

## GEPHE SUMMARY

<p>O<sub>s</sub>SPL13 (<a href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=~O&lt;sub&gt;s&lt;/sub&gt;SPL13~#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=~O<sub>s</sub>SPL13~#gephebase-summary-title</a>)</p> <p>Published</p>	<p>Gephebase Gene</p> <p>Entry Status</p>	<p>GP00001572</p> <p>Prigent</p>	<p>GepheID</p> <p>Main curator</p>
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## PHENOTYPIC CHANGE

<p>Morphology (<a href="https://www.gephebase.org/search-criteria?/and+Trait+Category=~Morphology~#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait+Category=~Morphology~#gephebase-summary-title</a>)</p> <p>Grain size (<a href="https://www.gephebase.org/search-criteria?/and+Trait=~Grain+size~#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait=~Grain+size~#gephebase-summary-title</a>)</p> <p>Rice japonica variety with large grain</p> <p>Rice japonica variety with small grain</p> <p>Taxon A</p> <p>Domesticated (<a href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=~Domesticated~#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=~Domesticated~#gephebase-summary-title</a>)</p>	<p>Trait Category</p> <p>Trait</p> <p>Trait State in Taxon A</p> <p>Trait State in Taxon B</p> <p>Ancestral State</p> <p>Taxonomic Status</p>	<p>Rice japonica variety with large grain</p> <p>Rice japonica variety with small grain</p>	<p>Taxon A</p> <p>Taxon B</p>
<p>Oryza sativa (<a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Oryza+sativa~#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Oryza+sativa~#gephebase-summary-title</a>)</p> <p>rice</p> <p>rice; red rice; <i>Oryza sativa</i> L.</p> <p>species</p> <p>cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Oryzoideae; Oryzaceae; Oryzinae; Oryza</p> <p><i>Oryza</i> () - (Rank: genus) (<a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4527">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4527</a>)</p> <p>4530 (<a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4530">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4530</a>)</p> <p>is Taxon A an Intraspecies?</p> <p>Yes</p> <p>Rice japonica variety with large grain</p>	<p>Latin Name</p> <p>Common Name</p> <p>Synonyms</p> <p>Rank</p> <p>Lineage</p> <p>Parent</p> <p>NCBI Taxonomy ID</p> <p>is Taxon A an Intraspecies?</p> <p>Taxon A Description</p>	<p>Oryza sativa Japonica Group (<a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Oryza+sativa+Japonica+Group~#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Oryza+sativa+Japonica+Group~#gephebase-summary-title</a>)</p> <p>Japanese rice</p> <p><i>Oryza sativa</i> (japonica cultivar-group); <i>Oryza sativa</i> subsp. japonica; Japanese rice; Japonica rice; <i>Oryza sativa</i> (japonica cultivar-group); <i>Oryza sativa</i> japonica; <i>Oryza sativa</i> ssp. japonica</p> <p>no rank</p> <p>cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Oryzoideae; Oryzaceae; Oryzinae; Oryza; <i>Oryza sativa</i></p> <p><i>Oryza sativa</i> (rice) - (Rank: species) (<a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4530">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4530</a>)</p> <p>39947 (<a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=39947">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=39947</a>)</p> <p>is Taxon B an Intraspecies?</p> <p>Yes</p> <p>Rice japonica variety with small grain</p>	<p>Latin Name</p> <p>Common Name</p> <p>Synonyms</p> <p>Rank</p> <p>Lineage</p> <p>Parent</p> <p>NCBI Taxonomy ID</p> <p>is Taxon B an Intraspecies?</p> <p>Taxon B Description</p>

