 PN40024 proline-rich glycoprotein Ar2g33790 Ar1g22200 protine-rich protein HyPRP1 Arsbinogalactar, protein proline-rich protein	AP533760 OBSEF4 D7L7M3 B9H158 A9PG40 B950J5 D7U593 A2WZR9 A3A255 B6TF27 B4FZ06 B6TF27 B4FZ06 B6TF27 B4FZ06 B6TF27 B4FZ06 D7U593 A38245 D7U593 D7U593 A38245 D7U593 D7U593 A38245 B6TF27 B4FZ06 OFT27 D7U593 A38245 D7U593 A38245 D7U593 A38245 D7U593 A38255 B6TF27 B4FZ06 OFT27 D7U593 A38255 D7U593 A38255 B6TF27 B4FZ06 OFT27 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 D7U593 A38255 D7U593 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 A38255 D7U593 D7U593 A38255 D7U593 D7U593 A38255 D7U593	ARATT POPTT POPTT POPTT POPTT POPTT POPTT MAIZE MAIZE MAIZE PHYPA SELMI SELMI SELMI SELMI ARATT ARALT ARATT ARATT ARATT ARATT ARATT ARATT ARATT ARATT ARATT ARATT PHYPA PHYPA
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_57A26           Ole e 1_57A31           Ole e 1_57A33           Ole e 1_57A36           Ole e 1_57A31           Ole e 1_57A32           Ole e 1_57A32 <td>Ole e I-like protein Ole e I olive pollen allergen Ole a I olive pollen allergen Extensin-like protein ATI g27100/T7N9_16 Pollen ole I I allergen</td> <td>Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 AY137469 S75766 Y12426 AF532753 AF532763 A</td> <td>ARATH OleEu Soyte PiCSI SOYTH</td> <td>57 61 61 61 61 62 62 62 62 62 62 62 62 62 62</td> <td>Ole e 1_57A21 Ole e 1_57A21 Ole e 1_61A2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B4 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_63A1 Ole e 1_63A1 Ole e 1_65A2 Ole e 1_66A1 Ole e 1_66A3 Ole e 1_67B3 Ole e 1_63B41 Ole e 1_67B3 Ole e 1_63B41 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_63B41 Ole e 1_63</td> <td>Ote e 1 olive polien allergen Ar2g16630 PN40024 proline-rich glycopretein Ar2g33790 Ar1g28200 proline-rich protein HyPRP1 Arsbinogalactan protein proline-rich protein</td> <td>AP533760 Q98LF4 D7L7M3 B9H158 A9PC40 B950J5 D7U593 A2WZR9 A3WZR9 A3WZR9 B4FZ06 B6TR12 B6UFG0 A3RQ15 B4FZ16 B6TR12 B6UFG0 D8TDP3 D7W720 D8TDP3 D7W720 D8TDP3 D7W720 D64586 D7LH37 D7LGE2 P93013 Q4FZA2 Q0WP47 D7KC08 Q4P122 Q41122 Q47122 Q47125 A9PAW5 A9PAW5 A9PAW5 A9PAW5 A9PA42 B9H307</td> <td>ARATI POPTI POPTI POPTI POPTI POPTI MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE PHYA SELM SELM ARATI ARATI ARATI ARATI ARATI ARATI ARATI POPTI POPTI POPTI POPTI</td>	Ole e I-like protein Ole e I olive pollen allergen Ole a I olive pollen allergen Extensin-like protein ATI g27100/T7N9_16 Pollen ole I I allergen	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 AY137469 S75766 Y12426 AF532753 AF532763 A	ARATH OleEu Soyte PiCSI SOYTH	57 61 61 61 61 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_57A21 Ole e 1_61A2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B4 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_63A1 Ole e 1_63A1 Ole e 1_65A2 Ole e 1_66A1 Ole e 1_66A3 Ole e 1_67B3 Ole e 1_63B41 Ole e 1_67B3 Ole e 1_63B41 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_63B41 Ole e 1_63	Ote e 1 olive polien allergen Ar2g16630 PN40024 proline-rich glycopretein Ar2g33790 Ar1g28200 proline-rich protein HyPRP1 Arsbinogalactan protein proline-rich protein	AP533760 Q98LF4 D7L7M3 B9H158 A9PC40 B950J5 D7U593 A2WZR9 A3WZR9 A3WZR9 B4FZ06 B6TR12 B6UFG0 A3RQ15 B4FZ16 B6TR12 B6UFG0 D8TDP3 D7W720 D8TDP3 D7W720 D8TDP3 D7W720 D64586 D7LH37 D7LGE2 P93013 Q4FZA2 Q0WP47 D7KC08 Q4P122 Q41122 Q47122 Q47125 A9PAW5 A9PAW5 A9PAW5 A9PAW5 A9PA42 B9H307	ARATI POPTI POPTI POPTI POPTI POPTI MAIZE MAIZE MAIZE MAIZE MAIZE MAIZE PHYA SELM SELM ARATI ARATI ARATI ARATI ARATI ARATI ARATI POPTI POPTI POPTI POPTI
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Oile e 1_5286           Oile e 1_5286           Oile e 1_5286           Oile e 1_57826           Oile e 1_57827           Oile e 1_57827           Oile e 1_57832           Oile e 1_57832           Oile e 1_57837           Oile e 1_57840           Oile e 1_57840           Oile e 1_57841           Oile e 1_57842           Oile e 1_5882           Oile e 1_5882           Oile e 1_5882           Oile e 1_5883           Oile e 1_59845           Oile e 1_59845           Oile e 1_50847           Oile e 1_50843           Oile e 1_6083           Oile e 1_6083           Oile e 1_6083           Oile e 1_6083	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole e I olive pollen allergen	Q9FJ4II Q9FJ4II AF532753 AF532754 AY137467 AY137467 AY137467 Y12426 AF532761 AF532762 AF532762 AF532762 AF532763 AY159880 AY159881 AY159880 AY159881 X76541 X76541 X76541 X76549 B7FNF5	ARATH OleEu AleOTR AleOT	57 61 61 61 61 61 62 62 62 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67B3 Ole e 1_67A1 Ole e 1_67A1 Ole e 1_67A1 Ole e 1_67A2 Ole e 1_67A3 Ole e 1_67A3 Ole e 1_67A3 Ole e 1_67B3 Ole e 1_68C1 Ole e 1_68C1 Ole e 1_68C1 Ole e 1_68C1	Ote e 1 olive pollin allergen Ar2g16630 PN40024 PN40024 proline-rich glycopretein Ar2g33790 Ar1g28290 proline-rich protein HyPRP1 Arsbinogalactan protein proline-rich protein	APS33760 APS33760 APS33760 APS33760 APS347	ARAT ARAL POPTI POPTI RICCC VITVI MAZZI MAZZI MAZZI MAZZI MAZZI MAZZI MAZZI MAZZI MAZZI MAZZI MAZZI MAZZI MAZZI MAZZI MAZZI MAZZI MAZZI PHYP, SELM MAZZI ARAL ARAL ARAL ARAL ARAL ARAL ARAL ARA
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52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_57826           Ole e 1_57830           Ole e 1_57830           Ole e 1_57831           Ole e 1_57831           Ole e 1_57833           Ole e 1_57831           Ole e 1_57831           Ole e 1_57831           Ole e 1_57831           Ole e 1_57832           Ole e 1_57833           Ole e 1_57840           Ole e 1_57841           Ole e 1_57843           Ole e 1_57843           Ole e 1_57843           Ole e 1_57843           Ole e 1_5884           Ole e 1_5884           Ole e 1_5884           Ole e 1_5884           Ole e 1_5843           Ole e 1_6083	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Ole e I olive pollen allergen	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 AY137469 S75756 AY137469 S757567 AF532761 AF532762 AF532762 AF532763 AY159884 AY159884 AY159884 AY159884 AY159884 AY159884 AY159884 AY159884 AY159884 AF532765 AY159884 AF532765 B7FNF5 C65YE3 A99MPL2 C02E62 C78423 C654744 A992A0 A992A1 C654744 A992A0 A992A1 C654744 A992A0 A992A1 C654744 A992A0 A992A1 C654744 A992A0 A992A1 C654744 A992A0 A992A1 C654744 A992A0 A992A1 C654744 A992A0 A992A1 C654744 A992A0 A992A1 C654744 A992A0 A992A1 C654744 A992A0 A992A1 C654744 A992A0	ARATH OleEu	57 61 61 61 61 62 62 62 62 62 62 62 62 62 62 62 62 62	Ole e 1_67A21 Ole e 1_67A21 Ole e 1_67A2 Ole e 1_61A2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_62B2 Ole e 1_62B3 Ole e 1_62B2 Ole e 1_62B3 Ole e 1_63A1 Ole e 1_63A2 Ole e 1_65A2 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_67A3 Ole e 1_67A3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_63B3 Ole e 1_63B3 Ole e 1_63B3 Ole e 1_63B3 Ole e 1_63B3	Ote e 1 olive polien altergen Ar2g16630 PN40024 PN40024 PN40024 Ar2g33790 Ar1g28200 proline-rich protein HyPRP1 Arabinogalactas protein proline-rich protein Proline-rich protein	APS33760           QBSEF4           D7U7M3           B9H158           AP9640           B350,35           D70593           A2W2R9           A3A255           B6TF27           B4F206           B6TF27           B4F206           B6TF27           B4F206           B6TF27           B4F206           B6TF27           B4F206           D74,425           B6TF27           B4F206           D74,425           D74,427           D74,427           D74,427           D74,427           D74,627           P33013           Q472,427           B475,34           A9PAW5           A3PA42           B930,37           B94,273           A1P945	ARATI POPTT POPTT POPTT POPTT POPTT POPTT POPTT POPTT
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_5286           Ole e 1_5286           Ole e 1_5286           Ole e 1_57428           Ole e 1_57437           Ole e 1_57438           Ole e 1_57438           Ole e 1_57438           Ole e 1_57438           Ole e 1_57439           Ole e 1_57431           Ole e 1_57442           Ole e 1_57442           Ole e 1_5841           Ole e 1_5842           Ole e 1_5842           Ole e 1_5843           Ole e 1_5844           Ole e 1_5845	Ole e I-like protein Ole e I olive pollen allergen Ole e I ulive pollen allergen Ole e I ulive pollen allergen Ole e I olive pollen allergen Ole I I olive pollen allergen Extensin-like protein Extensin-like protein ATI g2/100/T7N9_16 Pollen ole I allergen	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 AY137467 Y12426 AF532756 Y12426 AF532757 AF532767 AF532767 AF532767 AF532767 AF532767 AF532767 AF532767 AF532767 AF532763 A	ARATH OleEu OleEU	57 61 61 61 61 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_57A21 Ole e 1_61A2 Ole e 1_61B1 Ole e 1_61B1 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B4 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_65A1 Ole e 1_65A2 Ole e 1_65A3 Ole e 1_67B3 Ole e 1_68B4 Ole e 1_68B4	Ote e 1 olive pollen allergen Ar2g16630 PN40024 PN40024 proline-rich glycopretein Ar2g33790 Ar1g22290 proline-rich protein HyPRP1 Arabinogalactan protein proline-rich protein Structural constituent of call world	AP533760 AP533760 D7U7M3 B9H159 A9PC40 B950J5 D7U593 A2WZR9 A3A255 B6TF27 B4FZ06 B6TF27 B4FZ06 B6TF27 B4FZ06 B6TF27 B4FZ06 D7U593 D7U593 D7U593 D7U593 D7U593 D7U593 D7U593 D7U593 D7U593 B6TF27 B4FZ06 D7U593 D7	ARATI POPTI POPTI MAIZE
