SUPPLEMENTARY MATERIAL

Supplementary Table S1: A list of 83 plant species available in the Plant Reactome for comparative pathway analysis. The reference pathways were curated manually in rice (*Oryza sativa)* and subsequently, projected to other 82 species based on gene-orthology. The red-colored cells depict higher counts whereas shades of yellow to blue represent lower counts of the pathways, reactions, and genes/gene products. Details of an external source of data for each species (including a link) and the method employed for determining orthology are also listed. The * denotes that in the given species transcriptome assembly (instead of genome assembly) was used for pathway projection.

Supplementary Table S2: A list of updates in Plant Reactome knowledgebase covering Gramene release #52-61.

Supplementary Table S3: A list of interactors retrieved from Plant Interactome datasets for genes involved in the methylerythritol pathway (MEP). A few interactors discussed in the text are highlighted in yellow color.

Supplementary Figure S1: A view of the Plant Reactome homepage and associated functionalities.

Supplementary Figure S2: An example of a plant development pathway 'Regulation of embryo development' shows major transcriptional events associated with this developmental stage and connections to other metabolic and signaling pathways and gene products located in various organelles.

Supplementary Figure S3: Examples of internal Neo4j knowledge graph views, queries, and data formats, which are then consumed by the Plant Reactome application.

Supplementary Figure S4: Content Service Swagger interface components (https://plantreactome.gramene.org/ContentService/), consisting of a listing of available RESTful web service method calls, the query test form, the curl command that is executed to retrieve the data, and returned data in JSON format.

Supplementary Figure S5: Embeddable DiagramJs pathway widget, with constituent examples at Gramene and Ensembl.

Supplementary Figure S6: Integration of Plant Reactome data on NCBI PubChem site. An example of the thiamine biosynthesis pathway showing links to PubChem Compound, Protein, and Gene pages using the molecular entities identified in a Plant Reactome.

Supplementary Figure S7: Integration of Plant Reactome data with the EMBL-EBI Expression Atlas. Users can now search for plant pathways and associated data at the Expression Atlas website as well as access basal expression profiles of genes associated with Plant Reactome reactions and pathways. Expression Atlas also provides a "gene information card" view for individual genes and links to various Plant Reactome pathways.

Supplementary Table S1: A list of 83 plant species available in the Plant Reactome for comparative pathway analysis. The reference pathways were curated manually in rice (Oryza sativa) and subsequently, projected to another 82 species based on gene-orthology.
The red-colored cells depict a higher count whereas shades of yellow to blue represent lower counts of the pathways, reactions, and genes/gene products. Details of external source of data for each species (including link) and method employed for determining orthology are also listed.
The * denotes that in the given species transcriptome assembly (instead of genome assembly) was used for pathway projection.

Taxa					Pathways	Reactions	Gene products	Sequence source	Homology method
Angiosperm	Dicot	Core Rosid	Malvid	*Arabidopsis halleri*	235	582	1021	Ensembl Gramene	Compara
				Arabidopsis lyrata	235	584	1053	Ensembl Gramene	Compara
				Arabidopsis thaliana	236	590	1059	Ensembl Gramene	Compara
				Brassica oleracea	236	581	1619	Ensembl Gramene	Compara
				Brassica napus	238	590	3209	Ensembl Gramene	Compara
				Brassica rapa	235	578	1598	Ensembl Gramene	Compara
				Citrus sinensis	240	594	2366	Phytozome	Inparanoid
				Corchorus capsularis	233	554	781	Ensembl Gramene	Compara
				Gossypium raimondii	238	602	1420	Ensembl Gramene	Compara
				Populus trichocarpa	236	596	1329	Ensembl Gramene	Compara
				Theobroma cacao	238	598	877	Ensembl Gramene	Compara
			Fabid	*Arachis duranensis*	245	624	1057	PeanutBase	Inparanoid
				Arachis ipaensis	240	594	949	PeanutBase	Inparanoid
				Cajanus cajan	240	602	1235	LegumeInfo	Inparanoid
				Cicer arietinum	241	595	1461	NCBI	Inparanoid
				Cucumis sativus	237	590	834	Ensembl Gramene	Compara
				Fragaria vesca	240	566	1014	Phytozome	Inparanoid
				Glycine max	236	599	1947	Ensembl Gramene	Compara
				Trifolium pratense	237	588	1006	Ensembl Gramene	Compara
				Jatropha curcas	213	493	534	KDRI (Kazusa)	Inparanoid
				Lupinus angustifolius	237	597	1430	Ensembl Gramene	Compara
				Malus domestica	238	576	2009	PMID: 20802477	Inparanoid
				Manihot esculenta	236	597	1180	Ensembl Gramene	Compara
				Medicago truncatula	236	587	1182	Ensembl Gramene	Compara
				Phaseolus vulgaris	239	599	1065	Ensembl Gramene	Compara
				Prunus persica	239	606	944	Ensembl Gramene	Compara
				Vigna angularis	237	582	1003	Ensembl Gramene	Compara
				Vigna radiata	226	543	891	Ensembl Gramene	Compara
		Myrtales		*Eucalyptus grandis*	215	501	707	Phytozome	Inparanoid
		Vitales		*Vitis vinifera*	238	602	930	Ensembl Gramene	Compara
		Caryophyllales		*Beta vulgaris*	235	576	747	Ensembl Gramene	Compara
		Asterid		*Actinidia chinensis*	238	594	1410	Ensembl Gramene	Compara
				Helianthus annus	237	590	1576	Ensembl Gramene	Compara
				Capsicum annuum	242	583	1214	PMID: 24441736	Inparanoid
				Coffea canephora	240	590	1050	PMID:25190796	Inparanoid
				Daucus carota	235	574	1091	Ensembl Gramene	Compara
				Nicotiana attenuata	232	507	703	Ensembl Gramene	Compara
				Solanum lycopersicum	235	583	968	Ensembl Gramene	Compara
				Solanum tuberosum	229	561	967	Ensembl Gramene	Compara
	Monocot	Dioscoreales		*Dioscorea rotundata*	222	480	605	Ensembl Gramene	Compara
		Poales		*Aegilops tauschii*	236	627	1123	Ensembl Gramene	Compara
				Brachypodium distachyon	231	619	1031	Ensembl Gramene	Compara
				Hordeum vulgare	234	596	1043	Ensembl Gramene	Compara
				Leersia perrieri	236	618	1001	Ensembl Gramene	Compara
				*Oryza australiensis **	234	545	1704	OMAP/OGE	Inparanoid
				Oryza barthii	238	642	1057	Ensembl Gramene	Compara
				Oryza brachyantha	236	625	1013	Ensembl Gramene	Compara
				Oryza glaberrima	242	636	1051	Ensembl Gramene	Compara
				Oryza glumaepatula	239	642	1066	Ensembl Gramene	Compara
				*Oryza granulata **	239	568	3509	OMAP/OGE	Inparanoid
				Oryza kasalath	191	287	365	PMID: 24578372	Inparanoid
				*Oryza longistaminata **	236	604	917	Ensembl Gramene	Compara
				Oryza meridionalis	233	581	914	Ensembl Gramene	Compara
				*Oryza minuta **	240	588	2092	OMAP/OGE	Inparanoid
				Oryza nivara	238	652	1066	Ensembl Gramene	Compara
				*Oryza officinalis **	237	579	1882	OMAP/OGE	Inparanoid
				Oryza punctata	235	628	1067	Ensembl Gramene	Compara
				Oryza rufipogon	238	641	1076	Ensembl Gramene	Compara
				Oryza sativa Indica	242	664	1157	Ensembl Gramene	Compara
				Oryza sativa (REFERENCE)	**298**	**1723**	**1824**	**UniProt**	**Curated Reference**
				Panicum hallii FIL2	235	639	1076	Ensembl Gramene	Compara
				Panicum hallii var. hallii HAL2	237	642	1109	Ensembl Gramene	Compara
				Setaria italica	237	631	1114	Ensembl Gramene	Compara
				Sorghum bicolor	237	639	1095	Ensembl Gramene	Compara
				Triticum aestivum	238	642	3574	Ensembl Gramene	Compara
				Triticum dicoccoides	238	634	2123	Ensembl Gramene	Compara
				*Triticum turgidum **	238	597	2753	PMID: 23800085	Inparanoid
				Triticum urartu	229	544	864	Ensembl Gramene	Compara
				Zea mays	235	621	1380	Ensembl Gramene	Compara
		Zingeberales		*Musa acuminata*	227	566	1280	Ensembl Gramene	Compara
		Arecales		*Phoenix dactylifera*	234	557	1097	PMID: 23917264	Inparanoid
	Amborellae			*Amborella trichopoda*	236	573	682	Ensembl Gramene	Compara
Gymnosperm				*Picea abies*	236	530	1315	Congenie	Inparanoid
				Pinus taeda	225	475	1308	TreeBase	Inparanoid
Lycopod				*Selaginella moellendorffii*	220	522	1226	Ensembl Gramene	Compara
Bryophyte				*Physcomitrella patens*	214	513	1060	Ensembl Gramene	Compara
Chlorophyte				*Ostreococcus lucimarinus*	156	274	226	Ensembl Gramene	Compara
				Chlamydomonas reinhardtii	164	332	273	Ensembl Gramene	Compara
Rhodophyte				*Chondrus crispus*	140	210	183	Ensembl Gramene	Compara
				Galdieria sulphuraria	152	253	206	Ensembl Gramene	Compara
				Cyanidioschyzon merolae	142	216	169	Ensembl Gramene	Compara
Cyanobacteria				*Synechocystis pcc6803*	157	311	263	Jaiswal	Inparanoid

