

funRiceGenes

**Comprehensive and accurate archive of
functionally characterized rice genes
with continuous updating**

Part I

**Display of information in this database as
static web pages**

Welcome to funRiceGenes!

HOME

GENE

FAMS

KEYS

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CITE

A comprehensive database of functionally characterized rice genes

- 2800+ cloned rice genes [Download↓]
- 400+ gene families [Download↓]
- 400+ keywords [Download↓]
- 4800+ literatures [Download↓]
- 200+ interaction networks [Download↓]
- Contact: ywhzau at gmail.com

At the [homepage](#) of our database, we provide the download of the whole dataset in tidy format.

To interactively query this database, go to the following site!



The screenshot shows the funRiceGenes website header with the title "funRiceGenes" and subtitle "A comprehensive database of functionally characterized rice genes". Below the title are navigation links: "Gene", "GeneFamily", "Keyword", "Publication", "IDConversion", and "Submit". At the bottom of the header is the URL "http://funricegenes.ncpgr.cn/" in red text.

Gene	GeneFamily	Keyword	Publication	IDConversion	Submit
http://funricegenes.ncpgr.cn/					

Gene

HOME

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CITE

- * ZOS8-11
- * ZN
- * ZIP4,SPO22
- * ZFP252,RZF71
- * ZFP245
- * ZFP185
- * ZFP182,ZOS3-21
- * **ZFP179**
- * ZFP177
- * ZFP15

ZFP179

2015-01-20 | Categories [genes](#) | Tags [salt stress](#) [ABA](#) [seedling](#) [salt tolerance](#) [salt](#) [oxidative](#)

• Information

- Symbol: ZFP179
- MSU: [LOC_Os01g62190](#)
- RAPdb: [Os01g0839100](#)

[Link to MSU](#)

[Link to RAPdb](#)

• Publication

- Functional analysis of a novel Cys2/His2-type zinc finger protein involved in salt tolerance in rice, 2010, J Exp Bot.
- Salt-responsive ERF1 regulates reactive oxygen species-dependent signaling during the initial response to salt stress in rice, 2013, Plant Cell.

[Link to PubMed](#)

• Genbank accession number

- [AK108227](#)

[Link to GenBank](#)

• Key message

- The ZFP179 transgenic rice exhibited significantly increased tolerance to oxidative stress, the reactive oxygen species (ROS)-scavenging ability, and expression levels of a number of stress-related genes, including OsDREB2A, OsP5CS OsProT, and OsLea3 under salt stress
- Our studies suggest that ZFP179 plays a crucial role in the plant response to salt stress, and is useful in developing transgenic crops with enhanced tolerance to salt stress
- The real-time RT-PCR analysis showed that ZFP179 was highly expressed in immature spikes, and markedly induced in the seedlings by NaCl, PEG 6000, and ABA treatments
- Through microarray analysis, a salt-responsive zinc finger protein gene ZFP179 was identified and subsequently cloned from rice seedlings
- Overexpression of ZFP179 in rice increased salt tolerance and the transgenic seedlings showed hypersensitivity to exogenous ABA

[Link to PubMed](#)

• Connection

- **OsProT~ProT, ZFP179, Functional analysis of a novel Cys2/His2-type zinc finger protein involved in salt tolerance in rice**, The ZFP179 transgenic rice exhibited significantly increased tolerance to oxidative stress, the

The **GENE** menu lists 2800+ cloned rice genes.

The detailed information of a gene is shown as a single page.

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

Gene Family

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- * ZTL
- * ZRT_and_IRT_like_proteins
- * ZIFL
- * YUCCA
- * YSL
- * XYLP
- * XTH
- * XHS
- * XBOS
- * WRKY

The FAMS menu lists 400+ rice gene families.

The detailed information of a gene family is shown as a single page.

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

XYLP

2015-01-20 | Categories [gene family](#)

[Link to MSU](#)

[Link to RAPdb](#)

