

ricePSP

comprehensive understanding and application of

rice Phase Separation-associated Proteins

Welcome to ricePSP!

HOME

PSP

FAMS

PRDP

KEYS

DOCS

LINK

A comprehensive database of rice phase separation-associated proteins

- 66,000+ annotated rice proteins [\[Download↓\]](#)
- 11,000+ predicted PSPs [\[Download↓\]](#)
- 1300+ predicted PrD proteins [\[Download↓\]](#)
- 6100+ protein family members [\[Download↓\]](#)
- 50+ homolog PSPs [\[Download↓\]](#)
- 40+ published literatures [\[Download↓\]](#)
- Help manual for ricePSP [\[Download↓\]](#)
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At the [homepage](#) of ricePSP, we provide links for downloading the whole datasets in tidy format.

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Enter search term



Query entry for [On-site Search](#) using Bing

Gene

HOME	* FDH
PSP	* FCP2
	* FCP1,OsCLE402
FAMS	* FCA,OsFCA
PRDP	* FC1,OsCAD7
KEYS	* eIF-4a,EIF4A
	* eIF-1
DOCS	* Ehd4
LINK	* Ehd3
	* Ehd2,RID1

The **PSP** menu lists functionally cloned rice genes.

Detailed information of each gene is shown as a single page.

<https://ricepsp.github.io/>

FCA,OsFCA

2022-11-15 | Categories [genes](#) | Tags [floral](#) [stamen](#) [heading date](#) [spikelet](#) [flowering time](#) [flower](#) [root](#)

• Information

- Symbol: FCA,OsFCA
- MSU: [LOC_Os09g03610](#)
- RAPdb: [Os09g0123200](#)

[Link to MSU](#)

[Link to RAPdb](#)

• PSP score

- LOC_Os09g03610.2: 0.9947
- LOC_Os09g03610.1: 0.9947
- LOC_Os09g03610.4: 0.9939
- LOC_Os09g03610.3: 0.9957

[PSP score of each isoforms](#)

• PLAAC score

- LOC_Os09g03610.2: 63.136
- LOC_Os09g03610.1: 63.136
- LOC_Os09g03610.4: 63.136
- LOC_Os09g03610.3: 63.136

[PLAAC score of each isoforms](#)

• Publication

- [Overexpression of the rFCA RNA recognition motif affects morphologies modifications in rice *Oryza sativa* L., 2007, Biosci Rep.](#)

[Link to PubMed](#)

• Genbank accession number

- [AY730687](#)

[Link to GenBank](#)

• Key message

- The FCA/FY interaction is also required for the regulation of FLC expression, a major floral repressor in Arabidopsis

[Link to PubMed](#)

• Connection

- [FCA~OsFCA, OsFY, OsFY, a Homolog of AtFY, Encodes a Protein that Can Interact with OsFCA-γ in Rice *Oryza sativa* L., FCA and FY are flowering time related genes involved in the autonomous flowering pathway in Arabidopsis](#)
- [FCA~OsFCA, OsFY, OsFY, a Homolog of AtFY, Encodes a Protein that Can Interact with OsFCA-γ in Rice *Oryza sativa* L., FCA interacts with FY to regulate the alternative processing of FCA pre-mRNA](#)

Gene Family

HOME	* BBX
PSP	* BAG
FAMS	* ATG
	* ARID
PRDP	* ARF
KEYS	* AP2
	* ALOG
DOCS	* ALBA
LINK	* AGP
	* AGO

ALBA

2022-11-15 | Categories [gene family](#)

[Link to MSU](#)

• Information

- OsAlba1, [LOC_Os01g07810](#), [Os01g0173100](#).
- OsAlba2, [LOC_Os02g10810](#), [Os02g0202500](#).
- OsAlba3, [LOC_Os03g52490](#), [Os03g0735300](#).
- OsAlba4, [LOC_Os03g06980](#), [Os03g0166000](#).
- OsAlba5, [LOC_Os04g34940](#), [Os04g0428950](#).
- OsAlba6, [LOC_Os06g40040](#), [Os06g0602600](#).
- OsAlba7, [LOC_Os09g37006](#), [Os09g0542000](#).
- OsAlba8, [LOC_Os11g06760](#), [Os11g0168300](#).
- OsAlba9, [LOC_Os12g30550](#), [Os12g0489300](#).

• PS prediction

- OsAlba1, PSP score: 0.2493
- OsAlba2, PSP score: 0.0044
- OsAlba3, PSP score: 0.9976, PLAAC score: 43.006
- OsAlba4, PSP score: 0.9976, PLAAC score: 56.152
- OsAlba5, PSP score: 0.9789
- OsAlba6, PSP score: 0.0119
- OsAlba7, PSP score: 0.9835
- OsAlba8, PSP score: 0.9873
- OsAlba9, PSP score: 0.0263

[Link to RAPdb](#)

[PSP and PLAAC scores of each protein](#)

• Publication

- [Genome-Wide Identification of the Alba Gene Family in Plants and Stress-Responsive Expression of the Rice Alba Genes.](#), 2018, [Genes](#) (Basel).