Supplementary Table S2.
A list of updates in Plant Reactome knowledgebase (Gramene release #52-61)

Gramene release #	Pathway curation and projection			Website, tools and coding update
#52 (November, 2016)	Metabolism, regulation, and transport	Auxin transport -Intracellular auxin transport -Circadian Rhythm -Tryptophan biosynthesis	Polar auxin transport	
	Growth and Development	Inflorescence development -Long day regulated expression of florigens -Short day regulated expression of florigens -Transition from vegetative to reproductive shoot apical meristem	-	
	Response to biotic and abiotic stimuli	Response to stress -Response to cold temperature	-	
	New species	*Beta vulgaris*, *Brassica napus*, *Syncechocystis pcc6803*, and *Trifolium pratense* (total 66 species).		
#55 (September, 2017)	Metabolism and regulation	-	-	-Several new data files made available for download that articulate the relationships between gene products, pathways, and reactions, and external reference sources such as ChEBI, Ensembl, NCBI, and UniProt. -Plant Reactome pathway data re-indexed and made available via Gramene search.
	Growth and Development	-	-	
	Response to biotic and abiotic stimuli	-	-	
	New species	No new species added (total species 66)		
#56B (Feb, 2018)	Metabolism and regulation	-Photorespiration -Ureide biosynthesis -Beta-alanine betaine biosynthesis -Proline biosynthesis V from arginine -Phospholipid biosynthesis I -Sphingolipid metabolism -Mugineic acid biosynthesis -Iron uptake and transport in root vascular system	-Cardiolipin biosynthesis -Ent-kaurene biosynthesis	Plant Reactome pathway data re-indexed and made available via Gramene search.

		-Proline degradation -Glutamate degradation -Phenylalanine degradation III -Lysine degradation II -Threonine degradation -Response to iron deficiency		
	Growth and Development	Vegetative structure development Reproductive structure development -Anther and pollen Development -Primary root development		
	Response to biotic and abiotic stimuli	Response to submergence -Underwater shoot and internode elongation -Response to phosphate deficiency		
	New species	*Cucumis sativus*, *Dioscorea rotundata*, *Helianthus annuus*, *Corchorus capsularis*, Lupinus angustifolius, *Nicotiana attenuata*, *Chondrus crispus*, and *Galdieria sulphuraria* (total 74 species).		
#59(October, 2018)	Metabolism and regulation	-Tricin biosynthesis -Lycopene catabolism -Oryzalyde A biosynthesis -Abscisic acid homeostasis -Reactive oxygen species homeostasis -Generation of superoxide radicals -Removal of superoxide radicals -Valine degradation -Cysteine degradation	-	The Plant Reactome web site redesigned on the Joomla Content Management System. Interactome overlay feature improvement: users can filter gene-gene interaction data a confidence score. EBI-Intact and BAR interactome data made available using the PSICQUIC webservices. Some gene-gene interaction data integrated in Plant Reactome for *Arabidopsis thaliana*. The latest Plant Reactome pathway data has been re-indexed and made available via Gramene search.
	Growth and Development	-Reproductive meristem phase change -Flower development -Floral bract development -Seed development	-	

	Response to biotic and abiotic stimuli	-Recognition of fungal and bacterial pathogens and immunity response	-	
	New species	*Daucus carota*, *Vigna radiata*, *Vigna angularis*, and *Triticum dicoccoides* (total 78 species).		
#60(Feb, 2019)	Metabolism and regulation		Thiosulfate disproportionation III	Plant Reactome pathway data re-indexed and made available via Gramene search
	Growth and Development	-Regulation of embryo development -Maternal tissue PCD -Cell cycle regulation -Aleurone layer formation -Regulation of seed size -Regulation of leaf development	Flower development	
	Response to biotic and abiotic stimuli	-Arsenic uptake and detoxification -HSFA7/HSFA6B transcription network induced by drought and ABA -SNAC1 transcription network involved in drought and salinity tolerance		
	New species	*Arabidopsis halleri* (total 79 species).		
#61 (April, 2019)	Metabolism and regulation	Phytic acid biosynthesis (lipid independent)	-	SSL (Secure Sockets Layer) has now been implemented on Plant Reactome. Plant Reactome pathway data has also been re-indexed and made available via Gramene search.
	Growth and Development	Development of Root hair	-	
	Response to biotic and abiotic stimuli	-Response to aluminum stress -Root-specific gene-network of -NAC10_TF induced by drought, salinity, and ABA	-SNAC1 transcription network involved in drought and salinity tolerance -HSFA7-regulatory network induced by drought and ABA	
	New species	*Actinidia chinensis* (kiwi fruit), *Panicum hallii FIL2* ("Hall's panicgrass"), and *Panicum hallii var. hallii HAL2* (total 82 species).		