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1 _ 57826           Ole e 1 _ 57830           Ole e 1 _ 57831           Ole e 1 _ 57832           Ole e 1 _ 57831           Ole e 1 _ 57841           Ole e 1 _ 58851           Ole e 1 _ 58851           Ole e 1 _ 5983           Ole e 1 _ 59843           Ole e 1 _ 59843           Ole e 1 _ 50841           Ole e 1 _ 50845           Ole e 1 _ 6083           Ole e 1 _ 60845	Ole e I-like protein Ole e I-like protein Ole e I olive pollen allergen Extensin-like protein Extensin-like protein AT1g27100177N9_16 Pollen ole # 1 allergen PN40024	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 AY137467 Y12426 AY137469 S75764 AY137469 S75764 AF532763 AF5	ARATH OleEu SoytAN PiCSI	57 61 61 61 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_57A21 Ole e 1_61A2 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_63A1 Ole e 1_63A1 Ole e 1_63A2 Ole e 1_63A2 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_65A3 Ole e 1_67B2 Ole e 1_67B3 Ole e 1_67B2 Ole e 1_63A2 Ole e 1_67B3 Ole e 1_67B2 Ole e 1_63A2 Ole e 1_67B2 Ole e 1_63A2 Ole e 1_67B3 Ole e 1_67B2 Ole e 1_63A2 Ole e 1_67B2 Ole e 1_68A2 Ole e 1_63B3 Ole e 1_68B3 Ole e 1_68B2 Ole e 1_68B2 Ole e 1_68B2 Ole e 1_68B2 Ole e 1_68B2 Ole e 1_68D2 Ole e 1_68D2 Ole e 1_68D2 Ole e 1_68D2 Ole e 1_68D2	Ote e 1 olive polien attergen At2g16630 PN40024 PN40024 At2g33790 At1g28290 proline-rich glycoprettein At2g33790 At1g28290 proline-rich protein Proline-rich protein Structural constituent of call well BM40034	APS33760 Q38LF4 D7L7M3 B9H159 A9PG40 B950J5 D7U593 A2WZR9 A3WZR9 B4FZ06 B6TR12 B4FZ06 B6TR12 B4FZ06 B6TR12 B4FZ06 D5TAV2 D8TDP3 D7M Y20 O84586 D7LH37 D7LGE7 P33013 Q4FZA2 O0WP47 O7KC06 Q4P1W3 C8YOU7 C6TLD2 Q41122 B7F59 A9PAW5 A9PAW5 A9PAW5 A9PAW5 A9PA42 B9H279 A1P545 B9H279 B9H279 A1P545 B9H279 B9H279 A1P545 B9H279 B9H2	ARATT POPTT POPTT PHYPA ARALL POPTT POPTT ARALLA
52 52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Oile e 1_5286           Oile e 1_5286           Oile e 1_5286           Oile e 1_57826           Oile e 1_57827           Oile e 1_57827           Oile e 1_57832           Oile e 1_57832           Oile e 1_57837           Oile e 1_57840           Oile e 1_57840           Oile e 1_57841           Oile e 1_57842           Oile e 1_57842           Oile e 1_5882           Oile e 1_5983           Oile e 1_59843           Oile e 1_50843           Oile e 1_50843	Ole e 1-like protein Ole e 1-like protein Ole e 1 olive pollen allergen Ole e 1 olive pollen allergen	Q9FJ4II Q9FJ4II AF532753 AF532754 AY137467 AY137467 AY137469 S75767 AY137469 S75767 AF532761 AF532762 AF532762 AF532763 AF532763 AY159881 Q60740 X76541 X76540 X76540 X76540 X76540 X76540 B7FNF5 B7FN	ARATH ONELL ONEEL	57 61 61 61 61 61 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_67A21 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67B3 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67A3 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67A3 Ole e 1_67B3 Ole e 1_68A3 Ole e 1_67B3 Ole e 1_68A3 Ole e 1_67B3 Ole e 1_68C1 Ole e 1_68C1 Ole e 1_68D3 Ole e 1_68D3 Ole e 1_68D3 Ole e 1_68D3	Ote e 1 olive pollin allergen Ar2g16630 PN40024 PN40024 proline-rich glycopretein. Ar2g33790 Ar1g28200 proline-rich protein HyPRP1 Ar3binogalactar, protein proline-rich protein Structural constituent of call wall PN40024	AP533760 OBSEF4 D7L7M3 B9H158 A9PG40 B950J5 D7U593 A2WZR9 A3A255 B6TF27 B4FZ06 B6TR17 B6UFG0 A3RQ15 B6UFG0 A3RQ15 B6UFG0 D7L937 D7L927 D7L9	ARATT ARAL POPTT POPTT RICCC VITW ORYS ORYS MAIZE MAIZ
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1         5288           Ole e 1         5286           Ole e 1         5286           Ole e 1         57826           Ole e 1         57831           Ole e 1         57833           Ole e 1         57831           Ole e 1         57840           Ole e 1         57841           Ole e 1         57841           Ole e 1         57841           Ole e 1         5881           Ole e 1         5881           Ole e 1         5881           Ole e 1         5984           Ole e 1         5984           Ole e 1         5984           Ole e 1         5984           Ole e 1 <t< td=""><td>Ole e 1-like protein Ole e 1 olive pollen allergen Ole e 1 olive pollen allergen Extensin-like protein AT1g2/100/T7N9_16 Pollen ole 1 allergen </td><td>Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 AY137467 AY137467 AY137467 AY137467 AY137467 AF532763 AF53276</td><td>ARATH OleEu PICSI PICSI PICSI PICSI PICSI PICSI PICSI OleEu OleEU OleEU OleEU OleEU OleEU OleEU</td><td>57 61 61 61 61 62 62 62 62 62 62 62 62 62 63 64 64 65 65 65 65 65 65 65 65 65 65</td><td>Oie e 1_57A21           Oie e 1_57A21           Oie e 1_61A2           Oie e 1_61B3           Oie e 1_62B3           Oie e 1_62B3           Oie e 1_62B3           Oie e 1_62B3           Oie e 1_63A1           Oie e 1_63A2           Oie e 1_63A1           Oie e 1_63A2           Oie e 1_63A1           Oie e 1_63A2           Oie e 1_63A3           Oie e 1_63A1           Oie e 1_63A2           Oie e 1_63A3           Oie e 1_67B3           Oie e 1_67B3           Oie e 1_67B3           Oie e 1_68C1           Oie e 1_68C1           Oie e 1_68C3           Oie e 1_68C3</td><td>Ote e 1 olive polien altergen At2g16630 PN40024 PN40024 PN40024 At2g33790 At1g28290 proline-rich protein HyPRP1 Arabinogalactan protein proline-rich protein Structural constituent of call well PM40024 Arebinogalactan protein</td><td>AP533760 Q35LF4 D7L7M3 B9H159 A9PC40 B950J5 D7U593 A2WZR9 A3A255 B4FZ17 B4FZ16 B6TF27 B4FZ16 B6TF27 B4FZ16 B6TF27 B4FZ16 D7U593 A3RQ15 B4FZ17 D7U593 A3RQ15 B4FZ17 D7U593 A3RQ15 B4FZ17 D7U593 A3RQ15 B4FZ17 D7U593 A3RQ15 B4FZ17 D7U593 A3RQ15 B4FZ17 D7U593 A3RQ15 B4FZ17 D7U593 D7U593 A3RQ15 B4FZ17 D7U593 D7U593 A3RQ15 B4FZ17 D7U593 D7U593 A3RQ15 B4FZ17 D7U593 D7U593 A3RQ15 B4FZ17 D7U593 D7U593 A3RQ15 B4FZ17 D7U593 D7U593 D7U593 A3RQ15 B4FZ17 B4 B4 B4 B4 B4 B4 B4 B4 B4 B4</td><td>ARATT POPTT POPTT MAIZE</td></t<>	Ole e 1-like protein Ole e 1 olive pollen allergen Ole e 1 olive pollen allergen Extensin-like protein AT1g2/100/T7N9_16 Pollen ole 1 allergen 	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 AY137467 AY137467 AY137467 AY137467 AY137467 AF532763 AF53276	ARATH OleEu PICSI PICSI PICSI PICSI PICSI PICSI PICSI OleEu OleEU OleEU OleEU OleEU OleEU OleEU	57 61 61 61 61 62 62 62 62 62 62 62 62 62 63 64 64 65 65 65 65 65 65 65 65 65 65	Oie e 1_57A21           Oie e 1_57A21           Oie e 1_61A2           Oie e 1_61B3           Oie e 1_62B3           Oie e 1_62B3           Oie e 1_62B3           Oie e 1_62B3           Oie e 1_63A1           Oie e 1_63A2           Oie e 1_63A1           Oie e 1_63A2           Oie e 1_63A1           Oie e 1_63A2           Oie e 1_63A3           Oie e 1_63A1           Oie e 1_63A2           Oie e 1_63A3           Oie e 1_67B3           Oie e 1_67B3           Oie e 1_67B3           Oie e 1_68C1           Oie e 1_68C1           Oie e 1_68C3	Ote e 1 olive polien altergen At2g16630 PN40024 PN40024 PN40024 At2g33790 At1g28290 proline-rich protein HyPRP1 Arabinogalactan protein proline-rich protein Structural constituent of call well PM40024 Arebinogalactan protein	AP533760 Q35LF4 D7L7M3 B9H159 A9PC40 B950J5 D7U593 A2WZR9 A3A255 B4FZ17 B4FZ16 B6TF27 B4FZ16 B6TF27 B4FZ16 B6TF27 B4FZ16 D7U593 A3RQ15 B4FZ17 D7U593 A3RQ15 B4FZ17 D7U593 A3RQ15 B4FZ17 D7U593 A3RQ15 B4FZ17 D7U593 A3RQ15 B4FZ17 D7U593 A3RQ15 B4FZ17 D7U593 A3RQ15 B4FZ17 D7U593 D7U593 A3RQ15 B4FZ17 D7U593 D7U593 A3RQ15 B4FZ17 D7U593 D7U593 A3RQ15 B4FZ17 D7U593 D7U593 A3RQ15 B4FZ17 D7U593 D7U593 A3RQ15 B4FZ17 D7U593 D7U593 D7U593 A3RQ15 B4FZ17 B4 B4 B4 B4 B4 B4 B4 B4 B4 B4	ARATT POPTT POPTT MAIZE
