GENOME DATABASE FOR ROSACEAE

Resources for Rosaceae Research Discovery and Crop Improvement

April 2023

Welcome to the April 2023 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 meetings!

Our newsletter now provides a summary from the quarterly RosEXEC meetings! Check page 3!

New tutorial videos available

Two short tutorials, "**Learn how to view genomes linked to genetic maps**!" and "**Learn how to search markers**!" were made available. See **the manual page or our YouTube channel for more.**

GDR Workshop at RGC11!

We had a successful GDR workshop at **RGC11** (13-16 March 2023, Nelson, NZ)! Thank you for those who participated and gave us very useful feedback on the survey! The presentations for each section of workshop including the use case demo is available at the presentations page in GDR.

New Genome Data/Functional Analysis

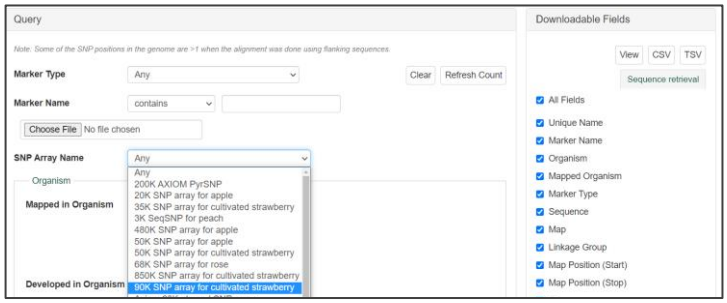
- Whole genome data for **the Pacific crabapple (Malus fusca) genome is available!**
- **GDR Functional Analysis** (InterProScan, Protein Homologies, and Synteny Analysis) **added to** the **genome:**
  - Prunus cerasus cv. 'Montmorency' Whole Genome v1.0
  - Fragaria x ananassa Yanli Genome v1.0
  - Potentilla anserina Genome v1.0

Other Tools Updated

- MapViewer updated to add a toolbar for selecting colors for GWAS display
- MegaSearch updated to query search records with empty fields(e.g., for searching genes without any functional annotation)

New SNP array, QTL, map, haplotype data

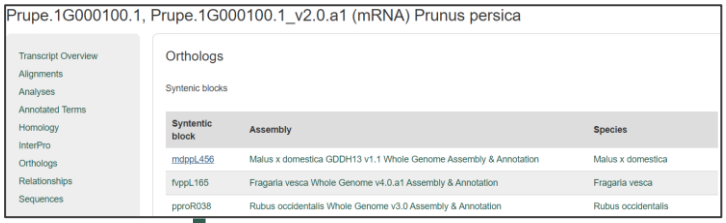
New data for Axiom 60K SNP array for almond and QTL, marker, map, and haplotype data available for apple. View data in QTL/GWAS Search, Haplotype Block Search, Marker Search, and in MapViewer.



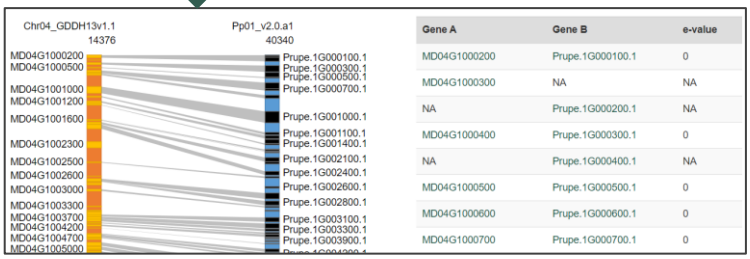
Access almond 60K SNP array data from Marker Search

Ortholog page in gene/mRNA page

Ortholog tab in mRNA/gene pages lists syntenic blocks, orthologs, and gene/transcripts that represent the same gene in other genome assemblies.