Supplementary Table S3:
A list of interactors retrieved from Plant Interactome datasets for genes involved in methylerythritol pathway (MEP). A few interactors discussed in the text are highlighted in yellow color.

ID A	ID B	SCORE	#EVIDENCES
AT2G26930	AT2G35390	0.63	1
AT2G26930	AT2G44530	0.63	1
AT2G26930	AT5G66860	0.63	1
AT2G26930	AT4G23620	0.63	1
AT2G26930	AT1G32380	0.63	1
AT2G26930	AT1G10700	0.62	1
AT2G26930	AT1G18440	0.62	1
AT2G26930	AT5G19830	0.62	1
AT2G26930	AT2G42910	0.62	1
AT2G26930	AT5G38290	0.62	1
AT2G26930	AT1G30580	0.6	1
AT2G26930	AT1G09940	0.59	1
AT2G26930	AT5G14470	0.59	1
AT2G26930	AT2G38700	0.59	1
AT2G26930	AT3G01640	0.59	1
AT2G26930	AT3G54250	0.59	1
AT2G26930	AT1G56050	0.59	1
AT2G26930	AT1G58290	0.58	1
AT2G26930	AT4G16130	0.58	1
AT2G26930	AT3G42850	0.58	1
AT2G26930	AT1G01220	0.58	1
AT2G26930	AT2G31250	0.58	1
AT2G26930	AT2G17265	0.58	1
AT2G26930	AT3G06580	0.58	1
AT2G26930	AT2G47420	0.58	1
AT2G26930	AT2G47020	0.58	1
AT2G26930	AT1G31910	0.58	1
AT2G26930	AT5G66360	0.57	1
AT2G26930	AT5G27450	0.57	1
AT2G26930	AT1G33330	0.57	1
AT2G26930	AT3G62910	0.55	1
AT2G26930	AT1G01860	0.54	1
AT2G26930	AT3G55400	0.4	1
AT2G26930	AT3G02060	0.37	1
AT2G26930	AT2G02500	0.34	1
AT2G26930	AT1G63680	0.34	1

AT2G26930	AT5G64150	0.33	1
AT2G26930	AT5G22800	0.32	1
AT2G26930	AT5G64580	0.31	1
AT2G26930	AT2G27760	0.28	1
AT2G26930	AT3G18880	0.25	1
AT2G26930	AT1G49400	0.24	1
AT2G26930	AT2G43030	0.24	1
AT2G02500	AT1G63970	0.63	1
AT2G02500	AT3G04820	0.61	1
AT2G02500	AT3G48330	0.58	1
AT2G02500	AT4G14930	0.58	1
AT2G02500	AT5G50240	0.58	1
AT2G02500	AT1G72880	0.56	1
AT2G02500	AT4G02120	0.54	1
AT2G02500	AT2G29560	0.53	1
AT2G02500	AT2G34890	0.52	1
AT2G02500	AT1G30820	0.51	1
AT2G02500	AT4G20320	0.48	1
AT2G02500	AT2G36530	0.48	1
AT2G02500	AT3G12670	0.47	1
AT2G02500	AT5G50340	0.45	1
AT2G02500	AT1G74030	0.45	1
AT2G02500	AT3G28860	0.44	1
AT2G02500	AT1G55140	0.44	1
AT2G02500	AT2G31170	0.44	1
AT2G02500	AT4G12060	0.44	1
AT2G02500	AT3G13740	0.44	1
AT2G02500	AT3G54690	0.44	1
AT2G02500	AT4G25370	0.43	1
AT2G02500	AT2G19870	0.43	1
AT2G02500	AT1G26920	0.4	1
AT2G02500	AT3G45450	0.4	1
AT2G02500	AT5G50920	0.39	1
AT2G02500	AT5G38830	0.38	1
AT2G02500	AT3G48870	0.37	1
AT2G02500	AT1G16340	0.36	1
AT2G02500	AT1G79500	0.36	1
AT2G02500	AT3G02110	0.36	1
AT2G02500	AT2G14890	0.36	1
AT2G02500	AT2G45280	0.36	1
AT2G02500	AT5G56760	0.35	1
AT2G02500	AT3G56300	0.35	1
AT2G02500	AT2G26930	0.34	1
AT2G02500	AT1G55920	0.34	1

AT2G02500	AT5G51070	0.33	1
AT2G02500	AT4G18740	0.33	1
AT2G02500	AT4G35640	0.33	1
AT2G02500	AT5G14920	0.33	1
AT2G02500	AT3G13110	0.33	1
AT2G02500	AT2G17640	0.33	1
AT2G02500	AT5G60600	0.33	1
AT2G02500	AT3G57040	0.33	1
AT2G02500	AT5G12250	0.32	1
AT2G02500	AT4G24510	0.3	1
AT2G02500	AT5G16000	0.3	1
AT2G02500	AT5G48900	0.28	1
AT2G02500	AT5G62790	0.28	1
AT2G02500	AT3G18880	0.28	1
AT2G02500	AT1G67430	0.28	1
AT2G02500	AT1G27400	0.28	1
AT2G02500	AT2G05790	0.27	1
AT2G02500	AT4G34350	0.26	1
AT2G02500	AT4G34730	0.26	1
AT2G02500	AT1G52190	0.25	1
AT2G02500	AT3G20230	0.24	1
AT2G02500	AT1G22740	0.23	1
AT2G02500	AT3G19820	0.23	1
AT2G02500	AT1G65010	0.23	1
AT2G02500	AT2G24020	0.23	1
AT2G02500	AT5G11420	0.23	1
AT2G02500	AT2G45850	0.21	1
AT2G02500	AT1G58440	0.21	1
AT2G02500	AT3G24800	0.21	1
AT2G02500	AT3G49260	0.21	1
AT5G62790	AT3G63190	0.63	1
AT5G62790	AT5G58780	0.63	1
AT5G62790	AT2G45150	0.63	1
AT5G62790	AT5G58782	0.63	1
AT5G62790	AT5G58784	0.63	1
AT5G62790	AT2G32480	0.63	1
AT5G62790	AT5G60500	0.63	1
AT5G62790	AT5G58770	0.63	1
AT5G62790	AT1G62430	0.63	1
AT5G62790	AT3G18680	0.63	1
AT5G62790	AT2G23400	0.63	1
AT5G62790	AT3G10030	0.63	1
AT5G62790	AT2G23410	0.63	1
AT5G62790	AT4G22340	0.63	1