52 52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1_57826           Ole e 1_57830           Ole e 1_57830           Ole e 1_57831           Ole e 1_57832           Ole e 1_57833           Ole e 1_57840           Ole e 1_57841           Ole e 1_57843           Ole e 1_57843           Ole e 1_57843           Ole e 1_57843           Ole e 1_5884           Ole e 1_5884           Ole e 1_5884           Ole e 1_5884           Ole e 1_5843           Ole e 1_5084           Ole e 1_5084           Ole e 1_5085           Ole e 1_5086           Ole e 1_6083           Ole e 1_6083           Ole e 1_6084           Ole e 1_6084 <tr< td=""><td>Ole e I-like protein Ole e I olive pollen allergen Ole e I olive pollen allergen Extensin-like protein Extensin-like protein ATI g2/10077N9_16 Pollen ole = I allergen </td><td>Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 Y12426 AF532762 AF532767 AF577 AF5777 AF7777 AF77777 AF777777 AF7777777777</td><td>ARATH OleEu</td><td>57 61 61 61 61 61 62 62 62 62 62 62 62 62 62 62</td><td>Ole e 1_57A21 Ole e 1_57A21 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67B3 Ole e 1_67A1 Ole e 1_67A1 Ole e 1_67A1 Ole e 1_67A1 Ole e 1_67A1 Ole e 1_67A2 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_68B1 Ole e 1_67B3 Ole e 1_68B1 Ole e 1_67B3 Ole e 1_68B1 Ole e 1_68B3 Ole e 1_68B1 Ole e 1_68B3 Ole e 1_68B1 Ole e 1_68B3 Ole e 1_68B3</td><td>Ote e 1 olive pollin allergen Ar2g16630 PN40024 PN40024 PN40024 proline-rich glycopentein Ar2g33790 Ar1g28200 proline-rich protein HyPRP1 Arabinogalactan protein proline-rich protein Structural constituent of call well PM40024 Arabinogalactan protein PM40024</td><td>APS33760 APS33760 APS33760 APS34760 APS45760 APS347</td><td>ARATI POPTI POPTI MAIZE</td></tr<>	Ole e I-like protein Ole e I olive pollen allergen Ole e I olive pollen allergen Extensin-like protein Extensin-like protein ATI g2/10077N9_16 Pollen ole = I allergen 	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 Y12426 AF532762 AF532767 AF577 AF5777 AF7777 AF77777 AF777777 AF7777777777	ARATH OleEu	57 61 61 61 61 61 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_57A21 Ole e 1_67A2 Ole e 1_67A2 Ole e 1_67B3 Ole e 1_67A1 Ole e 1_67A1 Ole e 1_67A1 Ole e 1_67A1 Ole e 1_67A1 Ole e 1_67A2 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_68B1 Ole e 1_67B3 Ole e 1_68B1 Ole e 1_67B3 Ole e 1_68B1 Ole e 1_68B3 Ole e 1_68B1 Ole e 1_68B3 Ole e 1_68B1 Ole e 1_68B3 Ole e 1_68B3	Ote e 1 olive pollin allergen Ar2g16630 PN40024 PN40024 PN40024 proline-rich glycopentein Ar2g33790 Ar1g28200 proline-rich protein HyPRP1 Arabinogalactan protein proline-rich protein Structural constituent of call well PM40024 Arabinogalactan protein PM40024	APS33760 APS33760 APS33760 APS34760 APS45760 APS347	ARATI POPTI POPTI MAIZE
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Oile e 1_5286           Oile e 1_5286           Oile e 1_5286           Oile e 1_57428           Oile e 1_57432           Oile e 1_57431           Oile e 1_57433           Oile e 1_57433           Oile e 1_57436           Oile e 1_57437           Oile e 1_57431           Oile e 1_57442           Oile e 1_57441           Oile e 1_57442           Oile e 1_5841           Oile e 1_5842           Oile e 1_5842           Oile e 1_5843           Oile e 1_5843           Oile e 1_5843           Oile e 1_5843           Oile e 1_5043           Oile e 1_6043           Oile e 1_6044           Oile e 1_6045           Oile e 1_6045           Oile e 1_60431           Oile e 1_60431           Oile e 1_60431 <t< td=""><td>Ole e 1-like protein Ole e 1 olive pollen allergen Ole 0 0le 0 olive pollen allergen Ole 0 0le 0 0le 0 olive pollen allergen Extensin-like protein Extensin-like protein Allergen Piłd0024 Os02g0317800 protein</td><td>Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 Y12426 AY137467 AY137467 AY137467 AF532762 AF532763</td><td>ARATH OleEu</td><td>57 61 61 61 61 62 62 62 62 62 62 62 62 62 62</td><td>Ole e 1_57A21 Ole e 1_57A21 Ole e 1_61A2 Ole e 1_61B1 Ole e 1_61B1 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_65A1 Ole e 1_65A2 Ole e 1_65A3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_68A3 Ole e 1_67C1 Ole e 1_68A3 Ole e 1_68C1 Ole e 1_68C1 Ole e 1_68C1 Ole e 1_68D3 Ole e 1_68D3 Ole e 1_68D3 Ole e 1_68D3 Ole e 1_68D3</td><td>Ote e 1 olive pollin allergen At2g16830 PN40024 PN40024 PN40024 PN40024 At2g33790 At1g28290 proline-rich protein HyPRP1 Arabinogalactan protein proline-rich protein Structural constituent of call well PN40024 Arabinogalactan prorein Tybrid proline-rich protein PP10Ine-rich protein PM40024 Arabinogalactan prorein Py50Ine-rich protein PM40024 Arabinogalactan prorein Py50Ine-rich protein PM40024 Arabinogalactan prorein Py50Ine-rich protein Py50Ine-rich protein PM50024 Arabinogalactan prorein Py50Ine-rich protein Py50Ine-rich Py5</td><td>AP533760 QIBLF4 D7L7M3 B9H159 A9PC40 B950J5 D7U593 A2WZR9 A3A255 B6TF27 B4FZ06 B4FZ06 B4FZ07 B4FZ06 B4FZ07 B4FZ07 B4FZ07 B4FZ07 B4FZ07 B4FZ07 D7U593 D7U593 D7U593 D7U593 D7U593 D7U593 D7U593 D7U593 D7U593 B4FZ07 D7U593 D7U594 D7U5</td><td>ARATT POPTT POPTT POPTT ARAL1 POPTT POPTT MAIZE</td></t<>	Ole e 1-like protein Ole e 1 olive pollen allergen Ole 0 0le 0 olive pollen allergen Ole 0 0le 0 0le 0 olive pollen allergen Extensin-like protein Extensin-like protein Allergen Piłd0024 Os02g0317800 protein	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 Y12426 AY137467 AY137467 AY137467 AF532762 AF532763	ARATH OleEu	57 61 61 61 61 62 62 62 62 62 62 62 62 62 62	Ole e 1_57A21 Ole e 1_57A21 Ole e 1_61A2 Ole e 1_61B1 Ole e 1_61B1 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_61B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_62B3 Ole e 1_65A1 Ole e 1_65A2 Ole e 1_65A3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_67B3 Ole e 1_68A3 Ole e 1_67C1 Ole e 1_68A3 Ole e 1_68C1 Ole e 1_68C1 Ole e 1_68C1 Ole e 1_68D3 Ole e 1_68D3 Ole e 1_68D3 Ole e 1_68D3 Ole e 1_68D3	Ote e 1 olive pollin allergen At2g16830 PN40024 PN40024 PN40024 PN40024 At2g33790 At1g28290 proline-rich protein HyPRP1 Arabinogalactan protein proline-rich protein Structural constituent of call well PN40024 Arabinogalactan prorein Tybrid proline-rich protein PP10Ine-rich protein PM40024 Arabinogalactan prorein Py50Ine-rich protein PM40024 Arabinogalactan prorein Py50Ine-rich protein PM40024 Arabinogalactan prorein Py50Ine-rich protein Py50Ine-rich protein PM50024 Arabinogalactan prorein Py50Ine-rich protein Py50Ine-rich Py5	AP533760 QIBLF4 D7L7M3 B9H159 A9PC40 B950J5 D7U593 A2WZR9 A3A255 B6TF27 B4FZ06 B4FZ06 B4FZ07 B4FZ06 B4FZ07 B4FZ07 B4FZ07 B4FZ07 B4FZ07 B4FZ07 D7U593 D7U593 D7U593 D7U593 D7U593 D7U593 D7U593 D7U593 D7U593 B4FZ07 D7U593 D7U594 D7U5	ARATT POPTT POPTT POPTT ARAL1 POPTT POPTT MAIZE
52 52 57 57 57 57 57 57 57 57 57 57 57 57 57	Ole e 1 _ 5286           Ole e 1 _ 5286           Ole e 1 _ 5726           Ole e 1 _ 5726           Ole e 1 _ 5726           Ole e 1 _ 5727           Ole e 1 _ 5728           Ole e 1 _ 5741           Ole e 1 _ 5741           Ole e 1 _ 5741           Ole e 1 _ 5821           Ole e 1 _ 5843           Ole e 1 _ 5943           Ole e 1 _ 5943           Ole e 1 _ 5043           Ole e 1 _ 5043	Ole e 1-like protein Ole e 1 olive pollen allergen Ole a 1 olive pollen allergen Ole a 1 olive pollen allergen Ole e 1 olive pollen allergen Ole e 1 olive pollen allergen Ole e 1 olive pollen allergen Ole a 1 alive pollen allergen Extensin-like protein AT1g2/100/T7N9_16 Pollen ole 1 allergen Ole 200317800 protein Sb07g002530	Q9FJ411 AF532753 AF532754 AY137467 AY137467 AY137467 AY137467 AY137467 AY137467 AY137467 AY137467 AY137467 AY137467 AY137467 AF532762 AF532763 AF5327763 AF5327763 AF5327763 AF5327763 AF5	ARATH OleEu PICSI PICSI PICSI PICSI POPTR POPTR POPTR POPTR OleEu SORBI ONYSI OR	57 61 61 61 62 62 62 62 62 62 62 62 62 62	Oie = 1_57A21           Oie = 1_57A21           Oie = 1_57A21           Oie = 1_61A2           Oie = 1_61B1           Oie = 1_62A2           Oie = 1_62A2           Oie = 1_62A2           Oie = 1_62A1           Oie = 1_63A1           Oie = 1_63A1           Oie = 1_63A1           Oie = 1_63A2           Oie = 1_63A2           Oie = 1_63A2           Oie = 1_63A2           Oie = 1_63A1           Oie = 1_63A2           Oie = 1_67A2           Oie = 1_63A3           Oie = 1_63A2           Oie = 1_63A3           Oie = 1_63A2           Oie = 1_63A2           Oie = 1_63A3           Oie = 1_63B	Ote e 1 olive polien attergen At2g16630 PN40024 PN40024 At2g33790 At1g28200 proline-rich grotein At2g33790 At1g28200 proline-rich protein ByPRP1 Arsbinogalactan protein proline-rich protein Brotein PM40024 Arsbinogalactan protein hybrid proline-rich protein PM40024 Arsbinogalactan prot	APS33760 Q38LF4 D7L7M3 B9H158 A9PG40 B950J5 D7U593 A2WZR9 A3WZR9 B4FZ06 B6TR12 B4FZ06 B6TR12 B4FZ07 B4FZ06 D7U593 A2WZR9 D7U593 A2WZR9 D7U593 A2WZR9 D7U593 A3W30 D7U593 A3W30 D7U593 A3W30 D7U593 A3W30 D7U593 A3W30 D7U593 D7U593 A3W30 D7U593 D7U593 D7U593 D7U627 D7LGE7 D7LGE7 D7LGE7 D7LGE7 D7LGE7 D7LGE7 B9FA22 G4FLD2 G4FLD2 B9FA32 B9FA55 B9FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7FA52 B7	ARATI ARALI POPTR RICCO VITVI ORYSI ORYSI ORYSI MAIZE MAI MAI MAI MAI MAI MAI MAI MAI MAI MAI

