

GENOME DATABASE FOR ROSACEAE



Resources for Rosaceae Research Discovery and Crop Improvement

2024

Welcome to the October 2024 issue of the GDR newsletter. This newsletter is issued to inform users about new or updated data and tools in GDR and provide a summary from the quarterly Rosaceae Executive Committee (RosEXEC) meetings.

Summary of RosEXEC meeting!

The summary of the fourth RosEXEC meeting of 2024 is available on page 3! Make sure to check it out to learn new things happening in Rosaceae Community!

GDR/BIMS Outreach

- [Workshop and Presentations at ASHS 2024](#)
- [BIMS workshop at 13th IVS](#)

New tutorials available

Two short tutorials, “[How cross-search gene/mRNA names](#)” and “[How to search markers by trait and view genome alignment](#)” were made available. See [the manual page](#) or our [YouTube channel](#)

New GWAS, QTL, map, marker, and phenotype data

We have added new GWAS, QTL, map, marker, and phenotype data from **25 publications**: 12 from *Fragaria*, 12 from *Malus*, and 1 from *Prunus*. The *Prunus* publication is mostly up-to-date, while our curation efforts this quarter focused on *Malus* and *Fragaria* papers. We will continue curating *Malus* publications before moving on to *Pyrus*, *Rubus*, and *Rosa*.

- You can view the curated list of papers in these two news items.
 - [New GWAS, QTL, marker, and map data are available \(10/24\)](#)
 - [New GWAS, QTL, marker, map and phenotype data are available \(09/24\)](#)
- Search data in [QTL/GWAS Search](#), [Marker Search](#), [MapViewer](#), and [JBrowse](#).

New Genome Data/Functional Analysis

- [Malus coronaria v1.0](#)
- [Malus ioensis v1.0](#)

New PathwayCyc Databases

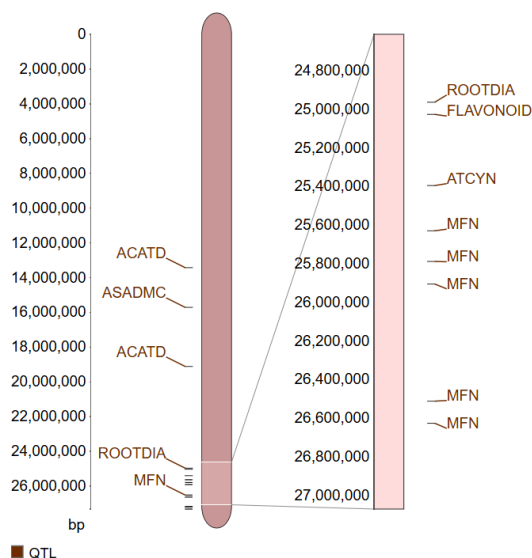
- [Prunus dulcis Texas Genome v2.0](#)
- [Pyrus communis d'Anjou Genome v2.3.a1](#)

New JBrowse tracks for QTLs, GWAS, and Markers

New [JBrowse](#) tracks are available for 4 *Rosa*, 4 *Rubus*, and 4 *Pyrus* genomes listed in this [news item](#).

Updated Features

- Genomes with aligned QTLs displayed in [MapViewer](#).
- Shown below are Fvb1-1 of genome *Fragaria x ananassa* Camarosa Genome



- Search genes using mRNA names and vice versa (see next page for details)

New option in Gene and Transcript Search

Do you have gene names for a genome, but need the mRNA names? Or do you have mRNA names and need the gene names? We have a solution for you!

In the [Gene and Transcript Search](#), you can now cross-search using the gene or mRNA and retrieve data on the other. Let's say you have a list of differentially expressed genes and want to retrieve the functional annotations (which are associated with the mRNA in GDR), you can now search with the list of gene names and no longer need to convert the gene names to mRNA names.

