

	Gephebase Gene	GepheID
O5SPL14 / WFP (https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=O5SPL14+WFP#gephebase-summary-title)	GP00000813	Main curator
Published	Entry Status	Martin

Morphology (#Morphology #gephebase-summary-title)		Trait Category	
Grain yield (#gephebase-summary-title)		Trait	
Oryza sativa L. ssp. Japonica and Indica		Trait State in Taxon A	
Oryza sativa L. ssp. Japonica and Indica		Trait State in Taxon B	
Data not curated		Ancestral State	
Domesticated (#gephebase-summary-title)		Taxonomic Status	
Taxon A		Taxon B	
Oryza sativa (#gephebase-summary-title)	Latin Name	Oryza sativa (#gephebase-summary-title)	Latin Name
rice	Common Name	rice	Common Name
rice; red rice; Oryza sativa L.	Synonyms	rice; red rice; Oryza sativa L.	Synonyms
species	Rank	species	Rank
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Oryzoideae; Oryzeae; Oryzinae; Oryza	Lineage	cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Oryzoideae; Oryzeae; Oryzinae; Oryza	Lineage
Oryza () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4527)	Parent	Oryza () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4527)	Parent
4530 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4530)	NCBI Taxonomy ID	4530 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4530)	NCBI Taxonomy ID
is Taxon A an Intraspecies?		is Taxon B an Intraspecies?	
Yes		Yes	
Oryza sativa L. ssp. Japonica and Indica	Taxon A Description	Oryza sativa L. ssp. Japonica and Indica	Taxon B Description

IPA1	Generic Gene Name	D8WJ58 (http://www.uniprot.org/uniprot/D8WJ58)	UniProtKB <i>Oryza sativa</i>
-	Synonyms	GU136674 (https://www.ncbi.nlm.nih.gov/nuccore/GU136674)	GenebankID or UniProtKB
-	String		
-	Sequence Similarities		
-	GO - Molecular Function		
	GO:0046872 : metal ion binding (https://www.ebi.ac.uk/QuickGO/term/GO:0046872)		
	GO:0003677 : DNA binding (https://www.ebi.ac.uk/QuickGO/term/GO:0003677)		
-	GO - Biological Process		
-	GO - Cellular Component		
	GO:0005634 : nucleus (https://www.ebi.ac.uk/QuickGO/term/GO:0005634)		
			Presumptive Null

No (https://www.gephebase.org/search-criteria?/and+Presumptive+Null=~No~#gephebase-summary-title)	Molecular Type
Cis-regulatory (https://www.gephebase.org/search-criteria?/and+Molecular+Type=~Cis-regulatory~#gephebase-summary-title)	Aberration Type
SNP (https://www.gephebase.org/search-criteria?/and+Aberration+Type=~SNP~#gephebase-summary-title)	Molecular Details of the Mutation
Point mutation resulting in altered binding of a micro-RNA	Experimental Evidence
Linkage Mapping (https://www.gephebase.org/search-criteria?/and+Experimental+Evidence=~Linkage+Mapping~#gephebase-summary-title)	Main Reference
Regulation of OsSPL14 by OsmiR156 defines ideal plant architecture in rice. (2010) (https://pubmed.ncbi.nlm.nih.gov/20495565)	Authors
Jiao Y; Wang Y; Xue D; Wang J; Yan M; Liu G; Dong G; Zeng D; Lu Z; Zhu X; Qian Q; Li J	Abstract
Increasing crop yield is a major challenge for modern agriculture. The development of new plant types, which is known as ideal plant architecture (IPA), has been proposed as a means to enhance rice yield potential over that of existing high-yield varieties. Here, we report the cloning and characterization of a semidominant quantitative trait locus, IPA1 (Ideal Plant Architecture 1), which profoundly changes rice plant architecture and substantially enhances rice grain yield. The IPA1 quantitative trait locus encodes OsSPL14 (SQUAMOSA PROMOTER BINDING PROTEIN-LIKE 14) and is regulated by microRNA (miRNA) OsmiR156 in vivo. We demonstrate that a point mutation in OsSPL14 perturbs OsmiR156-directed regulation of OsSPL14, generating an ‘ideal’ rice plant with a reduced tiller number, increased lodging resistance and enhanced grain yield. Our study suggests that OsSPL14 may help improve rice grain yield by facilitating the breeding of new elite rice varieties.	
OsSPL14 promotes panicle branching and higher grain productivity in rice. (2010) (https://pubmed.ncbi.nlm.nih.gov/20495564)	Additional References

RELATED GEPHE

4 (Chalk5, DEP1, OsCKX2=Gn1a, THOUSAND-GRAIN WEIGHT 6 (TGW6)) (https://www.gephebase.org/search-criteria?/or+Taxon+ID=~4530~/and+Trait=Grain+yield/and+groupHaplotypes=true#gephebase-summary-title)	Related Genes
No matches found.	Related Haplotypes

EXTERNAL LINKS

COMMENTS