Table 1. (continued). The Ole e 1 protein superfamily: new and unified nomenclature.

74	Ois #1 7101	Pistil extensio-like ocotein	040385	NICAL	80	Ois #1 8042		022258	ABATH
74	Ole a 1 71 A3	Redil concilie astensin like prot	007247	DEVID	24	Ola a 1 Bi Ai		Detres	CE1 841
74	Old a 1 74B1	Distil extends like protein	1040540	TOBAC	91	Dia a 1 81.67		DOTE 40	251 351
1	Olean_men	Pisal extension use protein	640349	TUBAL		OW & 1_BIAZ		Detrea	SELML
1	Ofe a 1_/181	Pistil extensio like protein	040552	TOBAC	18	Ole e 1_8181		Datce/	GELME
2	Ole e 1_72A1	120 kDa style glycoprotein	049986	NICAL	87	Ole e 1_82A1	and the second se	DSTCFO	SELML
7	Ole e 1_72AZ	120 kDa pistil extensin-like prot.	049/28	NicLa	83	Die of BJA1	Pollen ole e 1 allergen	D7LYX8	ARALY
2	Oiz e 1 72A3	120 kDa pistil astensin-like prot.	Q49129	NicLa	83	Oin e 1 83A2	A15g05500	QSFFG5	ARATH
77	Ole n 1 77A4	120 kDa pistil extensio-like prot.	04977	NicLa	83	Ole n 1 8381		BOHHUI	POPTS
12	Olu n 1 7745	120 kDa pastili satensin ilke prot	04912	Nicia	83	Ole a 1 8382		BIHSK7	POPTE
77	Dines 2045	1 30 kDs sight antensis like and	Cateron a	AUCTIN	0.1	04 61 0302		000000	Picco
4	Die o 1_/ ZMB	120 KDa pistil extensioninke prot.	1043133	NICPL	4.5	010 0 1_8383		BRAMMO	Micco
12	OH at TZAT	120 KDa pisili externstruke prof.	Q49134	TOBAC	83	Ol0 6 1 8384	PN40024	D/14L1	VITVI
73	Ole o 1_73A1	120 kDx pistli extensin-like prot.	G49130	NicLa	83	Cle e 1_8385		A5C9V2	VITVI
74	Ois e 1_74A1	Pollen ale e 1 aliergen	D7MA28	ARALY	84	Ola e 1_84A1	•	AZWL03	ORYSI
74	Ola #1_74A2	At4002270	Q81417	ARATH	84	Oin e 1 84A2		GELIN2	ORY51
75	Ole n 1 75A1	in Second Second Second	CST5T7	SOYBN	84	Ole a 1 BIA3	-	AZWLD1	ORYSI
75	CH4 4 1 7542	Drought millstance protein	E04235	SOVEN	8.6	Cite a 1 PAA4		ROFTUZ	ORVEL
76	Ole 4 1 25 63	areaters is an armine proverty	COTADE	00400		China & DAAK	D3100400 17	OD/P43	ORVET.
12	Cite e 1_Taka		001423	agran		010 0 1 84/65	B1189A02.72	COVR32	ORTOJ
13	010 0 1_7581	-	Billib3	POPIE	94	CH0 0 1_84A0		AZVYLOD	014751
75	Ol# e 1_7582		B99P2	POPTR	84	Ole e 1_84A7		AZWL05	ORYSI
75	Old 81_75C1	15 Sec.	B9MX40	POPTR	84	Ole s 1 84An		AZWLOS	ORVEI
75	Ole #1_75C2		B9P957	POPTR	H4	Ole a 1_BIAS		GELJM3	ORYSJ
75	Olet e 1 75D1		B9GSD2	POPTR	84	Ole e 1 S4A10		AZWL07	OSYSI
76	Ole a 1 76A1	1	BSSAVS	RICCO	84	Oisel StAll	-1 -1	QELIME	ORYSJ
76	Ote a 1 7691	Structural constituent cell well	BUSAVA	RICCO	8.4	Ofe # 1 \$1417		A7WI 84	12780
72	Dia 41 2241		Bacent	PORTE	24	Ole of Stats		00/101	OPVE!
11	Cient TTAT	Annual second discount and such	836361	PUPPIN		CIEDI GANIA		A A TOMO	ORYS
11	CHE T_TTAL	orrouture constituent cen wall	BINGH YS	ALCO		ALANG LINER		RACPES	UKTAJ
11	Ole 01_7761	P#40024	070265	VIIVI	84	Ole # 1_34A15	B7185A03.24	QSVR30	ORYSJ
11	Ole e 1_7782		A58127	VITVI	84	Oin e 1_8481	-	AZWL02	ORVSI
77	Oh s1_77C1	PN40024	D7U2C3	VITVI	84	Oin #1_B4C1		A2WL12	ORYSI
77	Ole a.1_77C2		ASBIZS	VITVI	84	Ote # 1_84C2	1999	QRLJM5	ORYSJ
17	Ole e 1_7701	Polten ole e 1 allergen	D7LGP2	ARALY	84	Qfe e 1_84C3		BRADES	ORYSI
77	Ofe e 1 7707	A12047540	072257	ARATH	R.4	Die o 1 Báca	-	AZZPL3	DRYSJ
70	Ole a 1 7241	The state of the s	456176	VIDA		Ole at BLCS	B1189409 43	O5VP12	OPVEL
78	Ole e 1 70A	Baldonta	DZINGA	MTM		Diant dies	Gring Pulater	Atten er	OFVE
0	CHINE TRAL	P140024	070204	40.00	84	CIDENT BACK		M2WL11	Onvar
e 0.	CON 81_78A1		DIKQ21	ARALY	84	010 84 8407		Calama	URISJ
79	Ole s 1_79AZ		D/KQ24	ARALY	- 84	Dis # 1_84D1	B1189A09.38	Q5VR13	ORYSJ
79	ON # 1_79A3	Proline-rich protein 1	Q9FZ35	ARATH	84	Olen 1_84E1		BRETOR	ORYSJ
79	Die e 1_79A4	Proline-rich protein 1	Q9M7P1	ARATH	- 64	Ola # 1_84F1	and the second second	AZZPL6	ORYSJ
79	Ole # 1_79A5	Proline-cich protein	COLZJ7	ARATH	84	Ofe e 1 BIF2	B1189A09.45	Q5VR17	ORYSJ
79	Ofe u 1 79A6	Proline-rich protein 3	Q987149	ARATH	8.4	Ole e 1 84G1	· · · · ·	A2WL13	ORVSI
75	Oin # 1 76A7	and the second s	D71 786	ARALY	84	Oin e 1 54G2	Sh03o005060	C5XP49	SORBI
80	Ole a 1 ROA1		071 680	ARALY	26	Olp a 1 RSA1		DESHHE	SELMI
M 74	Ole p 1 8581		087553	SELME	97	Ote # 1 9761	Sh020042740	C5X5.0	SORB
85	Ole v 1_85B1		D87553	SELML	97	Ote e 1 97A3	\$b02g042740	C5X5J0	SORBI
86	Ole e 1_8581 Ole e 1_85A1	-	D875S3 D85HH9 D875S4	SELML	97 98	Ole e 1_97A3 Ole e 1_97A3 Ole e 1_98A1	Sb02g042740	C5X5J0 AZXGJ7	ORYSI ORYSI
85 86 87	Ole o 1_8581 Ole o 1_86A1 Ole e 1_87A1	•	D875S3 D85HH9 D875S4	SELML SELML SELML	97 98 98	Ote e 1_97A3 Ote e 1_97A3 Ote e 1_98A1 Ote e 1_98A2	\$602g942740 - -	C5X5J0 AZXGJ7 Q10LN4	SORBI ORYSI ORYSJ
85 86 87 88	Ole o 1_85B1 Ole o 1_85A1 Ole o 1_87A1 Ole o 1_88A1		D875S3 D85HH9 D875S4 D8R4E3	SELML SELML SELML SELML	97 98 98 98	Ole e 1_97A1 Ole e 1_97A1 Ole e 1_98A2 Ole e 1_98A2 Ole e 1_98B1	\$b02g042740 - - -	C5X5J0 AZXGJ7 Q10LN4 A2XGJ8	SORBI ORYSI ORYSJ ORYSI
