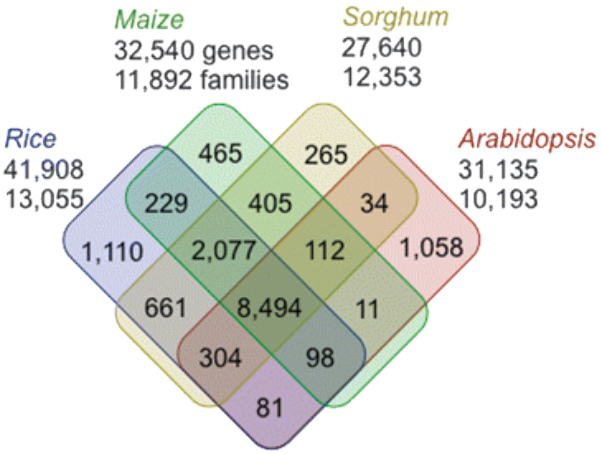


Venn diagram showing unique and shared gene families between and among the three sequenced grasses (maize, rice, and sorghum) and the dicot, *Arabidopsis*. (Schnable, Ware, et al., *Science*, 20 November 2009, **326**: 1112-1115)

Germplasm

Gramene's new germplasm database is targeted at plant breeders. It attempts to summarize all of Gramene's information in the context of known stocks. In its initial release, it focuses on rice only, but it will be expanded in the future.

Diversity

The Gramene Genetic Diversity module integrates genotype, phenotype, and germplasm data from several plant species, with an emphasis on rice, maize and *Arabidopsis*. The Diversity module aims to facilitate study of genetic variation within and between populations of plants, and, to help illuminate how genetic diversity relates to observable traits and evolutionary patterns. Gramene Diversity houses a growing number of large-scale SNP chip datasets, and offers tools to query and analyze data, such as GDPC and TASSEL.

Proteins

Gramene's protein database provides collective information on 265K Swissprot-Trembl protein entries from family Poaceae which are annotated by the Gene Ontology (GO) terms for molecular function, biological process, and cellular components.

Genes

The genes database includes descriptions of genes and alleles associated with morphological, developmental and agronomically important phenotypes, variants of physiological characters, biochemical functions, and isozymes.

Markers, Sequences and Maps

Gramene holds 49M plant sequences and genetic markers from GenBank important projects and mapping studies in crop research. We add or update our database every release and work closely with plant researchers to publish new data in many useful formats.

Web Services

- DAS services
- Public MySQL server
- QTL via SSWAP
- Diversity via TASSEL and GDPC

Funding

Gramene is supported by an NSF Plant Genome Research Resource grant (#0703908).

GRAMENE

An Internet resource for comparative plant genomics that offers genome browsers for 14 species as well as curated databases of genes, proteins, QTL, genetic diversity data, biological pathways, ontologies, and genetic markers and sequences in addition to BLAST, BioMart and FTP interfaces to a wealth of plant data.

Web:

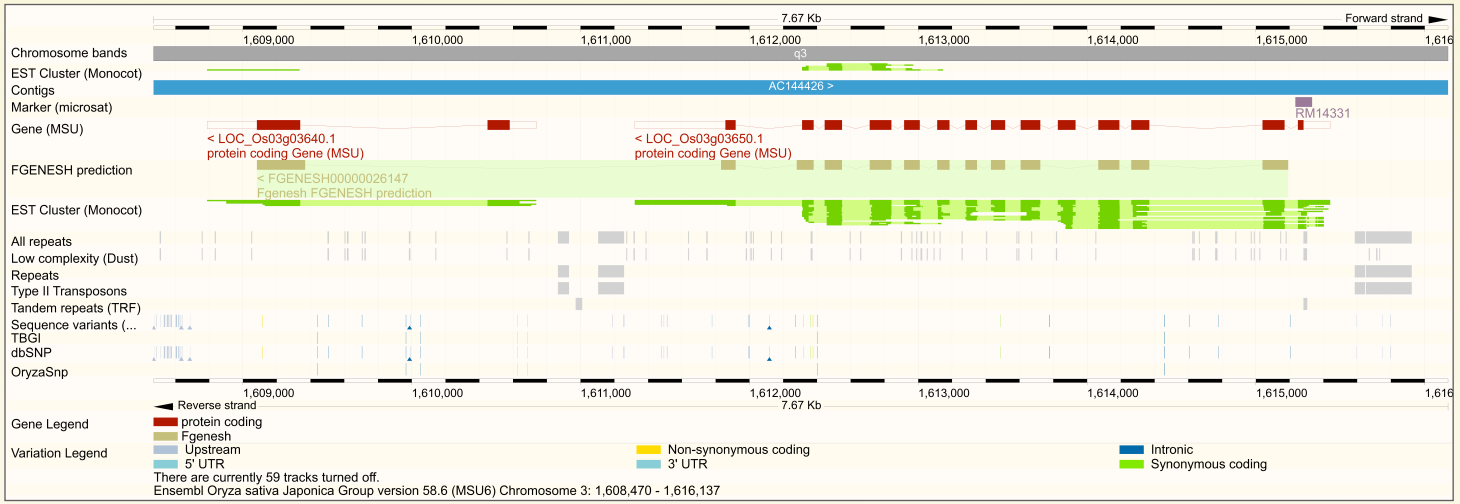
http://www.gramene.org

Email:

gramene@gramene.org

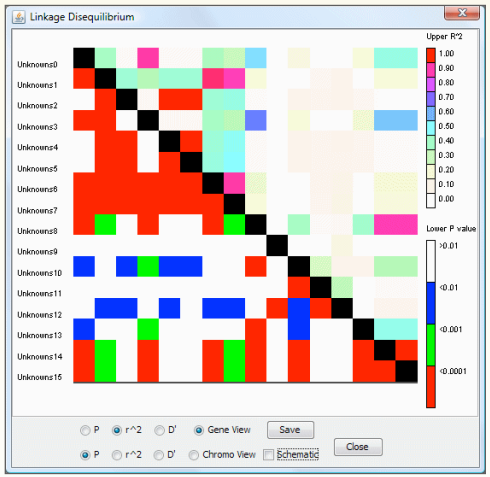
RSS:

http://news.gramene.org

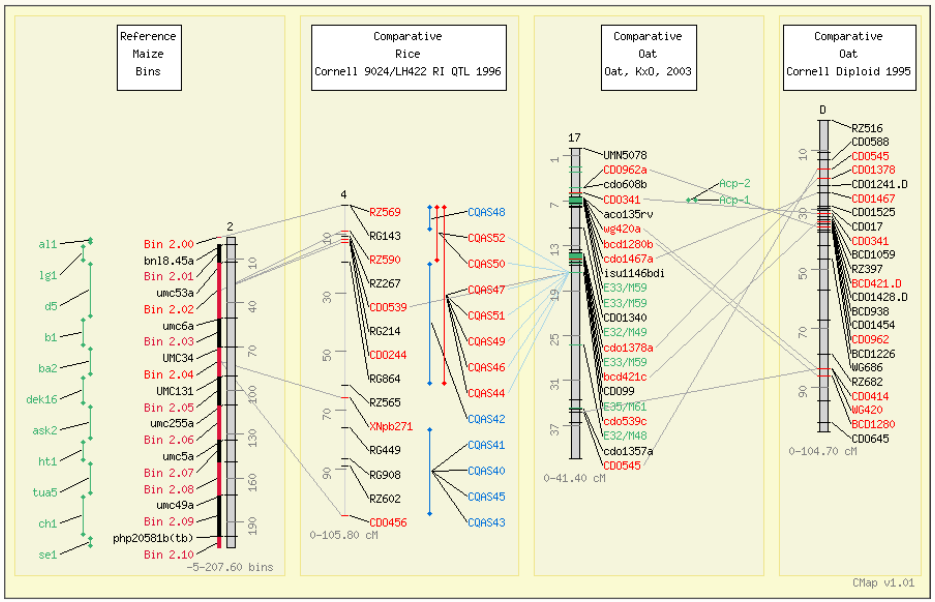


A view of the Ensembl version 58 genome browser of *Oryza sativa japonica* chromosome 3 showing evidence-based (MSU6) genes, ab-initio (FGENESH) genes, EST cluster alignments, repeats, and variation. Thirteen genomes are present in Gramene's Ensembl genome browser.

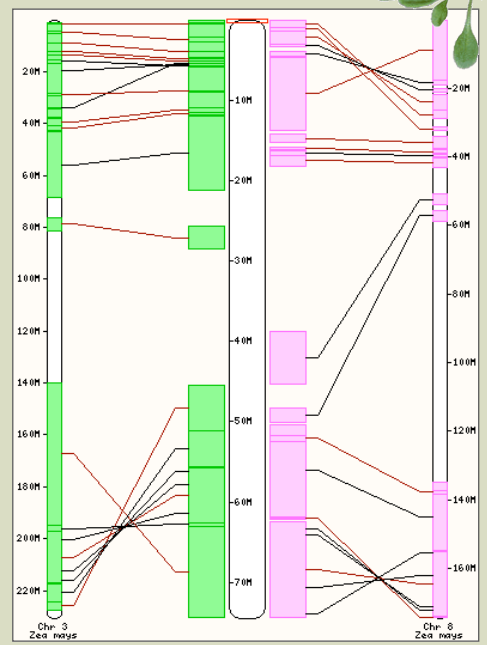
As part of a new collaboration, our plant genomes databases are developed with, and mirrored by, Ensembl Genomes (http://plants.ensembl.org).



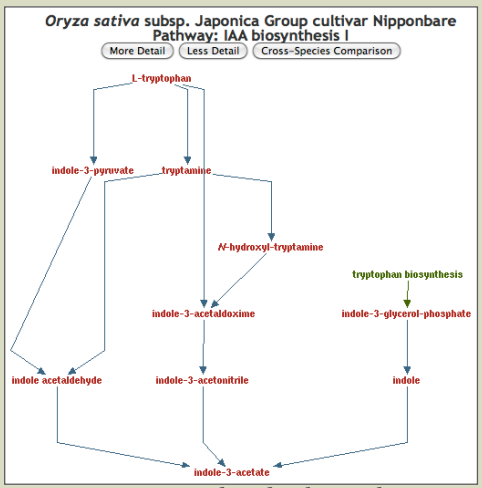
A linkage disequilibrium (LD) plot from Tassel.



At Gramene you can compare over 200 maps from 29 plant species.



A view of synteny between *Sorghum bicolor* chromosome 3 and *Zea mays*.



Gramene has biological pathways for 11 species plus a mirror of the PlantCyc reference database.