AT5G62790	AT4G26770	0.63	1
AT5G62790	AT4G11120	0.63	1
AT5G62790	AT5G60510	0.63	1
AT5G62790	AT3G60620	0.63	1
AT5G62790	AT3G01800	0.63	1
AT5G62790	AT2G17570	0.63	1
AT5G62790	AT1G05140	0.63	1
AT5G62790	AT5G10160	0.62	1
AT5G62790	AT4G29060	0.62	1
AT5G62790	AT5G05520	0.62	1
AT5G62790	AT4G29540	0.62	1
AT5G62790	AT2G04560	0.62	1
AT5G62790	ATCG00160	0.62	1
AT5G62790	AT3G03600	0.62	1
AT5G62790	AT2G22230	0.62	1
AT5G62790	AT4G05210	0.61	1
AT5G62790	AT4G21220	0.61	1
AT5G62790	AT3G11070	0.6	1
AT5G62790	AT3G25740	0.6	1
AT5G62790	AT1G13270	0.6	1
AT5G62790	AT2G25100	0.6	1
AT5G62790	AT2G45240	0.6	1
AT5G62790	AT4G37040	0.59	1
AT5G62790	AT1G72370	0.59	1
AT5G62790	AT4G22780	0.57	1
AT5G62790	AT5G10880	0.54	1
AT5G62790	AT3G01990	0.53	1
AT5G62790	AT2G03730	0.51	1
AT5G62790	AT1G69040	0.46	1
AT5G62790	AT5G57950	0.45	1
AT5G62790	AT1G21500	0.45	1
AT5G62790	AT5G04740	0.42	1
AT5G62790	AT3G02730	0.42	1
AT5G62790	AT1G33040	0.41	1
AT5G62790	AT5G19940	0.4	1
AT5G62790	AT2G38040	0.4	1
AT5G62790	AT5G53580	0.39	1
AT5G62790	AT3G16250	0.38	1
AT5G62790	AT3G46740	0.38	1
AT5G62790	AT3G18390	0.38	1
AT5G62790	AT1G63970	0.38	1
AT5G62790	AT1G76825	0.37	1
AT5G62790	AT4G09650	0.37	1
AT5G62790	AT4G18370	0.37	1

AT5G62790	AT3G51800	0.36	1
AT5G62790	AT5G63420	0.36	1
AT5G62790	AT3G57150	0.36	1
AT5G62790	AT3G62120	0.36	1
AT5G62790	AT5G19620	0.36	1
AT5G62790	AT1G12420	0.35	1
AT5G62790	AT4G31850	0.35	1
AT5G62790	AT1G12800	0.35	1
AT5G62790	AT1G12900	0.34	1
AT5G62790	AT5G08340	0.33	1
AT5G62790	AT5G23330	0.33	1
AT5G62790	AT1G76720	0.32	1
AT5G62790	AT3G12290	0.32	1
AT5G62790	AT1G33810	0.32	1
AT5G62790	AT5G52520	0.32	1
AT5G62790	AT3G51510	0.32	1
AT5G62790	AT2G21385	0.32	1
AT5G62790	AT4G37510	0.31	1
AT5G62790	AT2G04400	0.31	1
AT5G62790	AT1G76810	0.31	1
AT5G62790	AT3G52750	0.31	1
AT5G62790	AT5G14260	0.31	1
AT5G62790	AT3G27850	0.3	1
AT5G62790	AT3G09210	0.3	1
AT5G62790	AT3G27830	0.3	1
AT5G62790	AT5G58330	0.3	1
AT5G62790	AT1G03630	0.3	1
AT5G62790	AT2G42220	0.29	1
AT5G62790	AT5G53860	0.29	1
AT5G62790	AT2G31350	0.29	1
AT5G62790	AT3G47460	0.29	1
AT5G62790	AT2G02500	0.28	1
AT5G62790	AT3G12080	0.28	1
AT5G62790	AT5G48220	0.28	1
AT5G62790	AT2G28605	0.28	1
AT5G62790	AT2G01350	0.28	1
AT5G62790	AT4G35250	0.28	1
AT5G62790	AT4G18270	0.28	1
AT5G62790	AT1G19150	0.28	1
AT5G62790	AT1G49530	0.27	1
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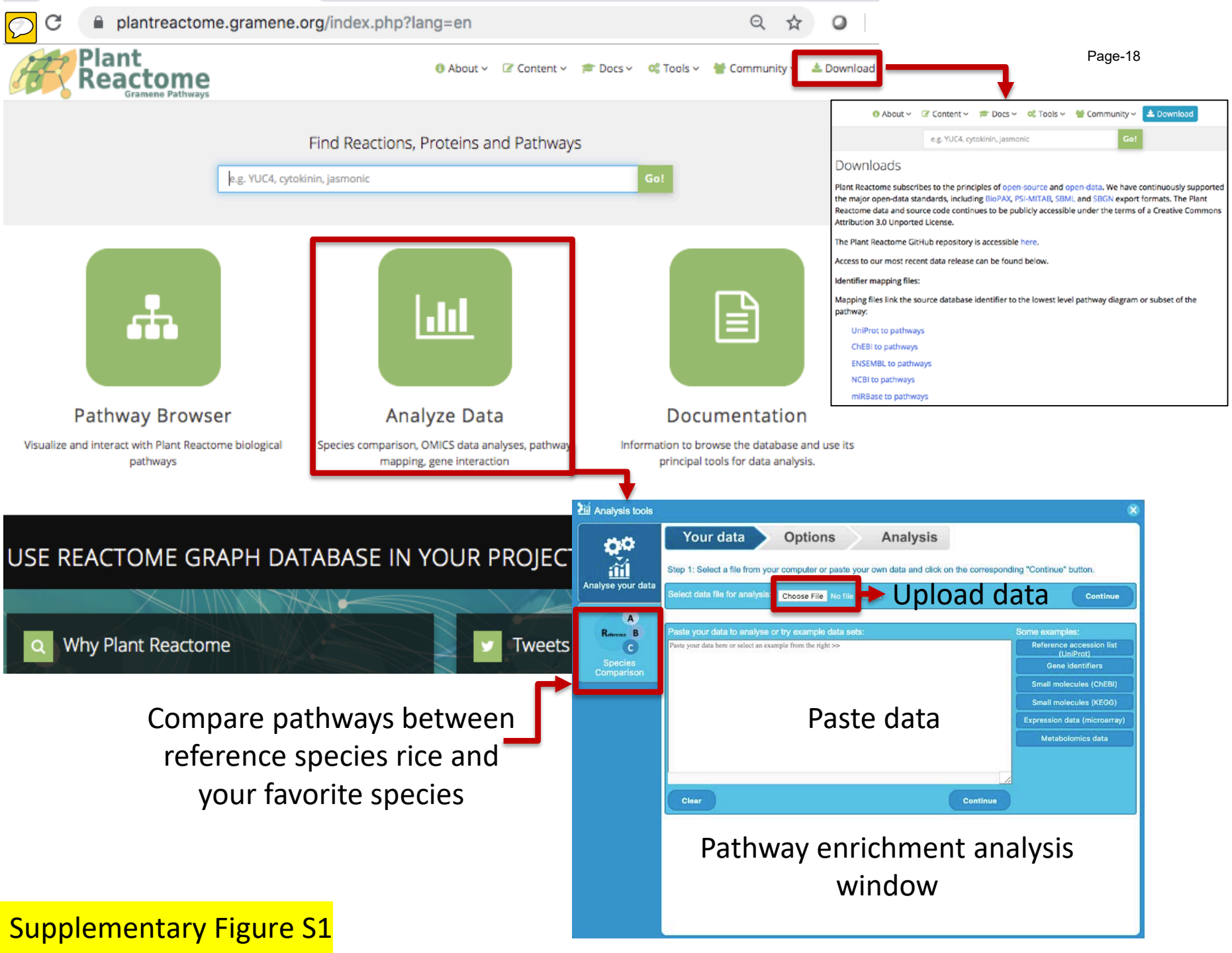