Information

- OsLTPL1, LOC_Os03g26820, Os03g0385400.
- OsXYLP2, LOC_Os03g26800, Os03g0385100.
- OsXYLP3, LOC_Os07g30590, Os07g0489000.
- OsXYLP4, LOC_Os07g43290, Os07g0625800.
- OsXYLP5, LOC_Os03g09230, Os03g0192600.
- OsXYLP6, LOC_Os03g20760, Os03g0323900.
- OsXYLP7, LOC_Os05g41030, Os05g0489200.
- OsXYLP8, LOC_Os01g59870, Os01g0814100.
- OsXYLP9, LOC_Os07g07790, Os07g0174400.
- OsXYLP10, LOC_Os07g07860, Os07g0174900.
- OsXYLP11, LOC_Os03g57990, Os03g0794000.
- OsXYLP12, LOC_Os07g07870, Os07g0175000.
- OsXYLP13, LOC_Os03g57970, Os03g0793800.
- OsXYLP14, LOC_Os07g07930, Os07g0175600.
- OsXYLP15, LOC_Os04g38840, Os04g0462200.
- OsXYLP16, LOC_Os07g09970, Os07g0198300.
- OsXYLP17, LOC_Os03g58940, Os03g0804200.
- OsXYLP18, LOC_Os03g07100, Os03g0167000.
- OsXYLP19, LOC_Os06g47200, Os06g0686400.
- OsXYLP20, LOC_Os03g46150, Os03g0664400.
- OsXYLP21, LOC_Os08g42040, Os08g0532800.

Publication

- Identification, characterization, and transcription analysis of xylogen-like arabinogalactan proteins in rice *Oryza sativa* L., 2014, BMC Plant Biol.

[Link to PubMed](#)

Keywords

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nitrogen leaf leaf senescence transcription factor early leaf senescence
xylem vascular bundle seedlings acetylcholinesterase shoot gravitropism
gravitropic response stem root leaf development shoot resistance flower
pollen panicle spikelet grain tiller anther sterility seedling chloroplast
seedling death domestication development awn grains per panicle grain
number grain length mitochondria sheath submergence starch temperature
ATPase alkaline tolerance defense oxidative stress
alkaline stress seed drought salinity salt seed germ
tolerance potassium cold tolerance oxidative growth
stress ABA ethylene yield insect jasmonate grain yield
defense response vegetative drought tolerance crown root elongation
root development auxin cytokinin crown root elongation

grain length

* TGW6

* RDD1

* PGL2,OsBUL1

* PGL1

* OsSGL

* OsPPKL3

* OsPPKL2

* GW7,GL7,SLG7

* GS3

* GL3.1,qGL3-1,qGL3,OsPPKL1

* DEP1,DN1,qPE9-1,OsDEP1

* APG,OsPIL16

* AL8,RAE2,GAD1

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

Each keyword links to a list of genes related to this keyword.

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

News

HOME

- 2017/Mar/1 fix info

GENE

- 2017/Mar/1 add new accessions for OsGPCR
- 2017/Mar/1 add new pub.

FAMS

- 2017/Mar/1 fix info

KEYS

- 2017/Feb/27 fix info

NEWS

- 2017/Feb/27 fix info
- 2017/Feb/27 fix info

DOCS

- 2017/Feb/27 fix info

CITE

- 2017/Feb/27 fix info
- 2017/Feb/27 fix info
- 2017/Feb/27 fix info
- 2017/Feb/27 fix info
- 2017/Feb/27 fix info
- 2017/Feb/27 add new info for gene: OsLBD3-7
- 2017/Feb/27 add new pub.
- 2017/Feb/27 PLA3 == OsLBD3-7

The **NEWS** menu shows the updating information of this database.

Literatures

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1. Cloning of a cDNA encoding an importin-alpha and down-regulation of the gene by light in rice leaves, 1998, Gene.
2. Molecular cloning of a novel importin alpha homologue from rice, by which constitutive photomorphogenic 1 COP1 nuclear localization signal NLS-protein is preferentially nuclear imported, 2001, J Biol Chem.
3. Mutations of genes in synthesis of the carotenoid precursors of ABA lead to pre-harvest sprouting and photo-oxidation in rice, 2008, Plant J.
4. A pair of orthologs of a leucine-rich repeat receptor kinase-like disease resistance gene family regulates rice response to raised temperature, 2011, BMC Plant Biol.
5. The ATP-binding cassette transporter OsABCG15 is required for anther development and pollen fertility in rice, 2013, J Integr Plant Biol.
6. ABCG15 encodes an ABC transporter protein, and is essential for post-meiotic anther and pollen exine development in rice, 2013, Plant Cell Physiol.

The **DOCS** menu lists all the literatures archived in this database.



[Link to PubMed](#)

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To interactively query this database, go to the following site!



At the [homepage](#) of our database, we provide a link to a website allowing interactive query of this database.