85 86 87 88 88	Ole v 1_85B1 Ole e 1_85A1 Ole e 1_87A1 Ole e 1_88A1 Ole e 1_88A2		D87583 D85HH9 O87584 D8R4E3 D8RKB7	SELML SELML SELML SELML SELML	97 98 98 98 98	Ole e 1_97A1 Ole e 1_98A1 Ole e 1_98A2 Ole e 1_98B1 Ole e 1_98B2	Sb02g042740 - - - Os03g0342100	C5X5J0 A2XGJ7 Q10LN4 A2XGJ8 Q10LN2	ORYSI ORYSI ORYSI ORYSI ORYSJ
85 86 87 88 88 88	Ole v 1_8581 Ole e 1_85A1 Ole e 1_85A1 Ole e 1_88A1 Ole e 1_88A2 Ole e 1_88A2	+ + Polien ole e 1 allurgen	D8T5S3 D8SHH9 D8T564 D8R4E3 D8RKB7 D7L8E4	SELML SELML SELML SELML SELML ARALY	97 98 98 98 98 38 38 58	Ole e 1_97A1 Ole e 1_98A1 Ole e 1_98A2 Ole e 1_98B2 Ole e 1_98B2 Ole e 1_98B2	\$b02g042740 	C5X5J0 A2KGJ7 Q10LN4 A2XGJ8 Q10LN2 C5X0Q2	SORBI ORYSI ORYSJ ORYSJ ORYSJ SORBI
85 86 87 88 88 88 89 89	Ole v 1_8581 Ole e 1_85A1 Ole e 1_85A1 Ole e 1_83A1 Ole e 1_83A1 Ole e 1_83A1 Ole e 1_83A1 Ole e 1_83A1	Polien ole e 1 allergen	D875S3 D85MH9 D875S4 D8R4E3 D8RKB7 D7L8E4 Q3EBA2	SELML SELML SELML SELML ARALY ARATH	97 98 98 98 98 98 98 98 99 99	Ote e 1_97A3 Ote e 1_97A3 Ote e 1_98A2 Ote e 1_98A2 Ote e 1_98B3 Ote e 1_98B2 Ote e 1_98C1 Ote e 1_99A1	\$502g042740 	C5X5J8 A2XGJ7 Q10LN4 A2XGJ8 Q10LN2 C5X8Q2 B6UHT3	SORBI ORYSI ORYSI ORYSI ORYSI SORBI MAIZE
85 86 87 88 88 88 89 89 89	Ole v 1_85B1 Ole e 1_85A1 Ole e 1_85A1 Ole e 1_83A1 Ole e 1_83A2 Ole e 1_83A2 Ole e 1_83B1	- - Fallen ole e 1 allergen	D875S3 D85MH9 D875S4 D8R4E3 D8RKB7 D7L8E4 Q3EBA2 B9MTKS	SELML SELML SELML SELML ARALY ARATH POPTR	97 98 98 98 98 98 98 98 98 95 100	Ote e 1_97A3 Ote e 1_98A1 Ote e 1_98A2 Ote e 1_98B3 Ote e 1_98B2 Ote e 1_98B2 Ote e 1_98B2 Ote e 1_98A1 Ote e 1_99A1	\$602g042740 	C5X5J8 A2XGJ7 Q10LN4 A2XGJ8 Q10LN2 C5X0Q2 B6UHT3 A2WUN2	SORBI ORYSI ORYSI ORYSI ORYSI SORBI MAIZE ORYSI
85 86 88 88 88 89 89 89 89	Ole v 1 8581 Ole e 1 85A1 Ole e 1 85A1 Ole e 1 85A1 Ole e 1 85A2 Ole e 1 85A1 Ole e 1 85A1 Ole e 1 85B1 Ole e 1 85B1	+ + Polien ole e 1 allergen	D87583 D85HH9 D87584 D8R463 D8RK67 D7L864 Q3EBA2 B9MTK8 B9S0B7	SELML SELML SELML SELML ARALY ARATH POPTR RICCO	97 98 98 98 98 98 98 98 99 100	Ote e1_97A3 Ote e1_97A3 Ote e1_98A1 Ote e1_98A2 Ote e1_98A2 Ote e1_98A2 Ote e1_98A1 Ote e1_95A1 Ote e1_100A1 Ote e1_100A2	\$b02g042740 	C5X5J8 A2XGJ7 Q10LN4 A2XGJ8 Q10LN2 C5X0Q2 B5UHT3 A2WUN2 Q85158	SORBI ORYSI ORYSI ORYSI ORYSI ORYSI MAIZE ORYSI ORYSI
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85 86 87 88 88 89 89 89 89 89 89 89	Ole v 1 8581 Ole e 1 85A1 Ole e 1 85A1 Ole e 1 83A1 Ole e 1 83A1 Ole e 1 83A1 Ole e 1 83A2 Ole e 1 83A2 Ole e 1 83A2 Ole e 1 83B2 Ole e 1 83B2	Fallen ole e 1 allergen	D8T5S3 D85HH9 D8T5S4 D8R4E3 D8RKB7 D7L8E4 Q3EBA2 B9MTK8 B9S0B7 C6T3U0 D7TW8	SELML SELML SELML SELML SELML ARALY ARATH POPTR RICCO SOYBN VITVI	97 98 98 98 98 98 98 98 99 100 100 100	Ole e 1 97A3 Ole e 1 97A3 Ole e 1 98A2 Ole e 1 98A3 Ole e 1 99A1 Ole e 1 100A1 Ole e 1 100A3 Ole e 1 100A3	\$602g042740 05803g0342100 \$601g035830 0501g0725900 \$603g0725900	C5X5J0 A2X0J7 Q10LN4 A2X0J8 Q10LN2 C5X0Q2 B6UHT3 A2WUN2 Q80158 A22XF1 C5XIF5	SOREI ORYSI ORYSI ORYSI ORYSI SOREI ORYSI ORYSI ORYSI SOREI
15 16 17 18 19 19 19 19 19	Ole v 1 8581 Ole e 1 85A1 Ole e 1 85A1 Ole e 1 87A1 Ole e 1 83A2 Ole e 1 83A2 Ole e 1 83A2 Ole e 1 89B1 Ole e 1 89B1 Ole e 1 89B1 Ole e 1 89B1 Ole e 1 89B1	Pullen ole e 1 allergan	D8T5S3 D85HH9 D8T5S4 D8R4E3 D8R4E3 D8RKB7 D7LVE4 Q3EBA2 B9MTK8 B950B7 C6T3U0 D7TW8 D7TW8	SELML SELML SELML SELML SELML SELML ARALY ARATH POPTR RICCO SOYBN VITVI	97 98 98 98 98 98 98 98 98 98 100 100 100 100	Ote e 1_97A3 Ote e 1_97A3 Ote e 1_98A1 Ote e 1_98A2 Ote e 1_98B2 Ote e 1_98B2 Ote e 1_98C1 Ote e 1_98C1 Ote e 1_98C1 Ote e 1_100A2 Ote e 1_100A2 Ote e 1_100A3 Ote e 1_100A3	\$b02g042740 Os03g0342100 Sb01g035830 Os01g0725900 Sb03g03350 Sb03g033350	C5X5J0 AZR0J7 Q10LN4 A2X6J8 Q10LN2 C5X0Q2 B6UHT3 AZWUN2 Q85158 AZZXF1 C5XIF5 C5XIF5	SORBI ORYSI ORYSI ORYSI ORYSI SORBI MAIZE ORYSI ORYSI ORYSI SORBI SORBI
15 16 17 18 19 19 19 19 10	Ole v 1_8581 Ole e 1_85A1 Ole e 1_85A1 Ole e 1_87A1 Ole e 1_83A1 Ole e 1_83A1 Ole e 1_83A1 Ole e 1_83B1 Ole e 1_83B1 Ole e 1_83B1 Ole e 1_83C1 Ole e 1_90A2 Ole e 1_90A2	Polien ole e 1 allurgen Polien ole e 1 allurgen PN40024 PN40024	D8T5S3 D85HH9 D87S84 D8R4E3 D8R4E3 D7L8E4 D7L8E4 D7L8E4 D7L8E4 B9MTK8 B9S0B7 C6T3U0 D7TKV8 D7TKV8 D7TKV8	SELML SELML SELML SELML SELML ARALY ARALY ARATH POPTR RICCO SOYBN VITVI VITVI VITVI	97 98 98 98 98 98 98 99 100 100 100 100 100	Ote e 1_97A3 Ote e 1_97A3 Ote e 1_98A1 Ote e 1_98A2 Ote e 1_98B2 Ote e 1_98B2 Ote e 1_98B2 Ote e 1_98A1 Ote e 1_99A1 Ote e 1_100A3 Ote e 1_100A3 Ote e 1_100A3 Ote e 1_100A4 Ote e 1_100A4	\$502g042740 	C5X5J0 AZKGJ7 Q10LN4 A2KGJ8 Q10LN2 C5X0Q2 B6UHT3 A2WUN2 Q85158 A2ZXF1 C5XIF5 C5XIF5 C5XIF5	SOREI ORYSI ORYSI ORYSI ORYSJ SOREI ORYSJ ORYSJ ORYSJ SOREI SOREI SOREI