Upload data

Compare pathways between reference species rice and your favorite species

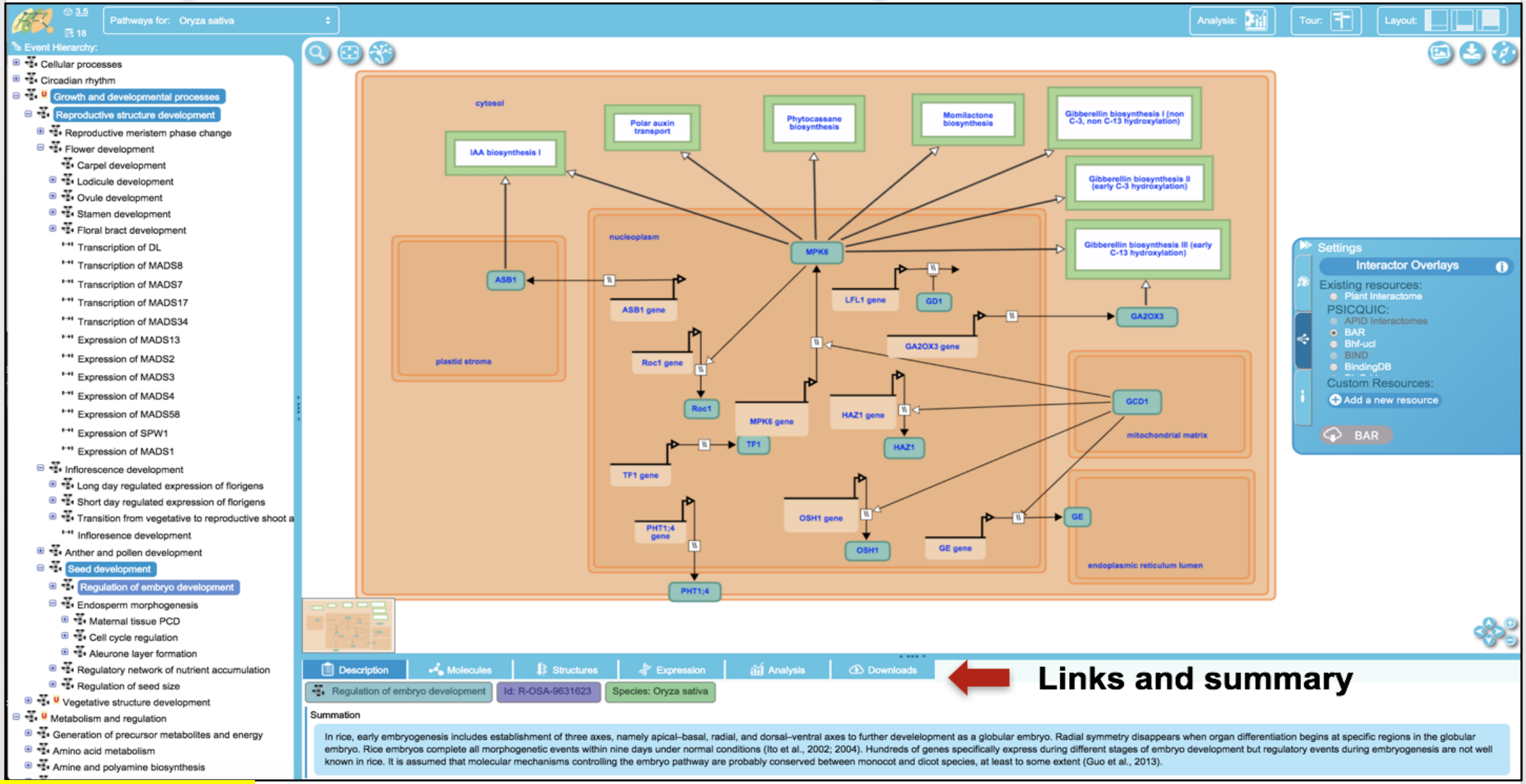
Paste data

Pathway enrichment analysis window

Supplementary Figure S1

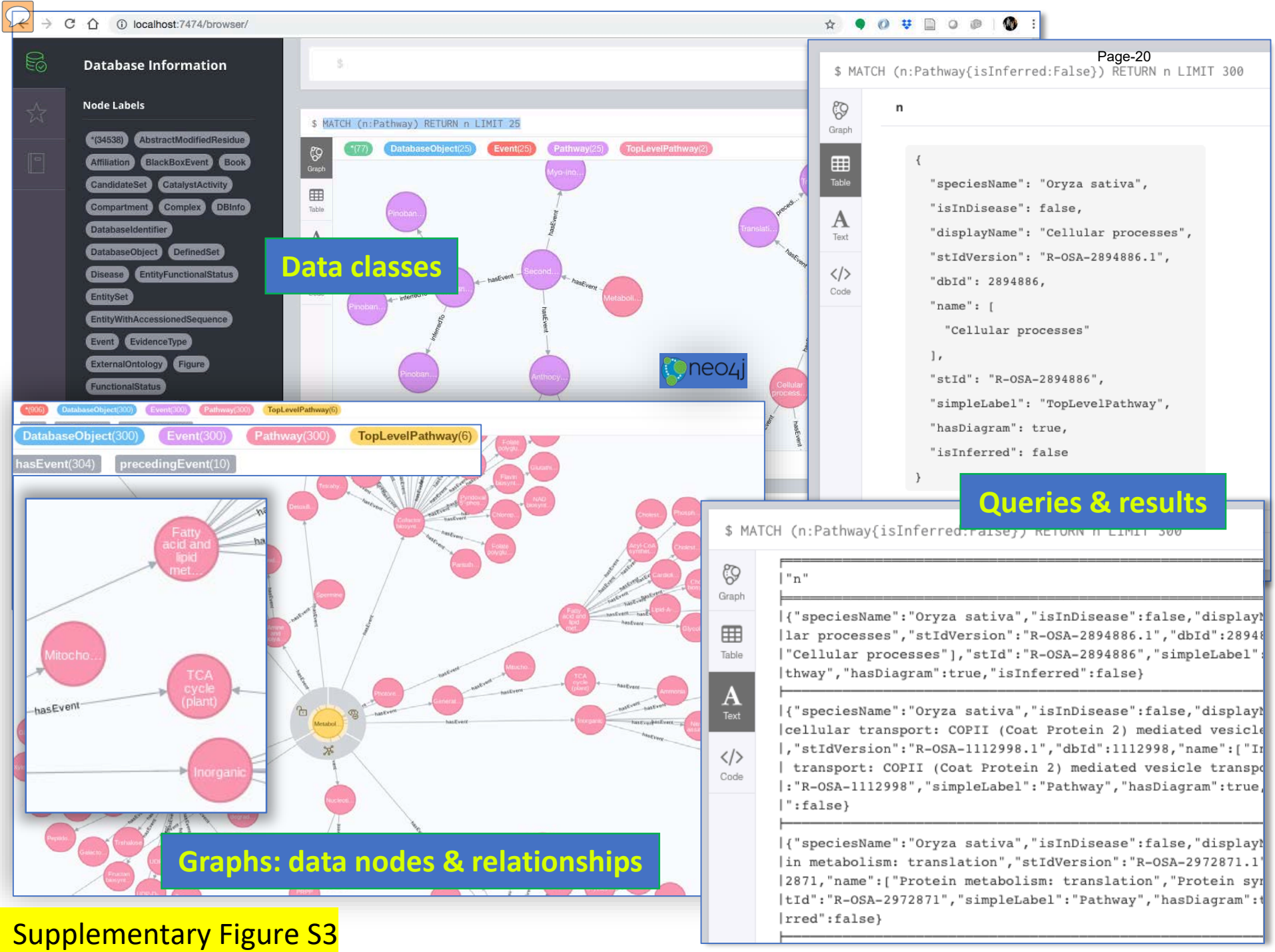
Event hierarchy

Pathway diagram

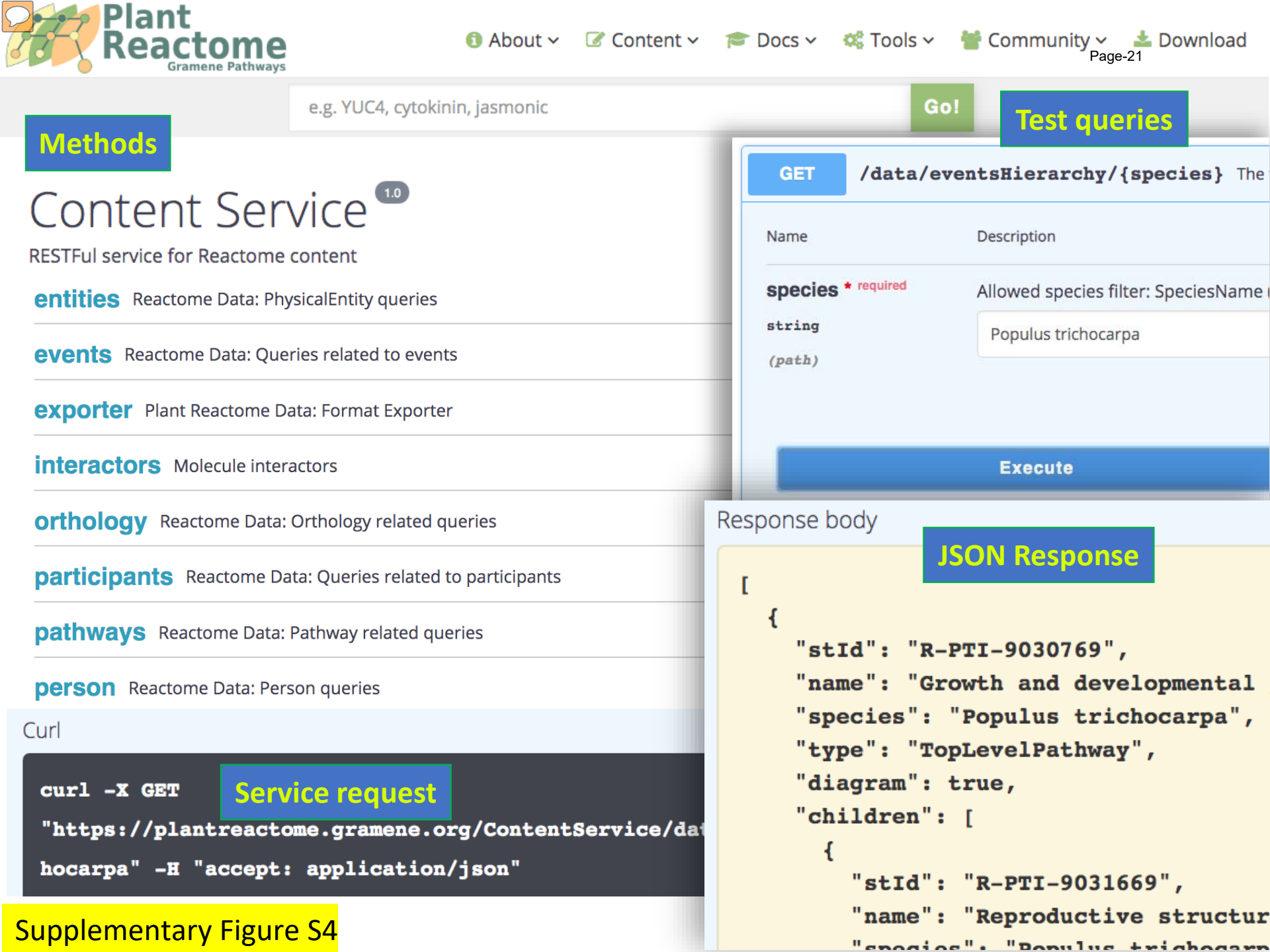


Links and summary

Supplementary Figure S2



Supplementary Figure S3



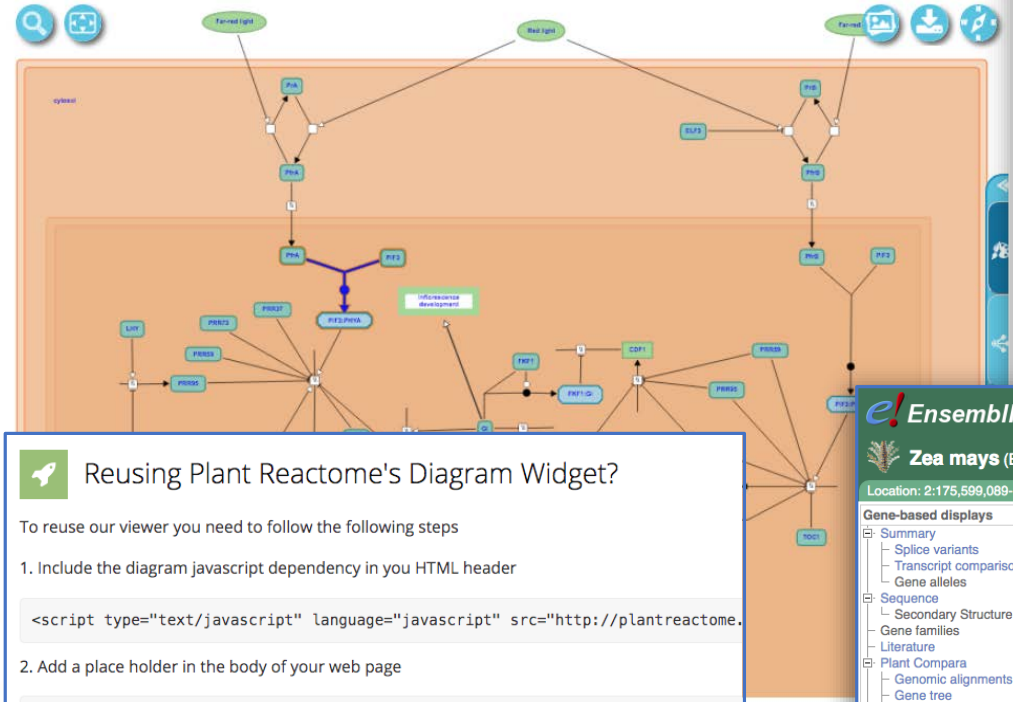
Supplementary Figure S4

Plant Reactome
Gramene Pathways

Embeddable pathway widget

Diagram JS

Plant Reactome's DiagramJs widget is our diagram viewer in an ordinary JavaScript AP
resources in order to display Plant Reactome Pathway Diagrams directly in their web



Reusing Plant Reactome's Diagram Widget?

To reuse our viewer you need to follow the following steps

1. Include the diagram javascript dependency in you HTML header

```
<script type="text/javascript" language="javascript" src="http://plantreactome.
```

2. Add a place holder in the body of your web page

```
<div id="diagramHolder"></div>
```

3. Create and initialise the diagram viewer from your javascript c

```