## GENOTYPIC CHANGE

<p>SPL13</p> <p>GLW7; SPL13; O<sub>s</sub>07g0505200; LOC_O<sub>s</sub>07g32170; P0430F03.47</p> <p>39947.LOC_O<sub>s</sub>07g32170.1 (<a href="http://string-db.org/newstring.cgi/show_network_section.pl?identifier=39947.LOC_O&lt;sub&gt;s&lt;/sub&gt;07g32170.1">http://string-db.org/newstring.cgi/show_network_section.pl?identifier=39947.LOC_O<sub>s</sub>07g32170.1</a>)</p> <p>-</p> <p>GO:0046872 : metal ion binding (<a href="https://www.ebi.ac.uk/QuickGO/term/GO:0046872">https://www.ebi.ac.uk/QuickGO/term/GO:0046872</a>)</p> <p>GO:0003677 : DNA binding (<a href="https://www.ebi.ac.uk/QuickGO/term/GO:0003677">https://www.ebi.ac.uk/QuickGO/term/GO:0003677</a>)</p> <p>-</p>	<p>Generic Gene Name</p> <p>Synonyms</p> <p>String</p> <p>Sequence Similarities</p> <p>GO - Molecular Function</p> <p>GO - Biological Process</p>	<p>UniProtKB <i>Oryza sativa</i> subsp. japonica</p> <p>Q6Z461 (<a href="http://www.uniprot.org/uniprot/Q6Z461">http://www.uniprot.org/uniprot/Q6Z461</a>)</p> <p>0</p> <p>GenebankID or UniProtKB</p>
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GO:0005634 : nucleus (<https://www.ebi.ac.uk/QuickGO/term/GO:0005634>)

No ( <a +no^"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Presumptive+Null=">https://www.gephebase.org/search-criteria?/and+Presumptive Null="+No^"#gephebase-summary-title</a> )	Presumptive Null
Cis-regulatory ( <a +cis-regulatory^"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Molecular+Type=">https://www.gephebase.org/search-criteria?/and+Molecular Type="+Cis-regulatory^"#gephebase-summary-title</a> )	Molecular Type
Insertion ( <a +insertion^"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Aberration+Type=">https://www.gephebase.org/search-criteria?/and+Aberration Type="+Insertion^"#gephebase-summary-title</a> )	Aberration Type
1-9 bp	Insertion Size
a CACTTC tandem repeat sequence in the 5' UTR is causing reduced expression	Molecular Details of the Mutation
Association Mapping ( <a +association+mapping^"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Experimental+Evidence=">https://www.gephebase.org/search-criteria?/and+Experimental Evidence="+Association Mapping^"#gephebase-summary-title</a> )	Experimental Evidence
OsSPL13 controls grain size in cultivated rice. (2016) ( <a href="https://pubmed.ncbi.nlm.nih.gov/26950093">https://pubmed.ncbi.nlm.nih.gov/26950093</a> )	Main Reference
Si L; Chen J; Huang X; Gong H; Luo J; Hou Q; Zhou T; Lu T; Zhu J; Shanguan Y; Chen E; Gong C; Zhao Q; Jing Y; Zhao Y; Li Y; Cui L; Fan D; Lu Y; Weng Q; Wang Y; Zhan Q; Liu K; Wei X; An K; An G; Han B	Authors

Although genetic diversity has a cardinal role in domestication, abundant natural allelic variations across the rice genome that cause agronomically important differences between diverse varieties have not been fully explored. Here we implement an approach integrating genome-wide association testing with functional analysis on grain size in a diverse rice population. We report that a major quantitative trait locus, GLW7, encoding the plant-specific transcription factor OsSPL13, positively regulates cell size in the grain hull, resulting in enhanced rice grain length and yield. We determine that a tandem-repeat sequence in the 5' UTR of OsSPL13 alters its expression by affecting transcription and translation and that high expression of OsSPL13 is associated with large grains in tropical japonica rice. Further analysis indicates that the large-grain allele of GLW7 in tropical japonica rice was introgressed from indica varieties under artificial selection. Our study demonstrates that new genes can be effectively identified on the basis of genome-wide association data.	Abstract
	Additional References

## RELATED GEPHE

9 (GL3.1, GS3, GS5, GW2, OsPPKL1/qGL3, qSW5, GL7, Os07g0603400, OsSPL16) ( <a +4530^"="" and+trait='Grain+size/or+Taxon+ID="+39947^"/and+Trait=Grain+size/and+groupHaplotypes=true#gephebase-summary-title"' href="https://www.gephebase.org/search-criteria?/or+Taxon+ID=">https://www.gephebase.org/search-criteria?/or+Taxon ID="+4530^"/and+Trait=Grain size/or+Taxon ID="+39947^"/and+Trait=Grain size/and+groupHaplotypes=true#gephebase-summary-title</a> )	Related Genes
No matches found.	Related Haplotypes

## EXTERNAL LINKS

## COMMENTS

@Introgression - Non-null mutation. Large-grain haplotype in japonica varieties was probably introgressed from indica varieties