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15 16 17 18 19 19 19 19 19 19 19 10 10 11 11	Ole e 1, 8581 Ole e 1, 87A1 Ole e 1, 88A2 Ole e 1, 98A2 Ole e 1, 90A1 Ole e 1, 91A2 Ole e 1, 91A1 Ole e 1, 91A2 Ole e 1, 91A2	Pallen ole e 1 allergen Philen ole e 1 allergen Philo24 Philo24 Os10g0546100 Sb01g030090	D8T5S2 D85H49 D875S4 D8RK67 D7L8E4 D8RK67 D7L8E4 D8RK67 D7L8E4 B9MTK8 B9MTK8 B9MTK8 B9MTK8 B9MTK8 B9MTK8 D7T1X7 AZZ9X7 Q5AV21 C5WTH1 D7LH66	SELML SELML SELML SELML SELML ARALY ARALY VITVI VITVI VITVI ORYSJ SORBI ARALY	97 98 98 98 98 98 98 98 98 98 98 99 100 100 100 100 100 100 100	Ole e 1 97A3 Ole e 1 98A1 Ole e 1 98A2 Ole e 1 98A2 Ole e 1 98A2 Ole e 1 98B2 Ole e 1 98B2 Ole e 1 98C1 Ole e 1 98C1 Ole e 1 100A2 Ole e 1 100A2 Ole e 1 100A2 Ole e 1 100C2 Ole e 1 100C2 Ole e 1 100C3	Sb02g042740 Os03g0342100 Sb01g035830 Os01g0725900 Sb03g033360 QJ1131_E09.17 Ov05g0531400 protein	C5X5J0 A2XGJ7 Q10LN4 A2XGJ8 Q10LN2 C5X0Q2 B5UH73 A2WUN2 Q85158 A2XF1 C5XIF5 C5XIF5 C5XIF5 Q75K53 B8FH39 A2Y676 Q0DGH6	SORBI ORYSJ ORYSJ ORYSJ ORYSJ SORBJ ORYSJ ORYSJ ORYSJ ORYSJ
85 86 87 88 88 89 89 89 89 89 89 89 90 90 91 91 91 91 91 91	Ole e 1 8581 Ole e 1 87A1 Ole e 1 88A1 Ole e 1 89A1 Ole e 1 89A1 Ole e 1 89B1 Ole e 1 89B2 Ole e 1 89B2 Ole e 1 89B2 Ole e 1 90A2 Ole e 1 91A1 Ole e 1 91A2 Ole e 1 91A2 Ole e 1 92A2	Pallen ole e 1 allengen Philippia Philippia Philippia Ostilug0546100 Sborg050090 Al2g41400	D8T5S3 D85MH9 D875S4 D8R4E3 D8RK87 D7L8E4 Q3EBA2 B9MTK8 B9MTK8 B9MTK8 B9MTK8 B9MTK8 D7T1K6 D7T1K6 D7T1K6 Q6D8F8	SELML SELML SELML SELML SELML SELML SELML ARATH POPTR RICCO SOYBN VITVI VITVI VITVI VITVI VITVI VITVI VITVI ORYSJ SORBI ARALY ARATH	97 98 98 98 98 98 95 95 100 100 100 100 100 100 100 100 100	Ote e 1 97A3 Ote e 1 97A3 Ote e 1 98A1 Ote e 1 98A2 Ote e 1 98A2 Ote e 1 98A2 Ote e 1 98A2 Ote e 1 98C1 Ote e 1 100A3 Ote e 1 100A3 Ote e 1 100C1 Ote e 1 100C2 Ote e 1 100C4	Sb02g042740 Os03g0342100 Sb01g035830 Os01g0725900 Sb03g03350 OJ1131_E09.17 Os05g0531400 protein Sb03g026510	C5X5J0 A2XGJ7 Q10LN4 A2XGJ8 Q10LN2 C5X002 B5UHT3 A2WUN2 Q85158 A22XF1 C5XIF5 C5XIF5 C5XIF5 C5XIF5 Q75K53 B3FH39 A22Y6T6 Q0DCH6 C5YUF6	SORBI ORYSI ORYSI ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ SORBI
85 86 87 88 88 89 89 89 89 89 89 89 90 00 00 00 00 00 00 91 91 91 91 91 92 92 92	Ole v 1_8581 Ole v 1_85A1 Ole v 1_85A1 Ole v 1_83A1 Ole v 1_83A1 Ole v 1_83A1 Ole v 1_83A1 Ole v 1_83A1 Ole v 1_83B1 Ole v 1_83B1 Ole v 1_83C1 Ole v 1_90A1 Ole v 1_91A1 Ole v 1_91A2 Ole v 1_91A2 Ole v 1_92A2 Ole v 1_92A3	Pattern ofe e 1 allurgen Pattern ofe e 1 allurgen PN40024 PN40024 Ox10g0546100 Sb01g030020 At2g41400 RAFL22-834M12	D8T5S3 D85MH9 D875S4 D8R4E3 D8RK87 D7L8E4 G3EBA2 B9MTK8 B9MTK8 B9MTK8 B9MTK8 B9MTK8 B9MTK8 B9MTK8 B9MTK8 B9MTK8 D7T1W6 D7	SELML SELML SELML SELML SELML SELML ARATH POPTR RICCO SOVBN VITV VITV VITV VITV ORYSJ SORBI ARATH ARATH	97 98 98 98 98 98 98 98 99 100 100 100 100 100 100 100 100 100	Ote e 1_97A3 Ote e 1_97A3 Ote e 1_98A1 Ote e 1_98A2 Ote e 1_98A2 Ote e 1_98B2 Ote e 1_98B2 Ote e 1_98B2 Ote e 1_99A1 Ote e 1_100A3 Ote e 1_100A3 Ote e 1_100A3 Ote e 1_100A3 Ote e 1_100C3 Ote e 1_100C3 Ote e 1_100C4 Ote e 1_100C4	Sb02g042740 Os03g0342100 Sb01g035830 Os01g0725900 Sb03g033360 OJ1131_E09,17 Os05g0531400 protein Sb03g026510 Arabinogalactan protein	C5X5J0 AZRGJ7 010LN4 A2XGJ8 010LN2 C5X042 B5UH73 A2W0N2 Q85158 A2ZKF1 C5XIF5 C5XIF5 C5XIF5 Q75K53 B8FH39 A2Y6T6 Q0DGH6 C5YUF6 B6SLV3	SORBI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI
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85 86 87 88 88 88 89 89 89 89 89 99 99 99 1 99 1 99 1 99 1 99 1 99 2 2 2 2	Ole e 1 8581 Ole e 1 87A1 Ole e 1 88A1 Ole e 1 89A1 Ole e 1 89A1 Ole e 1 89A1 Ole e 1 89B1 Ole e 1 89B2 Ole e 1 89B2 Ole e 1 89B2 Ole e 1 99A1 Ole e 1 99A1 Ole e 1 91A1 Ole e 1 91A2 Ole e 1 92A1 Ole e 1 92B1	Polien ole e 1 allergen Philion ole e 1 allergen Philion24 Philion24 Ost10g0546100 Sb0rg030090 Ai2g41400 RAFL22-813-8112 Ai2g41400 Ai2g41400 Ai2g41400	D8T5S3 D85MH9 D9T5S4 D8R4E3 D8R4E3 D8R4E3 D8R4E3 D8R4E3 D8R4E3 B9MTK8 B9MTK8 B9MTK8 B9MTK8 B9MTK8 B9MTK8 B9MTK8 D7T1kt C6T3U8 D7T1kt C7L466 Q6D8F8 Q672J7 Q92VC6 Q92VC4	SELML SELML SELML SELML SELML ARATH ARATH POFTR RICCO SOYBN VITVI VITVI VITVI VITVI VITVI VITVI VITVI VITVI VITVI VITVI ARATH ARATH ARATH	97 98 98 98 98 98 95 95 100 100 100 100 100 100 100 100 100 10	Ole e 1 97A3 Ole e 1 97A3 Ole e 1 98A1 Ole e 1 98A2 Ole e 1 98C1 Ole e 1 98C1 Ole e 1 98C1 Ole e 1 100A3 Ole e 1 100A3 Ole e 1 100A3 Ole e 1 100C1 Ole e 1 100C3 Ole e 1 100C4 Ole e 1 100C4	Sb02g042740 Ost03g0342100 Sb01g0725900 Sb01g0725900 Sb03g03350 OJ1131_E09.17 Ovt05g0531400 protein Sb03g026510 Arabinogalactan pretein Ovt05g0531200 protein	C5X5J0 A2XGJ7 Q10LN4 A2XGJ8 Q10LN2 C5X0Q2 C5X0Q2 C5X0Q2 Q85158 A2XVDN2 Q85158 C5X1F5 C5X1F5 C5X1F5 Q75K53 B3FH33 A2V6T6 Q75K53 B3FH33 A2V6T6 B65LV3 A2V6T4	SORBI ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ ORYSJ