    //Creating the Reactome Diagram widget
    //Take into account a proxy needs to be set up in your server side pointing
    function onReactomeDiagramReady(){  //This function is automatically calle
        var diagram = Reactome.Diagram.create({
            "placeHolder" : "diagramHolder",
```

Javascript instructions

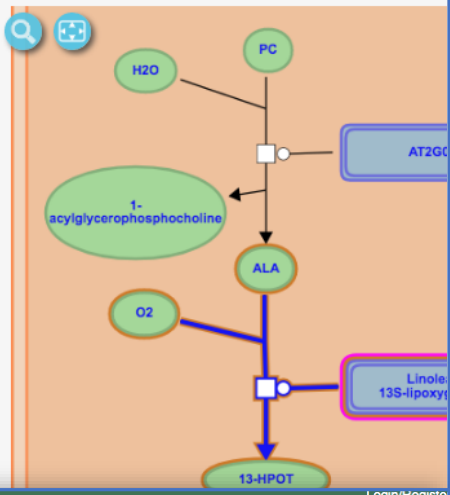
Gramene
Search for genes, species, pathways, ontology terms, domains...
654
Plant Reactome Pathway | Jasmonic acid biosynthesis

LOX3 AT1G17420 *Arabidopsis thaliana*
lipoxygenase 3

LOX3 encode a Lipoxyg
catalyze the oxygenatio

Location | Expression | Homology | **Pathways** | X-refs

- Metabolism and regulation
  - Hormone signaling, transport, and metabolism
    - Jasmonic acid biosynthesis
      - O2+linolenate->13-HPOT
  - Secondary metabolism
    - 13-LOX and 13-HPL pathway
      - O2+linolenate->13-HPOT
      - Lipoxygenase
    - Divinyl ether biosynthesis II (13-LOX)
      - Lipoxygenase



Client sites

EnsemblPlants ▾ | HMMER | BLAST | BioMart | Tools | Downloads | More ▾
Search Ensembl Plants...
Login/Registe
Zea mays (B73_RefGen_v4) ▾
Location: 2:175,599,089-175,605,258 | Gene: phospholipase D12

