Welcome to the Literature Tutorial

Literature searches are a good option for beginning your Gramene search.

This tutorial will describe how to search for citations on rice, as well as other species in this database.

Literature search results provide links to publication sources and other Gramene databases where available.

Tutorial Tips

If you are viewing this tutorial with Adobe Acrobat Reader, click the "bookmarks" on the left hand side of the Reader for easier navigation.

Note! Although we continually work to make Gramene compatible with all browsers, there are problems with some browser versions. If you're having difficulty viewing Gramene, try using a different browser. Please report any problems with browsers through Gramene Feedback.

Gramene Home Page

www.gramene.org

GRAMENE *Home*

Search | Genomes | Species | Download | Resources | About | Help

Feedba

A Resource for Comparative Grass Genomics

Release # 26

September 2007

Genomes-Ensembl
Maps-CMap
Markers
QTL
Diversity
Genes
Proteins
Pathways
Ontologies
Literature
Sequences-BL
All-Gramene

News

- October 15-17, 2007 - 5th International Symposium of Rice Functional Genomics in Tsukuba, Japan
- NEW June 2007, V 25 release notes.
- NEW Gramene July/August Newsletter

Have Questions...?

- NEW Quick Search Help
- Tutorials - See what you can do and how to do it.
- Ask questions through Feedback or Email.
- See FAQ.

Quick Start

genomes for *Oryza Sativa, Oryza rufipogon*, Maize & Arabidopsis; Look for rice/maize n GrameneMart; Search for sequence alignment with BLAST; search by Gene

ProSite or Browse by Gene Ontology using GO Slim.

genetic or physical maps for Wild Rice (Oryza sp. from OMAP), Rice, Maize, Wheat, er grasses, or use the Comparative Map Viewer (CMap) to compare maps of different

Click here to open literature search

c.), DNA Probes (Primers, Overgos, etc.), Genomic Region ESTs, etc.). Search by species such as Sorghum, by type such a Rice SSR. Use the Simple Sequence Repeat Identification Tool (S

TRAITS: Search the s or QTL database for important phenotype-releated loci such as Rice Genes, Rice QTL, Maize QTL. Don't f to explore traits in Ontologies.

GENETIC DIVE TY: Search for SNP and SSR allelic variation on loci of rice, maize, and wheat germplasms.

BIOCHEMICAL PATHWAYS: Search for ALL the rice pathways on starch biosynthesis or get an overview of the metabolic network. Compare rice and Arabidopsis pathway datasets.

LITERATURE: Search the literature for your friends and topics of interest.

Visit with us

- Sept 21-22 Agricultu Ontology Service (A Workshop
- Jan 12-16, 2008 PA

Gramene Tip

Even experienced user learn something new view the Gramene Tut

- **Browse All Ti**

Gramene is a curated, source, data resourc comparative genome a in the grasses. Our go facilitate the study of species homolog relationships using infor derived from public pro involved in genomic an sequencing, protein str and function analysis, and physical mappi interpretation of bioche

See Navigation_Tutorial for info on navigating Gramene

Module Home-Page layout

Module home pages provide the following information:

- Searching/Browsing – links to different types of searches.
- Other Tools – if applicable, links to different tools used in this module.
- Help – links to help pages, tutorials, release notes, FAQ and other helpful documentation.
- Download – information on where to download the database.
- Feedback – How to contact Gramene
- Acknowledgements – Other programs that contribute to this data.
- Quicklinks and external links – when appropriate these links are provided.

Literature Home Page

Literature Home | Rice Genetics Newsletters | Tutorial | FAQs

Gramene Literature Database

Find: [_____] 🔍

Links to FAQ for Literature

Links to RGN volumes 1-22

2. Click here to conduct search

The literature database at Gramene, [...] ccess to citations on rice (oryza sp.) in [...] and some additional references cited as cross references [...] references carry a cross reference t [...] ce such as PubMed or the Journal's web [...] mplete citation.

Whe [...] an association to the Gramene D [...] h as protein / genes & alleles (mutants) / QTLs / maps / markers etc. It also links bac [...]

Links to Literature tutorial

1. Enter search term here: Keyword, author, title. Titles must be exactly the same as they are in the database, therefore it is usually better to search by key words or title fragments.

Lit [...]