Choose a synteny block to view



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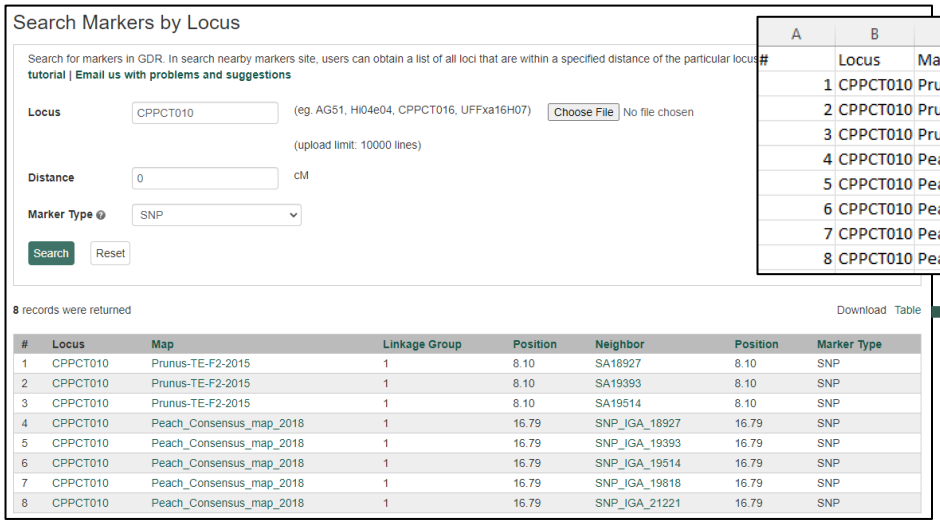
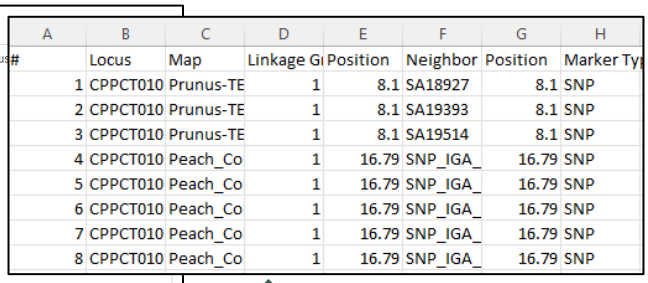
Featured Data and Tools

Search Markers by Locus

Did you know?

You can search for markers near the marker locus of your interest? For example, you can search SNPs that are near an SSR or search for SSRs near a SNP of interest.