Gene-based displays
- Summary
  - Splice variants
  - Transcript comparison
  - Gene alleles
- Sequence
  - Secondary Structure
- Gene families
- Literature
- Plant Compara
  - Genomic alignments
  - Gene tree
  - Gene gain/loss tree
  - Orthologues
  - Paralogues
- Pan-taxonomic Compara
  - Gene Tree
  - Orthologues
- Ontologies
  - GO: Cellular component
  - GO: Molecular function
  - GO: Biological process
- Phenotypes
- Genetic Variation
  - Variant table
  - Variant image
  - Structural variants
- Gene expression
- **Pathway**
- Regulation
- External references
- Supporting evidence

Gene: phospholipase D12 Zm00001d005484

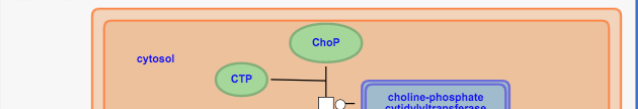
Description	phospholipase D12
Synonyms	GRMZM2G145944, phospholipase D delta-like, pld12, ZmPLDδ3
Location	Chromosome 2: 175,599,089-175,605,258 reverse strand.
About this gene	This gene has 9 transcripts (splice variants), 37 orthologues and 19 paralogues.
Transcripts	Show transcript table

Pathway

Pathway
Zm00001d005484 has been highlighted in the pathway where applicable. Click on the list of pathway IDs below to display that pathway