85 86 87 88 88 88 89 99 88 88 88 88 99 000 000 0	Ole e 1 8581 Ole e 1 85A1 Ole e 1 87A1 Ole e 1 87A1 Ole e 1 87A1 Ole e 1 87A1 Ole e 1 83A1 Ole e 1 89A2 Ole e 1 89B2 Ole e 1 89B2 Ole e 1 89B2 Ole e 1 89C1 Ole e 1 90A1 Ole e 1 90A1 Ole e 1 91A2 Ole e 1 91A2 Ole e 1 92A3 Ole e 1 92A1 Ole e 1 92A3 Ole e 1 92A1 Ole e 1 92A3	Pattern ole e 1 allurgen Pattern ole e 1 allurgen PM40024 PM40024 Ox10.g0546100 Sb01g030020 At2g41400 RAFL22-834M12 At2g41400 At2g41390 At2g41390 At5g05720	D8T5S3 D85MH9 D875S4 D8R4E3 D8R4E3 D8R4E3 D8R4E3 D7L8E4 D7L8E4 D7L8E4 B9MTK8 B9TK8 B	SELML SELML SELML SELML SELML ARALH POPTR RICCO SOVBN VITV VITV VITV VITV ORYSJ SORBI ARALY ARATH ARATH ARATH ARATH	97 98 98 98 98 98 98 99 100 100 100 100 100 100 100 100 100	Ote e 1_97A3 Ote e 1_97A3 Ote e 1_98A1 Ote e 1_98A2 Ote e 1_98A2 Ote e 1_98B2 Ote e 1_98B2 Ote e 1_98B2 Ote e 1_99A1 Ote e 1_99A1 Ote e 1_99A1 Ote e 1_99A1 Ote e 1_99A3 Ote e 1_99A3 Ote e 1_90A2 Ote e 1_90A2 Ote e 1_90A3 Ote e 1_90A3	Sb02g042740 Os03g0342100 Sb01g035830 Os01g0725900 Sb03g033360 OJ1131_E09,17 Os05g0531400 protein Sb03g026510 Arabinogalactar protein Pist(I.spactfic extensin-like	C5X5J0 AZRGJ7 010LN4 A2XGJ8 010LN2 C5X042 B5UH73 A2W0N2 Q85158 A2ZKF1 C5XIF5 C5XIF5 C5XIF5 C5XIF5 Q75K53 B8FH39 A2Y6T6 D0DGH6 C5YUF6 B6SLV3 A2Y6T4 Q75K55 B6SLV3	SORBI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI ORYSI
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25 866 87 888 889 899 899 899 899 899 899 899	Ole e 1, 8581 Ole e 1, 87A1 Ole e 1, 88A1 Ole e 1, 89A1 Ole e 1, 89A1 Ole e 1, 89B1 Ole e 1, 90A1 Ole e 1, 91A1 Ole e 1, 91A1 Ole e 1, 92A1 Ole e 1, 92A1	Polien ole e 1 allergen Philion24 Philion24 Philion24 Ost10g0546100 Sb07g030090 Ai2g41400 RAFL22-813-M12 Ai2g41400 Ai2g41400 Ai2g41400 Ai2g41400 Ai2g41400 Ai2g41500 Ai2g41500	D8T5S3 D85MH9 D9T5S4 D8R4E3 D8R4E3 D8RK87 D7L8E4 D32BA2 B9MTK8 B350B7 C6T3U8 D7T1K1 C6T3U8 D7T1K1 C7L466 D7T1K1 D7L466 Q6D8F8 Q672J7 Q92VC6 Q9FF72 D7KW90 Q8QVV6	SELML SELML SELML SELML SELML ARATH ARATH RICCO SOYBN VITVI	97 98 98 98 98 98 95 95 100 100 100 100 100 100 100 100 100 10	Ole e 1 97A3 Ole e 1 98A1 Ole e 1 98A2 Ole e 1 98C1 Ole e 1 98C1 Ole e 1 98C1 Ole e 1 98C1 Ole e 1 100A2 Ole e 1 100A3 Ole e 1 100A3 Ole e 1 100C1 Ole e 1 100C1 Ole e 1 100C2 Ole e 1 100C3 Ole e 1 100C4 Ole e 1 100C4	Sb02g042740 Ost03g0342100 Sb01g035830 Ost01g0725900 Sb03g03356 OJ1131_E09.17 Ost05g0531400 protein Sb03g026510 Arabinogalactan protein Pistli-spectfic extensin-like protein	C5X5J0 A2XGJ7 Q10LN4 A2XGJ8 Q10LN2 C5X0Q2 B5UH73 A2WUN2 Q85158 A22XF1 C5XIF5 C5XIF5 C5XIF5 Q75X53 B3FH33 A2Y675 B65LV3 A2Y674 B65LV3 A2Y674 B65LV3 A2Y674 B65LV3 A2Y674 B65LV3 A2Y674 B65LV3 A2Y674 B65LV3 A2Y674 B65LV3 A2Y674 B65LV3 A2Y674 B65LV3 A2Y674 B65LV3 A2Y674 B65LV3 A2Y674 B65LV3 A2Y674 B65LV3 A2Y674 B7555 B6UHM8	SORBI ORYSI
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25 866 887 888 889 899 899 899 899 900 900 991 991 991 991 991 991 991 9	Ole e 1 8581 Ole e 1 87A1 Ole e 1 88A1 Ole e 1 89A1 Ole e 1 89A1 Ole e 1 89B1 Ole e 1 89B2 Ole e 1 89B2 Ole e 1 89B2 Ole e 1 89B2 Ole e 1 90A2 Ole e 1 91A1 Ole e 1 91A2 Ole e 1 91A2 Ole e 1 92A2 Ole e 1 92A1 Ole e 1 92A1 Ole e 1 92A1 Ole e 1 92A1 Ole e 1 92A2 Ole e 1 92A1 Ole e 1 92A1 Ole e 1 92A1 Ole e 1 92A2 Ole e 1 93A1 Ole e 1 93A1	Polien ole e 1 allurgen Philion ole e 1 allurgen Philion24 Philion24 Philion24 Ost10g0546100 Sb0rg030090 Ai2g41400 RAFL22-813-M12 Ai2g41400 Ai2g41400 Ai2g41400 Ai2g41400 Ai2g41400 Ai2g41400 Ai2g41400 Ai2g41400 Ai2g416660 MGLf	D8T5S3 D85MH9 D875S4 D8R4E3 D8RKB7 D7L3E4 D8RKB7 D7L3E4 B9MTK8 B350B7 C6T3U8 D7T1K1 C5T3U8 D7T1K1 C7L466 D7T1K1 D7L466 Q6DBF8 Q672J7 Q92VC4 Q9FF72 D7KW90 Q8QY78 Q9LUR8 D7L657 D7L657 D7L659	SELML SELML SELML SELML SELML ARATH ARATH POFTR RICCO SOYBN VITVI	97 98 98 98 98 98 98 95 100 100 100 100 100 100 100 100 100 10	Ole e 1 97A3 Ole e 1 97A3 Ole e 1 98A1 Ole e 1 98A2 Ole e 1 98C1 Ole e 1 98C1 Ole e 1 98C1 Ole e 1 98C1 Ole e 1 100A3 Ole e 1 100A3 Ole e 1 100A3 Ole e 1 100A3 Ole e 1 100C1 Ole e 1 100C1 Ole e 1 100C3 Ole e 1 100C3 Ole e 1 100C4 Ole e 1 100C4	Sb02g042740 Ost03g0342100 Sb01g0725900 Ost01g0725900 Sb03g03356 OJ1131_E09.17 Or405g0531400 protein Sb03g026510 Arabinogalactan protein Pistli-spectfic extensin-like protein Sb09g026500 Ost01g0226100 protein	C5X5J0 A2XGJ7 Q10LN4 A2XGJ8 Q10LN2 C5X0Q2 B5UHT3 A2WUN2 Q85158 A2XF1 C5XIF5 C5XIF5 C5XIF5 Q75K53 B3FH39 A2Y6T6 Q75K53 B3FH39 A2Y6T6 B65LV3 A2Y6T6 B75L5 B60HM8 B4F6H8 C521H9 A2W0N3 A2Y6T6 B65LV3 A2Y6T6 C57LF6 B65LV3 A2Y6T6 B75L5 B60HM8 B45C7 B75L5 B60HM8 B45C7 B75L5 B60HM8 B45C7 B75L5 B60HM8 B45C7 B75L5 B7	SORBI ORYSJ
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Table 1. (continued). The Ole e 1 protein superfamily: new and unified nomenclature.