[Link to PubMed](#)

• Homologs

- Arabidopsis: ALBA4, ALBA5, ALBA6
- [ALBA proteins confer thermotolerance through stabilizing HSF messenger RNAs in cytoplasmic granules](#), 2022, [Nat Plants](#)

[Homologs in other plant species](#)

The **FAMS** menu lists 70+ rice gene families.

Detailed information of each gene family is shown as a single page.

Predicted PrD proteins

HOME	1. LOC_Os01g01470.1	LOC_Os01g01470	16.738	ONAC020
PSP	2. LOC_Os01g02160.1	LOC_Os01g02160	19.802	
FAMS	3. LOC_Os01g02860.1	LOC_Os01g02860	13.145	
PRDP	4. LOC_Os01g03490.1	LOC_Os01g03490	61.816	
KEYS	5. LOC_Os01g03610.1	LOC_Os01g03610	27.597	
DOCS	6. LOC_Os01g04650.1	LOC_Os01g04650	31.36	
LINK	7. LOC_Os01g06310.1	LOC_Os01g06310	16.297	
	8. LOC_Os01g06770.1	LOC_Os01g06770	29.452	
	9. LOC_Os01g07070.3	LOC_Os01g07070	24.967	
	10. LOC_Os01g07070.4	LOC_Os01g07070	24.967	
	11. LOC_Os01g07070.1	LOC_Os01g07070	24.967	
	12. LOC_Os01g07070.2	LOC_Os01g07070	24.967	
	13. LOC_Os01g07520.1	LOC_Os01g07520	43.697	
	14. LOC_Os01g07740.3	LOC_Os01g07740	23.02	
	15. LOC_Os01g07740.1	LOC_Os01g07740	23.02	
	16. LOC_Os01g07740.2	LOC_Os01g07740	22.819	
	17. LOC_Os01g08530.1	LOC_Os01g08530	51.741	
	18. LOC_Os01g08580.1	LOC_Os01g08580	8.94	
	19. LOC_Os01g10490.1	LOC_Os01g10490	17.234	OsGAE1

Link to functionally
cloned genes

PLAAC scores of
each protein

Link to MSU

The **PRDP** menu lists
all the proteins with
predicted Prion-like
Domains (PrD)

Keywords

HOME

PSP

FAMS

PRDP

KEYS

DOCS

LINK

homeostasis leaf shape ga cellulose cell wall dwarf cell elongation branching
endosperm auxin transport biomass seed weight manganese cell cycle sterile
floral organ nucleus phloem R protein breed
immunity innate immunity immune respons
brassinosteroid BR lamina erect lodging lod
height heading date Brassinosteroid plant h
mitosis blight cuticle flower development G
fertility GA chilling plasma m
biosynthesis methyltransferase tapetum tap
adventitious root transcription regulator he
iron Kinase leaf erectness cell proliferation B
development cutin microspore BR catabolism
wounding internode length grain filling cha

flowering time

- * Se14
- * SPL11
- * SPIN1
- * SDG724, lvp1
- * SDG701
- * ROC4
- * RFT1
- * RFL, APO2, SSC
- * RBS1
- * PNZIP, OsCRD1, YL-1
- * PHYC
- * PHYB, OsphyB
- * PHYA, OsPhyA
- * OsTrx1, SDG723
- * OsRRMh
- * OsPIL15
- * OsPIL13, OsPIL1
- * OsNAC2, OsTIL1, OMTN2, OsORE1
- * OsMADS50, OsSOC1, DTH3
- * OsMADS22
- * OsMADS15, DEP
- * OsLFL1
- * OsLF
- * OsHUB2, FRP1
- * OsHDT1, HDT701
- * OsFY
- * OsEMF2b
- * OsDof12, OsCDF1

The **KEYS** menu lists all keywords regarding phenotype description or biological process.

Each keyword links to a list of genes related to the tags.

Literatures

HOME

PSP

FAMS

PRDP

KEYS

DOCS

LINK

1. A generic approach to study the kinetics of liquid–liquid phase separation under near-native conditions, 2021, Commun Biol
2. ALBA proteins confer thermotolerance through stabilizing HSF messenger RNAs in cytoplasmic granules, 2022, Nat Plants
3. A phase-separated nuclear GBPL circuit controls immunity in plants, 2021, Nature
4. A photoregulatory mechanism of the circadian clock in Arabidopsis, 2021, Nat Plants
5. A Prion-based Thermosensor in Plants, 2020, Mol Cell
6. A prion-like domain in ELF3 functions as a thermosensor in Arabidopsis, 2020, Nature
7. A prion-like protein regulator of seed germination undergoes hydration-dependent phase separation, 2021, Cell
8. Arabidopsis AUTOPHAGY-RELATED3 (ATG3) facilitates the liquid–liquid phase separation of ATG8e to promote autophagy, 2022, Sci Bull
9. Arabidopsis cryptochrome 2 forms photobodies with TCP22 under blue light and regulates the circadian clock, 2022, Nat Commun
10. Arabidopsis FLL2 promotes liquid–liquid phase separation of polyadenylation complexes, 2019, Nature

 [Link to PubMed](#)

The **DOCS** menu lists all the literatures of reported PSPs in plants