Home Page:	Introduction and Quick sea [...] (e.g. examples).	for wild card search
Rice Genetics Newsletter:	Browse through RGN issue [...] search.	" as the source to

Help

Help	• Enter one or more sear [...] • Enter author names as "wessler sr", "wessler s", or "wessler". Initials are optional. • Enter journal titles.
Tutorial	More in-depth than the help pages, use the tutorial for an exaple of using the database, see how it integrates other datasets, and get tips to increase your data search efficiency.
FAQ	Frequently Asked Questions - see what questions users have asked, and get the developers answers.

Literature Search Results

There are 28 results for this search, of which 25 are shown

Find: Xa21 🔍

There are 2 pages of results, and clicking on "next" will open the next page.

Items 1 to 25 of 28.   Page [1] of 2. | Next

- Wang-Y-S, Pi-L-Y, Chen-X, Chakrabarty-P-K, Jiang-J, Liu-G-Z, Li-L, Benny-U, Oard-J, Ronald-P-C, Song-W-Y
  "Rice XA21 Binding Protein 3 Is a Ubiquitin Ligase Required for Full Xa21-Mediated Disease Resistance" [View Reference]
  The Plant cell, 2006 (Reference ID 11443)

- Wang-G-L, Lu-G, Zhou-B, Jantasuriyarat-C
  "Isolation and characterization of novel defense response genes involved in compatible and incompatible interaction ... rice and Magnaporthe grisea" [View Reference]
  Theor Appl Genet, 2004, vol. 108, pp. 525-534 (Reference ID 9644)

- Chen-X, Zhu-L, Li-X, Zhang-D, Zhai-W, Zhu-X, Chen
  "Analysis of T-DNA- Xa21 loci and bacterial blight resist... effects of the transgene Xa21 in transgenic rice..."
  Theoretical and applied genetics, 2004 (Reference ID 8224)

Click here for more information on this article. *(see next slide)*

- Ronald-P-C, Song-W-Y, Pi-L-Y, Liu-G-Z, Walker-J-C
  "Biochemical characterization of the kinase domain of the rice disease ... ceptor-like kinase XA21..."
  The Journal of biological chemistry, 2002 (Reference ID 6579)

- Zhu-L-H, Lu-R-L, Zhai-W-X, Xie-B, Zhu-X-F
  "Genome analysis of transgenic homozygous line "Minghui 63-Xa21"" [
  Chinese journal of biotechnology, 2002, vol. 18, pp. 102-105 (Reference

- Khush-G-S, Huang-N, Singh-S, Brar-D-S, Li-Z, Sidhu-J-S, Vikal-Y, Dhali
  "Pyramiding three bacterial blight resistance genes (xa5, Xa13 and Xa21 ... 06." [View Reference]
  Theor. Appl. Genet., 2001, vol. 102, pp. 1011-1015 (Reference ID 9765)

Clicking on author's name lets you view other articles in Gramene by that author.

- Wang-G, Zhu-L, Li-X, Zhai-W, Wang-W, Zheng-X, Zhou-Y, Zhan-Q
  "Breeding bacterial blight-resistant hybrid rice with the cloned bacterial blight resistance gene Xa21." [View Reference]
  Molecular Breeding, 2001, vol. 8, pp. 285-293 (Reference ID 10755)

9/24/07   6

View Reference

Reference "Rice XA21 Binding Protein 3 Is a Ubiquitin Ligase Required for Full Xa21-Mediated Disease Resistance"

Reference ID	11443
Title	Rice XA21 Binding Protein 3 Is a Ubiquitin ~~Ligase Required for Full Xa21-Mediated~~
Source	The Plant cell, 2006, vol. , pp. -
Authors (11)	Wang-Y-S Pi-L-Y Chen-X Chakrabarty-P-K Jiang-J Liu-G-Z Li-L Benny-U Oard-J Ronald-P-C Song-W-Y
Abstract	XA21 is a receptor-like kinase protein in rice (Oryza sativa) that confers gene-for-gene resistance to specific races of the causal agent of bacterial blight disease, Xanthomonas oryzae pv oryzae. We identified XA21 binding protein 3 (XB3), an E3 ubiquitin ligase, as a substrate for the XA21 Ser and Thr kinase. The interaction between XB3 and the kinase domain of XA21 has been shown in yeast and in vitro, and the physical association between XB3 and XA21 in vivo has also been confirmed by coimmunoprecipitation assays. XB3 contains an ankyrin repeat domain and a RING finger motif that is sufficient for its interaction with the kinase domain of XA21 and for its E3 ubiquitin ligase activity, respectively. Transgenic plants with reduced expression of the Xb3 gene are compromised in resistance to the avirulent race of X. oryzae pv oryzae. Furthermore, reduced levels of Xb3 lead to decreased levels of the XA21 protein. These results indicate that Xb3 is necessary for full accumulation of the XA21 protein and for Xa21-mediated resistance.

