Genomes & Diversity

Gramene currently hosts 44 complete reference genomes. In collaboration with Ensembl Genomes, for each reference genome, we incorporate community annotation from primary sources and enrich this information with a series of standardized analyses. These include functional annotation by InterProScan and classification using controlled vocabularies (e.g., GO and PO). Evolutionary histories are provided by Compara phylogenetic gene trees and complemented by analyses of whole genome alignments. In recent years, Gramene has also positioned itself as a resource for genome variation data in food crops including Asian and African rice, maize, sorghum, wheat, barley, grape and tomato.

Pathways & Networks

The Plant Reactome (http://plantreactome.gramene.org) is a new platform for the comparative analysis of plant metabolic and regulatory networks, produced in collaboration with the Human Reactome Project. The April release of Plant Reactome included over 240 metabolic and signaling pathways for 67 plant species including rice, Arabidopsis, maize, Brassicas, and other crucifers. Gramene produces and hosts or mirrors metabolic pathways databases and visualization tools in the BioCyc collection. These are now hosted at CyVerse (http://pathway.iplantcollaborative.org).

Outreach

Meet us at key scientific meetings including the *Maize Genetics Conference*, *Plant and Animal Genomes, ICAR* and ASPB's *Plant Biology*. We also participate in several Research Coordination Networks to understand community needs, and to establish and promote common data exchange formats.

Web Services

- Gramene Mart for custom data dumps
- Public MySQL & DAS servers
- RESTful API

Cite Us

Tello-Ruiz *et al* (2016). Gramene 2016: comparative plant genomics & pathway resources. *NAR* 44 (D1): D1133

Contact us

feedback@gramene.org

Like our Facebook page!

Twitter ***@GrameneDatabase***

Funding

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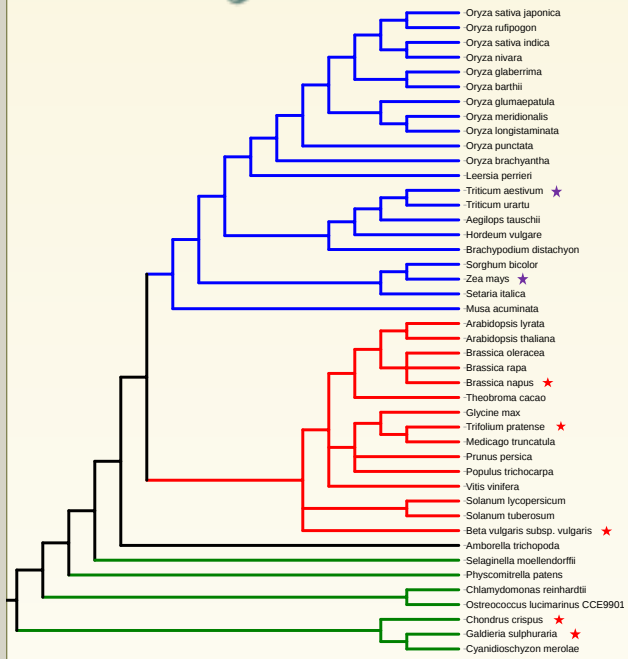
NSF OSU EMBL-EBI CSH OICR Ontario Institute for Cancer Research USDA

Gramene

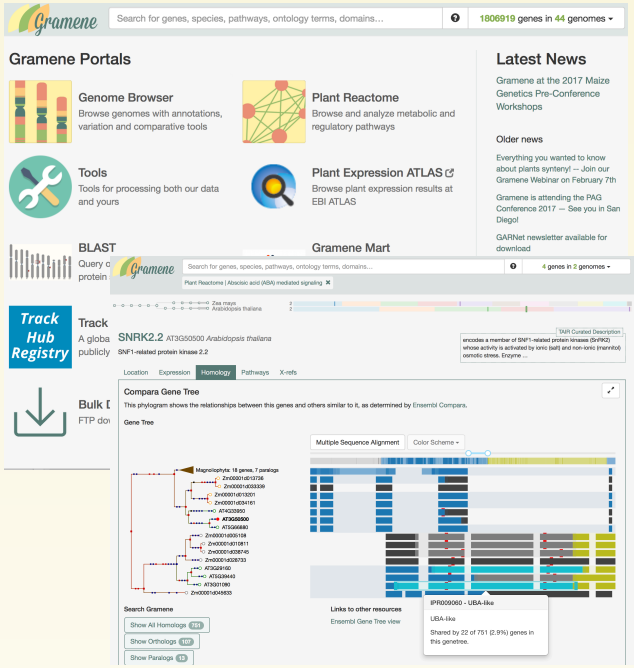


★ New ★ Updated

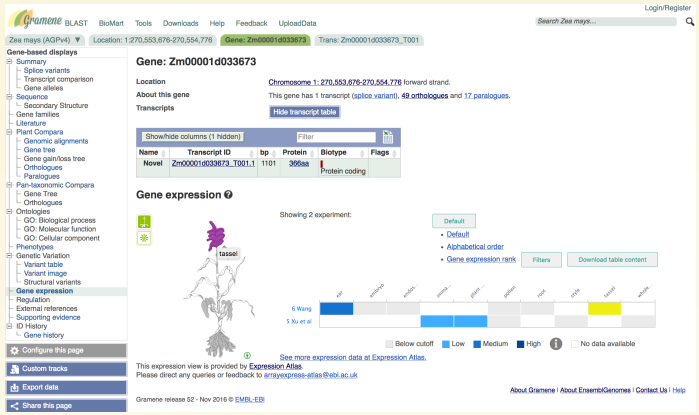
Comparative genomics across the plant kingdom