Data Type

14,430,873 Gene/Transcript. *Note: actual rows in downloaded file depend on the selected fields.*

Query

Sequence Type

Genome

Genome Name

Arabidopsis thaliana Araport11
Cerasus x kanzakura cv. 'Atami-zakura' Whole Genome v1.0 Assembly & Annotation
Cerasus x kanzakura cv. 'Kawazu-zakura' Whole Genome v1.0 Assembly & Annotation

Chromosome/Scaffold

Start

Stop


Transcriptome/Other Dataset

Gene/Transcript name

Name

File Upload No file chosen

Provide names in a file. Separate each name by a new line.

Also search associated mRNA/gene if the name in uploaded file matches a gene/mRNA 

Functional Annotation

Downloadable Fields

- All Fields
- Name
- Unique Name
- Organism
- Type
- Genome/Transcriptome
- Chromosome/Scaffold
- Start position
- Stop position
- Location
- BLAST
- InterPro
- GO Term
- GO Accession
- GenBank Keyword

Simply type the gene or mRNA in the box under the Gene/Transcript name section or upload a file of names and check the box. Then select the data you want to view or download in the right-hand box. You can also download a FASTA file of the sequences using the 'Sequence retrieval' option. You can watch our [video tutorial](#) on YouTube for more details.

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RosEXEC: Rosaceae Genomics, Genetics, and Breeding Executive Committee

www.rosaceae.org/community/us_rosexec

Hello! The third 2024 quarterly meeting of RosEXEC (Rosaceae Genomics Genetics and Breeding Executive Committee) took place virtually on Tuesday, October 14th. Here's what happened:

RosEXEC Membership and Elections

Many of our members will be rotating off the committee in January 2025. In order to maintain sufficient membership, a new bylaw was proposed stipulating that no more than 1/3 of the RosEXEC membership rotate off in any given year. Membership terms for some current members were extended by 1 year to avoid going over the 1/3 threshold. Even with these extensions, we have 4 open positions for U.S.-based members and 3 open positions for International Liaisons. We especially need International representation from Africa, Australia or New Zealand, and Europe. Per McCord (RosEXEC Vice-chair) has sent out a request for nominations, but more are needed. Please reach out to him (email below to nominate someone. Elections will be held in November followed by a separate election in December for a new RosEXEC Secretary.

GDR Updates & Activities

In Q3 of 2024, the GDR team was hard at work adding a range of new data. This includes 5 new genomes (3 Malus and 2 Fragaria) and GWAS, QTL, marker, map and phenotype data from 15 publications (12 Fragaria and 3 Malus). New Cyc pathway databases were added for almond and pear genomes. Primer-based markers, QTLs, and MTLs are aligned to representative genomes by the GDR team and available to view as new JBrowse tracks and in search pages. The GDR team is also working on a range of outreach activities, including producing training videos, providing workshops, manuscript preparation, and developing submission standards for newer data types. GDR had a workshop on BIMS at NAPB, and a database workshop and 5 individual presentations at ASHS. These activities are crucial to maintain compliance with U.S. government requirements that data generated from publicly funded projects be made available in a timely manner.

Challenge/Opportunity Statements for RGC Workshop Development

RosEXEC members continue to develop 1-page statements regarding the specific challenges/opportunities in Rosaceae genomics. These are intended to be summaries of the current status of important topics which can be used to develop effective workshops at the Rosaceae Genomics Conference being held next May. Topics include:

- Data curation/database coordination and financial sustainability
- Genotyping platforms
- Pangenomics
- Phenomics
- Transcriptomics/data visualization

Upcoming Events/Activities

The next RosEXEC meeting will be held at the Plant and Animal Genome conference (PAG 32) in January 2025. A virtual option will also be available. The next Rosaceae Genomics Conference (RGC12) will be held in Costa Brava, Spain 6-9 May 2025. RosEXEC is working to get financial support from NSF for travel assistance for up to 8 early-career scientists from underrepresented groups or universities serving underrepresented/minority groups to attend RGC12 and stay in Spain for a week as an internship.

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