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#### 3.2 Phylogenetic analysis of the extended Ole e 1 protein families

A member of each retrieved full-length Ole e 1 sequences family was aligned to determine phylogenetic relationships within the Ole e 1 extended family. A phylogenetic tree of the Ole e 1 extended sequences is depicted in Figure 1.



Fig. 1. Phylogenetic analysis of plant Ole e 1 proteins. Neighbour-Joining (NJ) method was used to perform a phylogenetic analysis of Ole e 1 proteins from 109 families. One representative sequence of each family was used, based in its higher consensus ability. Plant species analyzed included *Arabidopsis*, poplar, rice, spikemoss, tobacco, maize, potato, grape, *Sorghum*, kidney bean, barrel medic, *Pinus*, poinsettia, perennial ryegrass, soybean, white birch, ash, *Platanus*, *Physcomitrella*, cotton, subterranean clover, Persian tobacco and castor bean.

The phylogenetic tree shows that the 109 Ole e 1 extended families, although highly divergent, are split into two clades. The smaller clade was integrated by a few species like *Selaginella moellendorffii*, *Arabidopsis* and maize among others. The second clade included the majority of the Ole e 1 family proteins, clustering together almost all the biological functions (Figure 1). Numerous branches aroused from this clade.

#### 3.3 Ole e 1 protein superfamilies: Structural and conformational variability

The crystallographic structural coordinates of relatively few proteins of the Ole e 1 family have been deposited in the Protein Database (PDB) up to date. To our knowledge, detailed comparative studies of the structural and conformational features of members of the Ole e 1

extended protein families have not been performed in higher plants. Using computational modelling analysis, we have determined and modelled the molecular-structural features of selected members of the Ole e 1 extended families. A first overview of the generated models (Figure 2) indicated a relatively high level of similitude.



Fig. 2. Three-dimensional structure analysis of selected members of Ole e 1 family proteins. The model proteins are depicted as cartoon diagrams. The secondary elements of the crystallographic structures are rainbow coloured, with N-terminus in blue, and C-terminus in red.

However, a more detailed analysis allowed identifying certain differences in the generated models, particularly consisting in 2D structural features. These differences can be distinguished even between very close proteins like P19963, AF532754 and AF532760 (Ole e 1\_57A9, Ole e 1\_57A25 and Ole e 1\_57A23 with the new nomenclature), corresponding to the olive pollen major allergen cloned from different varietal sources or even to different clones of the same cultivar (Figure 2). The differences become higher when models of the same protein obtained from different plant species are compared. This is the case of P13447 and B9SBK9 (Ole e 1\_52L1 and Ole e 1\_52J1), which correspond to the LAT52 gene product in tomato and *Ricinus*, respectively (Figure 2). Divergences are even more obvious between the models indicated above and that of a P33050 (Ole e 1\_48H6), a different member of the Ole e 1 superfamily corresponding to a pollen protein from maize (C13 protein) (Figure 2).

#### 4. Discussion

Research as regard to the proteins of the Ole e 1 family has been carried out steadily since its definition. At present, many genes from the allergen Ole e 1 family of proteins have been characterized, and data are available concerning the sequence, structure, expression and biological function (e.g. extensin-like proteins constituting part of the cell wall). However, and as depicted in this chapter, the precise identification of more than half members of this family remains uncompleted. Up to now, Ole e 1 and Ole e 1-like genes are deposited into the databases, many of them with repetitive or arbitrary naming system by authors. This nomenclature includes a variety of generic names, such as Ole e 1 major olive pollen allergen, putative Ole e 1-like protein, anther-specific Ole e 1-like protein, and others depending of the protein location in the chromosome, e.g. At3g26960, Os09g0508200, or simply giving a random name e.g. P1 clone: MOJ10. For those members of the Ole e 1 family which have been recognized like allergens, a more sustainable and precise nomenclature has been built, by following the recommendations of the International Union of Immunological Societies (IUIS) (http://www.allergen.org/). However, these allergenic proteins only represent a part of the members of the Ole e 1 family, and this nomenclature still does not display the relationships among these proteins. In several cases, it is still common for researchers to use different names for the same allergen. Allergen biochemistry is now entering a new time of structural biology and proteomics that will require sophisticated tools for data processing and bioinformatics, and might require further definition of the nomenclature. Increasingly, the wealth of structural information is enabling the biologic function of allergens to be established and the assignment of allergen function to diverse protein families. Therefore, the arbitrary nomenclature currently in use is not sustainable for adequate comparative mega-functional genomics studies, especially as the number of Ole e 1 genes has increased steadily and will continue with this upward trend with the completion of the sequencing projects corresponding to more plant genomes.

The implementation of modifications in the nomenclature as proposed here may assist further developments of allergy understanding and new clinical approaches. As an example, nomenclature and structural biology have been proposed to play a crucial role in defining allergens for research studies and for the development of new clinical products [Chapman et al. 2007]. Sequence comparisons and assignments to protein families provide a molecular basis for clinical cross-reactions between food, pollen, and latex allergens that give rise to oral allergy syndromes [Wagner et al. 2002, Scheiner et al. 2004, van Ree 2004]. For food and pollen allergens, intrinsic protein structure probably plays an important role in determining allergenicity by conferring, for example, heat stability or resistance to digestion in the digestive tract, e.g. storage proteins from seed/nuts or legumes [Orruño and Morgan 2011]. Interestingly, analysis of databases, e.g. pFAM shows that there are currently more than 120 molecular architectures that are responsible for eliciting IgE responses. It will be important to link nomenclature with classification of allergens into protein families and subfamilies to provide complete definition of allergens and their structure-functional relationships as part of a comprehensive bioinformatics database. The practical consequences of this approach are seen most clearly with genetically modified foods, in which sequence comparisons can be used for safety assessment of genetically modified organisms [Goodman and Tetteh 2011].

The success of our new and unified nomenclature lies in its simplicity, with genetic basis and structural-functional characterizations of the proteins, regardless of the species origin, with the possibility to further nomenclature expansion, to include as-yet-unidentified protein allergens from different sources or species: mites, insects, pollens, molds and foods. It might be also possible to include in the system engineered protein molecules, such as hypoallergens, or others being described as non-protein allergens. Allergens entered into the nomenclature could be used to develop allergen-specific diagnostics and to formulate recombinant allergen vaccines that will benefit patients [Chapman et al. 2000, Ferreira et al. 2004, Jutel et al. 2005, Sastre 2010].

The proposed system may also assist to clarify the importance of allergen polymorphism. Allergens often display numerous variants. These are proteins with typically greater than 90% sequence identity, but with enough differences in their amino acid sequences to make worth individual structural and or functional characterization and identification. This polymorphism has been deeply analyzed in mites, as their allergens present an extensive number of isoforms: 23 for Der p 1 and 13 for Der p 2 [Smith et al. 2001, Smith et al. 2001]. Furthermore, these polymorphisms might affect T-cell responses or alter antibody-binding sites. These differences can be structurally characterized to distinguish isoforms in a welldefined nomenclature system, by mean of structural-functional differentiation, helping to design allergen formulations for immunotherapy [Jutel et al. 2005, Piboonpocanun et al. 2006]. In the case of pollen allergens, Ole e 1 from olive pollen is a clear example of extreme polymorphism, both in its peptide and in its carbohydrate moieties, as demonstrated by peptide mapping and N-glycopeptide analysis [Castro et al. 2010]. Olive cultivar origin is a major cause of polymorphism for Ole e 1 pollen allergen [Hamman-Khalifa et al. 2008, Castro et al. 2010]. The olive tree has an extremely wide germplasm, with over 1200 varieties cultivated over the world [Bartolini et al. 1994]. Therefore, the number of Ole e 1 isoforms yet to be characterized in olive pollen is expected to be enormous. A similar situation is also likely to occur in many other plant species.

Overall, our developed unified nomenclature system is helpful in a quick functional prediction of any newly cloned Ole e 1 gene(s), because from the nomenclature point of view, the newly sequenced gene(s) will always be characterized/named with sequence similarity with previously characterized Ole e 1 genes/proteins, as well as a protein structure-functional characterization and comparison. The changes that have been introduced reflect into which extended family or subfamily a certain Ole e 1 protein belongs. Accordingly, the new nomenclature will have no significant impact on already published data with old/arbitrary naming system. However, we urge scientists working on Ole e 1's to adopt this new and easy nomenclature system. In this regard, we have made an effort to preserve the user friendly linkage between the old and the new designations, which we hope will help researchers to adapt the new names. As the revised nomenclature should facilitate communication and understanding within the community interested in Ole e 1 allergen proteins, we advocate that this new naming system be used in all future studies.

The classification model used here has been developed under the basis of a previously designed gene nomenclature model for male fertility restorer (RF) proteins in higher plants [Kotchoni et al. 2010]. The increasing numbers of RF genes described in the literature represented an ongoing challenge in their clear identification and logical classification which was solved using the proposed nomenclature. Undoubtedly, similar approaches could be applied to numerous protein families involving relevant levels of nomenclature heterogeneity, many of them registered in specialized databases like pFam. In the case of allergens, other numerous protein families like profilins (Ole e 2 in the case of olive pollen)

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prolamins, cupins, Bet v 1-related proteins etc., which are currently included in the AllFam database [Radauer et al. 2008] (http://www.meduniwien.ac.at/allergens/allfam/) could benefit of the use of similar approaches.

#### 5. Conclusion

We propose for first time a unified naming system for Ole e 1-like genes and pseudogenes across all plant species, which accommodates the numerous sequences already deposited in several databases, offering the needed flexibility to incorporate additional Ole e 1-like proteins as they become available. Additionally, we provide an analysis of the phylogenetic relationships displayed by the members of the Ole e 1-like family and use computational protein modelling to determine structural features of selected members of this family. These data are of particular relevance for the understanding of their biological activity and allergenic cross-reactivity.

#### 6. Acknowledgment

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