http://www.gramene.org/

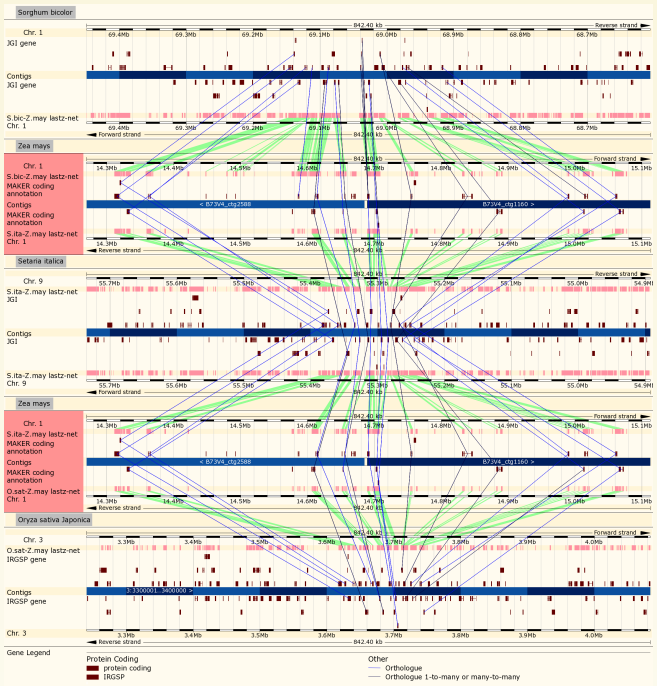
Gramene continues to grow with 44 complete genomes (build 52), including crops, model organisms and lower plants. Together these serve as a reference resource for comparative analyses, for the broad scientific community, in support of basic and translational research which impact societal interests in food security, energy production, and climate change.

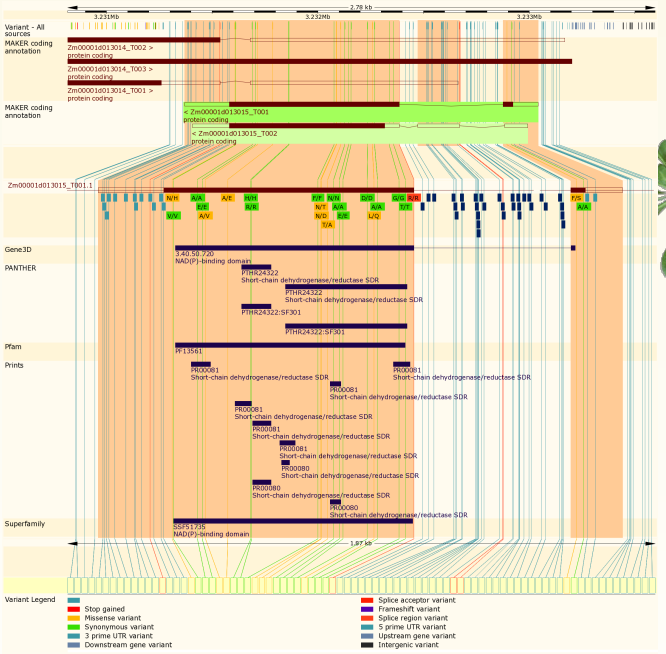


New and improved search capabilities

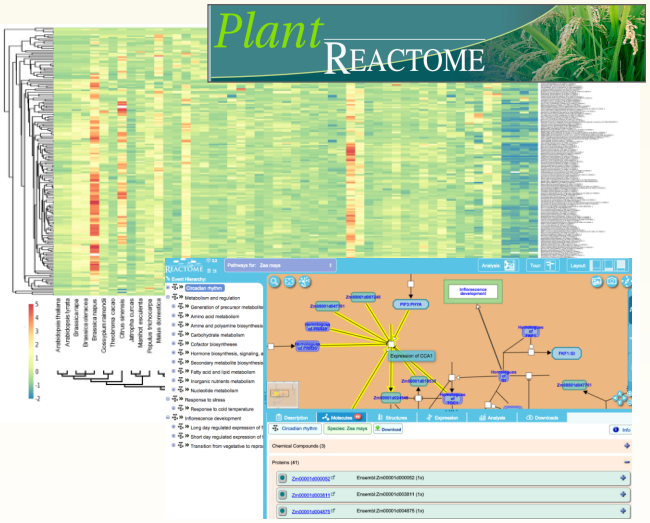


ATLAS data visualization tools are connected to Gramene, Ensembl Plants and Plant Reactome resources



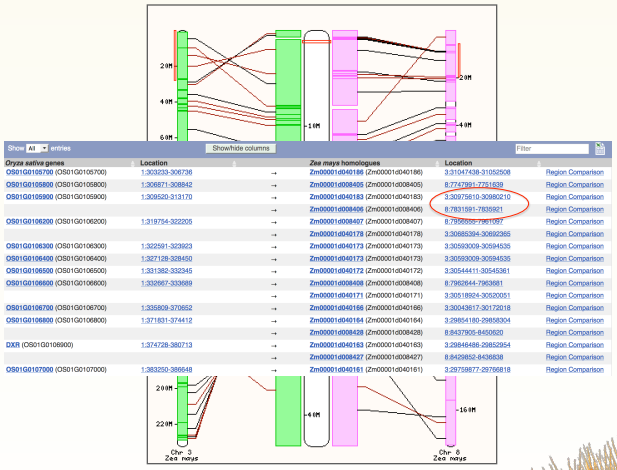


The multi-species view shows alignments in the context of gene annotations across multiple species



Plant Reactome includes curated over 200 rice pathways and homology-based projections to 66 species, including maize. Shown above are pathway-gene associations based on phylogeny.

SNP diversity displayed in the context of functional protein domains. Population genotypes also available in graphical & tabular form



Duplicate maize regions show **co-synteny** with rice