R-ZMA-1119276
Choline biosynthesis III

Choline biosynthesis III



Supplementary Figure S5

Thiamin Biosynthesis Pathway

CONTENTS

1.2 External ID

R-OSA-1119629

- from Plant Reactome

2 Diagram

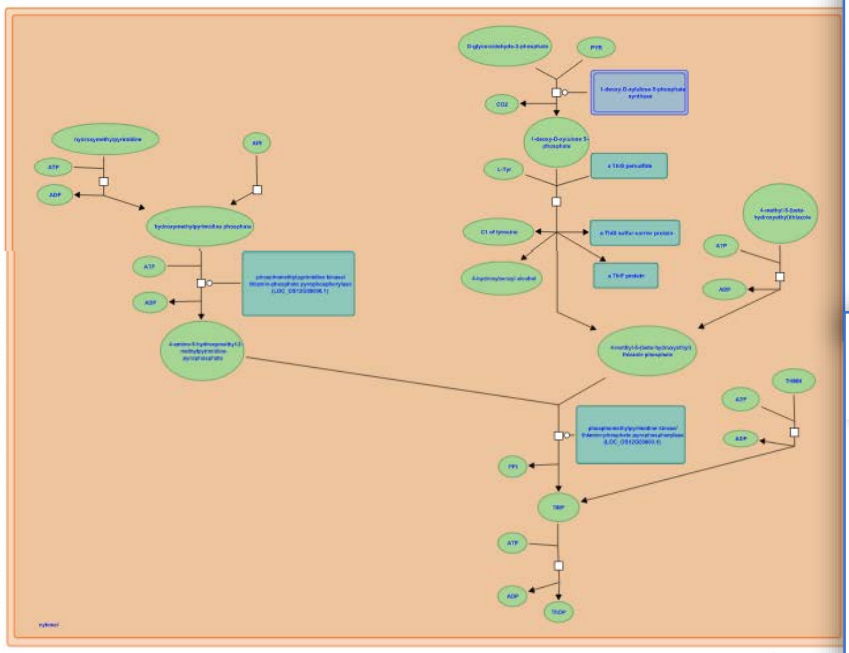


Diagram of thiamine biosynthesis

Supplementary Figure S6

PubChem Probable Thiamine Biosynth... (Protein) CONTENTS

4 Pathways

3 items View More Details Download

SORT BY Pathway

Pathway	Source	External ID
Cofactor biosyntheses	Plant Reactome	R-OSA-2867929
Metabolism and regulation	Plant Reactome	R-OSA-2744345
Thiamin biosynthesis	Plant Reactome	R-OSA-1119629

PubChem LOC4351707 - Probable Thiamine Biosynthetic Bifunctional Enzyme,

3 Interactions and Pathways

3.1 Pathways

3 items View More Details Download

SORT BY Pathway

Pathway	Source	External ID
Cofactor biosyntheses	Plant Reactome	R-OSA-2867929
Metabolism and regulation	Plant Reactome	R-OSA-2744345
Thiamin biosynthesis	Plant Reactome	R-OSA-1119629

PubChem Thiami... (Compound) CONTENTS

11.2 Pathways

2 items View More Details Download

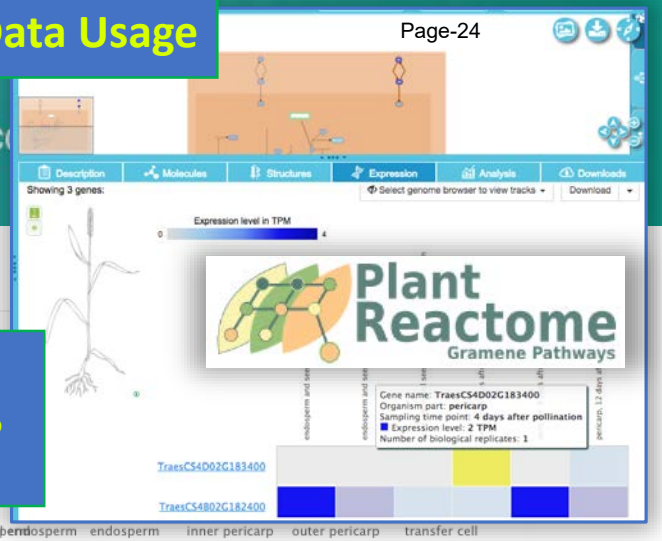
SORT BY Pathway

Pathway	Source	External ID
Thiamin biosynthesis	Plant Reactome	R-OSA-1119629
Thiamine metabolic pathways	WikiPathways	WP4297

Expression Atlas

Gene expression across species and biological c

Reciprocal Data Usage



Plant Reactome embeds the ATLAS expression widget

Results for Circadian rhythm AND Triticum aestivum

Baseline expression | Differential expression

Show anatomograms

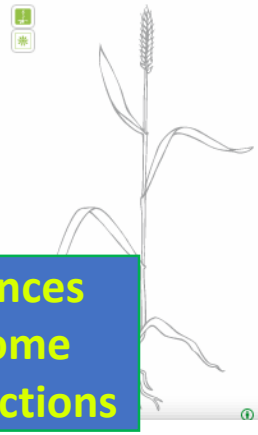
Filter your results

Triticum aestivum

- Organism part
- Developmental stage
- Sampling time point

Organism part

Showing 4 experiments:



Cell Types - Pfeifer - 20 days post ...

3 Tissues - Phillips et al

Cell Types - Pfeifer - 30 days post ...

Cell Types - Pfeifer - 10 days post ...

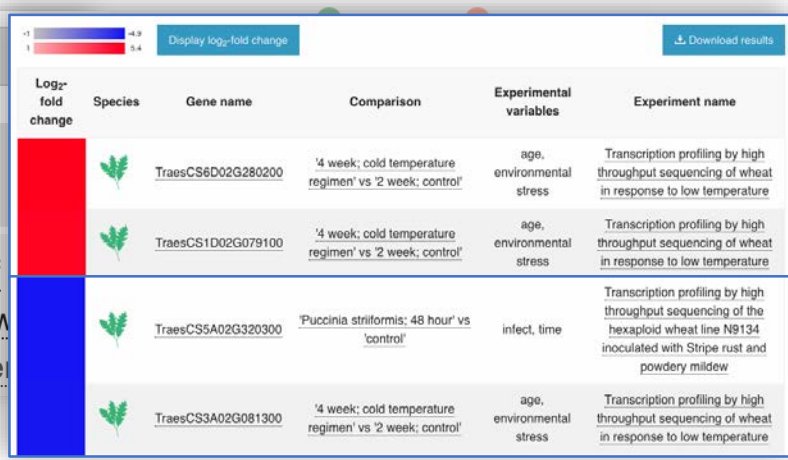
ATLAS references Plant Reactome pathway projections

TraesCS4D02G183400 *Triticum aestivum* Phytochrome

Baseline expression | Differential expression | TraesCS4D02G183400 information

Reactome pathway ID

Circadian rhythm, Long day regulated expression of florigens, Reproductive structure development, Grow developmental processes, Inflorescence developme



Supplementary Figure S7