⊞ **Database Cross-References (1)**

⊞ **Proteins (2)**

Markers (0)

QTL (0)

⊞ **Genes (1)**

Map Sets (0)

Diversity Experiments (0)

> Gramene's ID for that reference

> Associations of Gramene Data to this article. Click a category to expand it's window and link to that database. (*see next slide*)

Links to Gramene Data

Proteins (2)

- Oryza sativa O24435 (Not available): Xanthomonas oryzae pv. oryzae resistance-21
- Oryza sativa Q8LLW2 (Xb3): Xa21-binding protein 3

Markers (0)

QTL (0)

Genes (1)

- Oryza sativa GR:0101175 (Xb3): Xa21-binding protein 3

Map Sets (0)

Diversity Experiments (0)

When a reference article shows an association to Gramene DB objects they will be linked here

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Gene Home | Search | Submit | Help | Tutorial | FAQ | Release Notes

Browse Ontology Database by: Trait | Plant Structure | Growth Stage

| Find: | | In: | Gene Symbol & Name | Type: | All Gene Types | Species: | All Species | | Phenot |

E.g., d1, dwarf-1, GR:0060184, flower*, *tillering stage* Or view

Oryza sativa gene "Xb3" (GR:0101175)

Species	Oryza sativa (Rice) [GR_tax:013681]
Accession	GR:0101175
Gene Symbol	Xb3
Gene Name	Xa21-binding protein 3
Synonyms (1)	Ubiquitin ligase
E.C. Numbers (0)	
Chromosome No.	5
Gene Type	CDS (Protein coding)
Has Phenotype	yes
Description	It encodes for a ubiquitin ligase that binds and stabilizes the Xa21 (GR:0061029) protein. This interaction is required to confer full xa21-mediated resistance to Xanthomonas oryzae pv. oryzae race 6.

Alleles (0)

Germplasm (0)

Sequences (2)

Gene-To-Gene Interactions (0)

Gene Interactions (1)

Map Positions (1)

Gene Map Positions (1)

Protein Home | Advanced Search | Search by Pfam or PROSITE | Browse by GO Slim | Documents | Tutorial | FAQ | Help

Find: Q8LLW2 In: Name Species: Oryza (rice)

E.g., P93436, *alcohol*

Oryza sativa protein "Q8LLW2" (Xa21-binding protein 3)

Accession	Q8LLW2
Species	Oryza sativa [GR_tax:013681]
Name	Xa21-binding protein 3
Symbol	Xb3
Synonyms (2)	Receptor-like kinase Xa21-binding protein 3 Ubiquitin ligase
E.C. Numbers (0)	None
Gene Names (1)	Xb3 (Xa21-binding protein 3)
Organelle	Not available
Best Hits To TIGR Rice Gene Models (1)	LOC_Os05g02130 [Click here to generate a BLASTP query]
Source	TREMBL
GenBank Accessions (1)	AAK58690.1
SwissProt Accession	Q8LLW2
Cultivar	Taipei 309 (GRIN , IRIS)
Comment	It encodes for a ubiquitin ligase that binds and stabilizes the Xa21 (GR:0061029) prot is required to confer full xa21-mediated resistance to Xanthomonas oryzae pv. oryzae Ankyrin repeats of XB3 are sufficient to bind XA21. (Imported from Gene GR:0101175

Associated Ontologies (11)

Keywords (1)

Similarity to Other Proteins (22)

Protein Features (4)

FAQ

Use Feedback to submit a question to Gramene

Search FAQ at the top of the page

Click on a question to open it's answer

Contact Gramene

GRAMENE *A Resource for Comparative Grass Genomics*

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Use the feedback button, located at the top of every page, to provide feedback or to ask questions about Gramene.

or
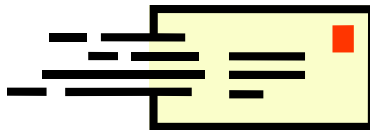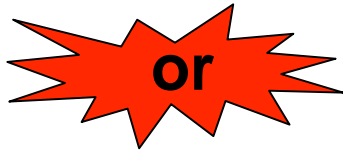
Email Gramene at gramene@gramene.org