Overview of the GnpIS Grape Genomics & Genetics Integrative Resource

Nacer Mohellibi

A bioinformatic platform for crop improvement

Genome
- Annotation
- Transcriptome
- SNP / Structural variant

Genetics
- Genetic maps
- Genetic markers
- Genetic resources

Phenotypes
- GxE
- QTL maps
- GWAS

URGI pipelines
Data & tools

About URGi
https://urgi.versailles.inra.fr

Transversal portal

Global search

GrapeMine

Genome
taxonomy
polymorphisms
phenotypes
Genetic resources

Thematic portals

Biomart

Galaxy

Integration of Genomic and Genetics data for Vitis markers in chr. 18

Transversal portal - quicksearch

https://urgi.versailles.inra.fr/gnpis/
Thematic portals

Genetic Resources 10,459 Vitis accessions

Genome Maps & Markers

Phenotyping

Polymorphism (genotypes of >1100 accessions for > 14000 markers)

GWAS (in progress)

1 Workflow / 2 use cases

Annotation Variations Accession Phenotype

Use case 1: Zoom on a gene in Flb Locus

GnpIS QuickSearch: https://urgi.versailles.inra.fr/gnpis/

Vitis 12X Genome Browser

Vitis 12X.0 Generic Genome Browser @ URGI:
https://urgi.versailles.inra.fr/gb2/gbrowse/vitis_12x_pub

SNP details

Sequence variations of the locus
### Resequencing batch genotypes summary

<table>
<thead>
<tr>
<th>Genotype table</th>
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<tbody>
<tr>
<td>Nacer Mohellibi</td>
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### Use case 2: Enter by genome coordinates


More details on Intermine functionalities
Wheat3BMine Poster #654: Letellier T. et al and computer demo: January 13th 11:00 am

### GrapeMine: Region form

- Genes
- Transcripte
- ORFs
- SNPs
- Indels

### Zoom on a SNP

List of the species concerned by this marker

#### Genotype results

<table>
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<th>Species Name</th>
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#### Genotyping results
Diversity in V. vinifera in the chr18: 700K-800k region

Prospects

- Jbrowse based on the Vitis12X.2 assembly
  Learn more about this assembly: https://urgi.versailles.inra.fr/Species/Vitis/Data-Sequences/Genome-sequences

- Add GWAS Vitis data (INRA)

Available soon: Vitis GWAS data

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THANK YOU FOR YOUR ATTENTION!