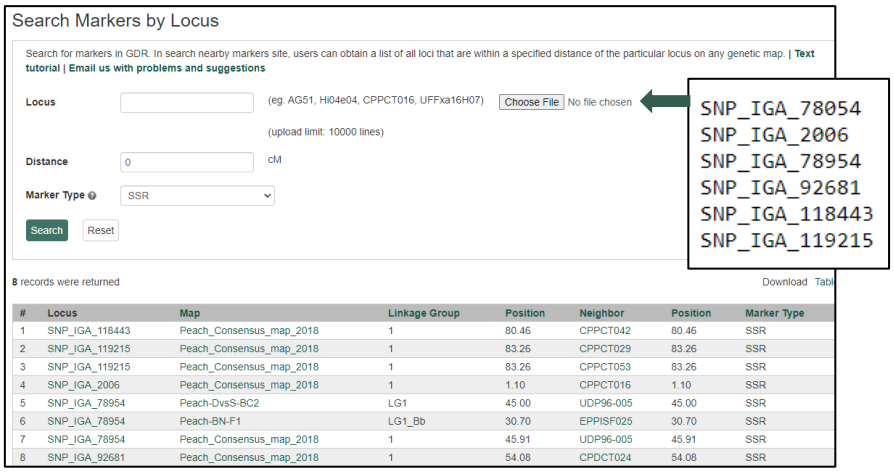


#	Locus	Map	Linkage Gi	Position	Neighbor	Position	Marker Ty
1	CPPCT010	Prunus-TE	1	8.1	SA18927	8.1	SNP
2	CPPCT010	Prunus-TE	1	8.1	SA19393	8.1	SNP
3	CPPCT010	Prunus-TE	1	8.1	SA19514	8.1	SNP
4	CPPCT010	Peach_Co	1	16.79	SNP_IGA_	16.79	SNP
5	CPPCT010	Peach_Co	1	16.79	SNP_IGA_	16.79	SNP
6	CPPCT010	Peach_Co	1	16.79	SNP_IGA_	16.79	SNP
7	CPPCT010	Peach_Co	1	16.79	SNP_IGA_	16.79	SNP
8	CPPCT010	Peach_Co	1	16.79	SNP_IGA_	16.79	SNP

downloaded file

Search for SNPs near a specific SSR marker

Search for SSRs near a set of SNPs by uploading a file with SNP names



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Funded by: USDA SCRI and NRSP10 (National Research Project), and Washington State University

RosEXEC: Rosaceae Genomics, Genetics, and Breeding Executive Committee

www.rosaceae.org/community/us_rosexec

Hello everyone! The Q2 U.S. RosEXEC meeting took place on April 19th, 2023. Here's a quick overview!

Administration

- RosEXEC will hold an election to update membership in Fall 2023. Nominations begin September 5, 2023! Self-nominations are welcome! We expect to replace 5 domestic positions and 2 international positions. Domestic RosEXEC members serve for 3 years while international members serve for 2 years. You will be hearing about this in the ASHS and NAPB meetings and via the GDR mailing list!
- RosIGI needs some love. The meeting planned for RGC11 was cancelled because of a lack of speakers. If you are interested in being a virtual speaker to enable this meeting, feel free to contact Sara Montanari.
- The next RosEXEC meeting will occur on July 13th, 2023. If you have RosEXEC-GDR business that needs to be addressed, do not hesitate to contact standing officers.

GDR insights

- GDR has been working on spreading our voice. You can find all the outreach presentations provided by the group in its newsletter. We encourage you to take a look!
- GDR is a great resource, and we want it forever! So, GDR is planning for its sustainability in the long term. GDR is exploring partnerships with Rosaceae researchers to include some funds in their proposals for GDR support, USDA, and/or through congressional appropriations. Do you have creative ideas on how to ensure the sustainability of GDR? Please contact Dorrie Main with your ideas and approaches.
- Data matters! Ensure that your data is *FAIR* - *F*indable, *A*ccessible, *I*nteroperable, and *R*eusable - with the help of GDR! If your group has released new data or is planning to publish existing datasets soon, please let Sook Jung & Dorrie Main know. Your data has a home in GDR!

Future plans

- RGC11 was a huge success: excellent organization and science, great networking, and collaboration opportunities, as well as an energetic group of early-career scientists joining the Rosaceae community. To enhance that, RosEXEC is considering pursuing funding (USDA and NSF) to enable attendance of early career scientists for RGC12 in Barcelona in 2025!

Engagement with the Rosaceae community (What can you do? / How can you get involved?)

- Keep in mind, genotyping arrays (20K, 8K, and 6+9K SNP arrays for apple, peach, and cherry, respectively) will no longer be available. As a community, it is best that we come up with a set of solutions together. David Chagné in New Zealand has proposed to use a cost-effective multi-species array. Luca Bianco and Michela Troggio have funds for developing two multispecies arrays at FMACH, Italy. Nahla Bassil has also suggested the DArT platforms. Do you have other ideas for options for flexible and affordable genotyping? Do not hesitate in sharing your thoughts and experience with the RosEXEC!

Do you have ideas or interests that benefit the Rosaceae community? Do not hesitate to get involved with RosEXEC and GDR and form a task force. You can contact Gayle Volk, current Chair of RosEXEC, Jonathan Fresnedo Ramirez, current vice-chair, or Per McCord, current secretary. We are looking forward to hearing from you!