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

Part II

Interactive query of this database

Gene

GeneFamily

Keyword

Publication

IDConversion

Submit

* Query with a gene symbol or a genomic locus

☒ MSU Locus ☐ RAPdb Locus ☐ Gene Symbol

LOC_Os07g15770

Detail information of a gene
are shown in different tables

Information Reference Accession Expression Keyword Connection

1

Symbol	RAPdb	MSU
Ghd7	Os07g0261200	LOC_Os07g15770

Showing 1 to 1 of 1 entries

Link to RAPdb

Link to MSU

The **Gene** menu allows query of 2800+ genes using a MSU/RAPdb genomic locus or a gene symbol.

Gene

GeneFamily

Keyword

Publication

IDConversion

Submit

* Query with a gene symbol or a genomic locus ?

☐ MSU Locus ☐ RAPdb Locus ☒ Gene Symbol

RCN1

Information

Reference

Detail information of a gene
are shown in different tables

1

Symbol

RAPdb

MSU

RCN1

[Os11g0152500](#)

[LOC_Os11g05470](#)


Showing 1 to 1 of 1 entries

Link to RAPdb

Link to MSU

The **GeneFamily** menu allows query of 5000+ gene family members using a MSU/RAPdb genomic locus or a gene symbol.

[Gene](#)[GeneFamily](#)[Keyword](#)[Publication](#)[IDConversion](#)[Submit](#)

* Query with a keyword characterizing agronomic trait of rice 

[Information](#)

Symbol	RAPdb	MSU	Title
brd2 DIM DWF1 LHDD10	Os10g0397400	LOC_Os10g25780	Brassinosteroid (BR) biosynthetic gene lhdd10 controls late heading and
CKI EL1 Hd16	Os03g0793500	LOC_Os03g57940	Genetic interactions involved in the inhibition of heading by heading date

Showing 1 to 2 of 149 entries

 Link to RAPdb

 Link to MSU

 Link to PubMed

The [Keyword](#) menu allows query of the database with keywords regarding phenotype description or biological process.

Gene GeneFamily Keyword **Publication** IDConversion Submit

* Query with any word concerning rice functional genomic studies

heading date

Result

The **Publication** menu allows query of the titles and abstracts of all publications archived in this database with any word.

1

Title	Year	Journal	Affiliation	Abstract
Association of functional nucleotide polymorphisms at DTH2 with the northward expansion of rice cultivation in Asia	2013	Proc Natl Acad Sci U S A	National Key Laboratory for Crop Genetics and Germplasm Enhancement, Jiangsu Plant Gene Engineering Research Center, Nanjing	Flowering time (i.e., heading date in crops) is an important ecological trait that determines growing seasons and regional adaptability of plants to specific natural environments. Rice (<i>Oryza sativa</i> L.) is a short-day plant that originated in the tropics. Increasing evidence suggests that the northward expansion of cultivated rice was accompanied by human selection of the heading date. We report here the molecular cloning and characterization of DTH2 (for Days to heading on chromosome 2), a major effect quantitative trait locus that promotes heading under LD conditions. We show that DTH2 encodes a CONSTANS-like protein that promotes heading by inducing the florigen genes <i>Heading date 3a</i> and <i>RICE FLOWERING LOCUS D1</i> , and it acts independently of the known floral integrators <i>Heading date 1</i> and <i>Early heading date 1</i> . Moreover, association analysis and transgenic experiments

Gene

GeneFamily

Keyword

Publication

IDConversion

Submit

* Convert between MSU genomic locus and RAPdb genomic locus ?

☒ RAPdb to MSU ☐ MSU to RAPdb

Os02g0677300

Result

4

↕ MSU

RAPdb

Os02g0677300

LOC_Os02g45450

Showing 1 to 1 of 1 entries

The [IDConversion](#) menu provides a tool to convert between a MSU genomic locus and a RAPdb genomic locus.

<http://funricegenes.ncpgr.cn/>

Gene

GeneFamily

Keyword

Publication

IDConversion

Submit

* Submit a new Gene or add new information for an existing gene

Gene symbol

MSU genomic locus

ID

Password

To submit a new publication, fill in the 'Pubmed ID' cell. To submit a new publication for an existing gene, fill in the 'Gene symbol' and 'Pubmed ID' cells. To submit a new gene, fill in all the four cells.

Submit

Clear

* Submit new phenotype and expression figures

Gene symbol

Password

Phenotype Figure

Expression Figure

选择文件

未选择任何文件

选择文件

未选择任何文件

Submit

Clear

Our database provides tools allowing submission of new information.

Currently, only our team members have permissions to submit new information.

<http://funricegenes.ncpgr.cn/>

Gene

GeneFamily

Keyword

Publication

IDConversion

Submit



Link to <https://funricegenes.github.io/>

Have a nice experience in **funRiceGenes** database !