Grape@GnpIS: Overview of the GnpIS grape genomics and genetics integrative resource

Nacer Mohellibi, Nathalie Choisne, Aminah A. Keliet, Daphné Verdelet, Françoise Alfama, Guillaume Merceron, Célia Michotey, Amandine Launay, Thomas Letellier, Raphaël Flores, et al.

To cite this version:

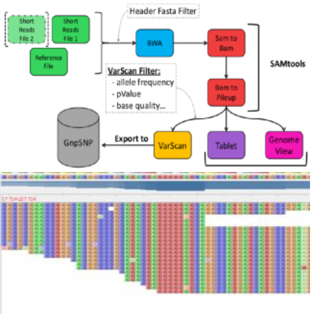
Nacer Mohellibi, Nathalie Choisne, Aminah A. Keliet, Daphné Verdelet, Françoise Alfama, et al.. Grape@GnpIS: Overview of the GnpIS grape genomics and genetics integrative resource. 23. Plant and Animal Genome (PAG XXIII), Jan 2015, San Diego, Californie, United States. pp.24 slides. hal-02741780

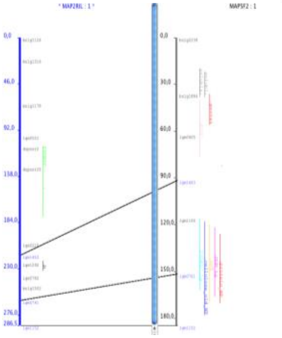
HAL Id: hal-02741780
https://hal.inrae.fr/hal-02741780
Submitted on 3 Jun 2020

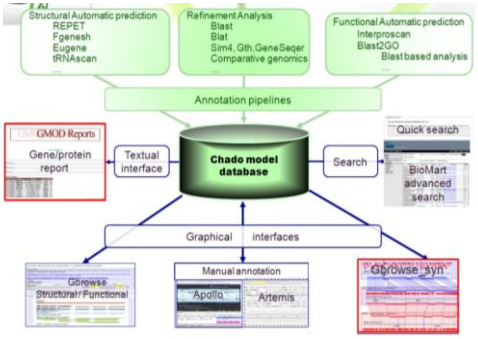
Grape@GnpIS

Overview of the GnpIS Grape Genomics & Genetics Integrative Resource

Nacer Mohellibi



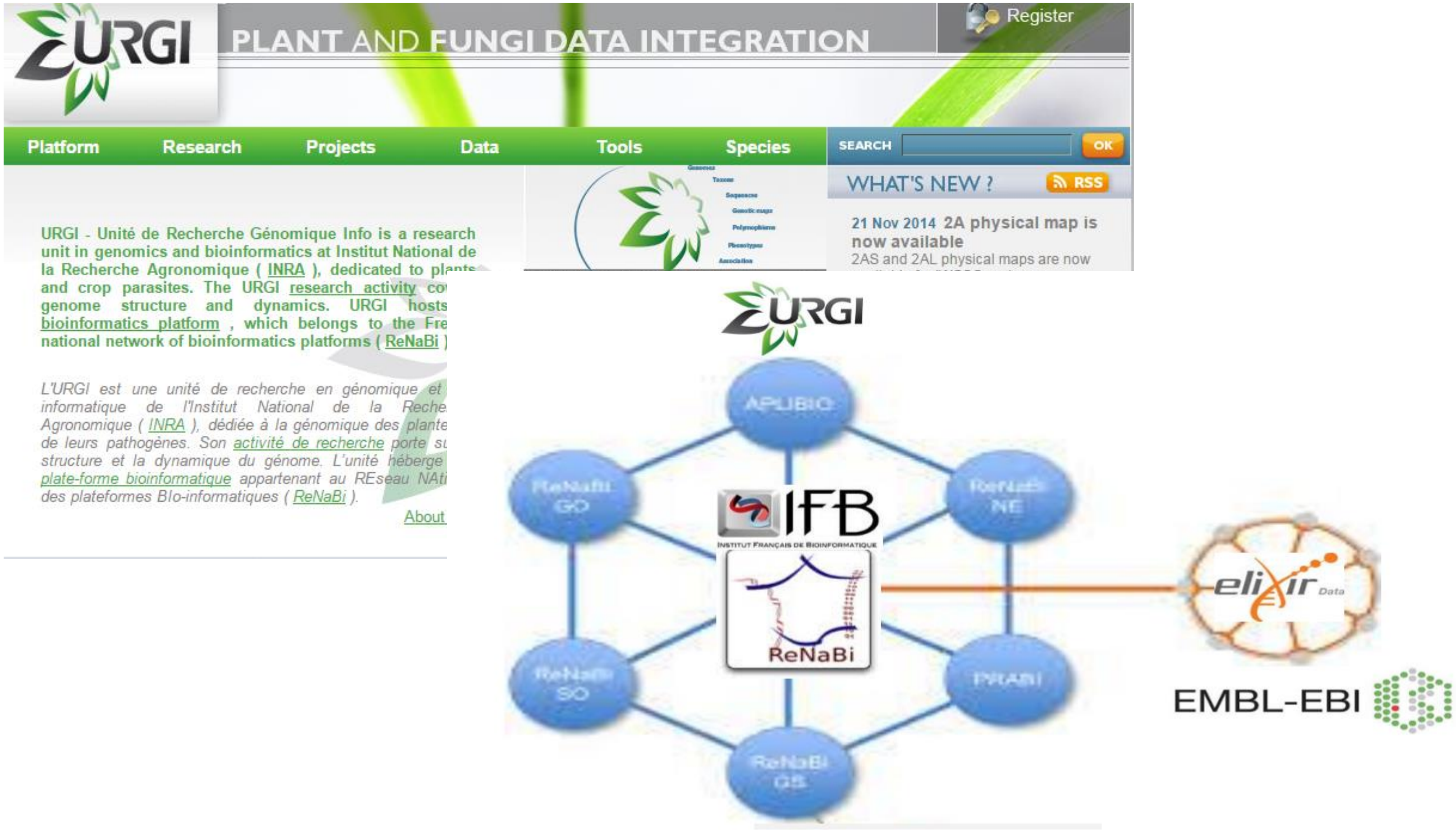




ALIMENTATION
AGRICULTURE
ENVIRONNEMENT

ABOUT URGI

https://urgi.versailles.inra.fr



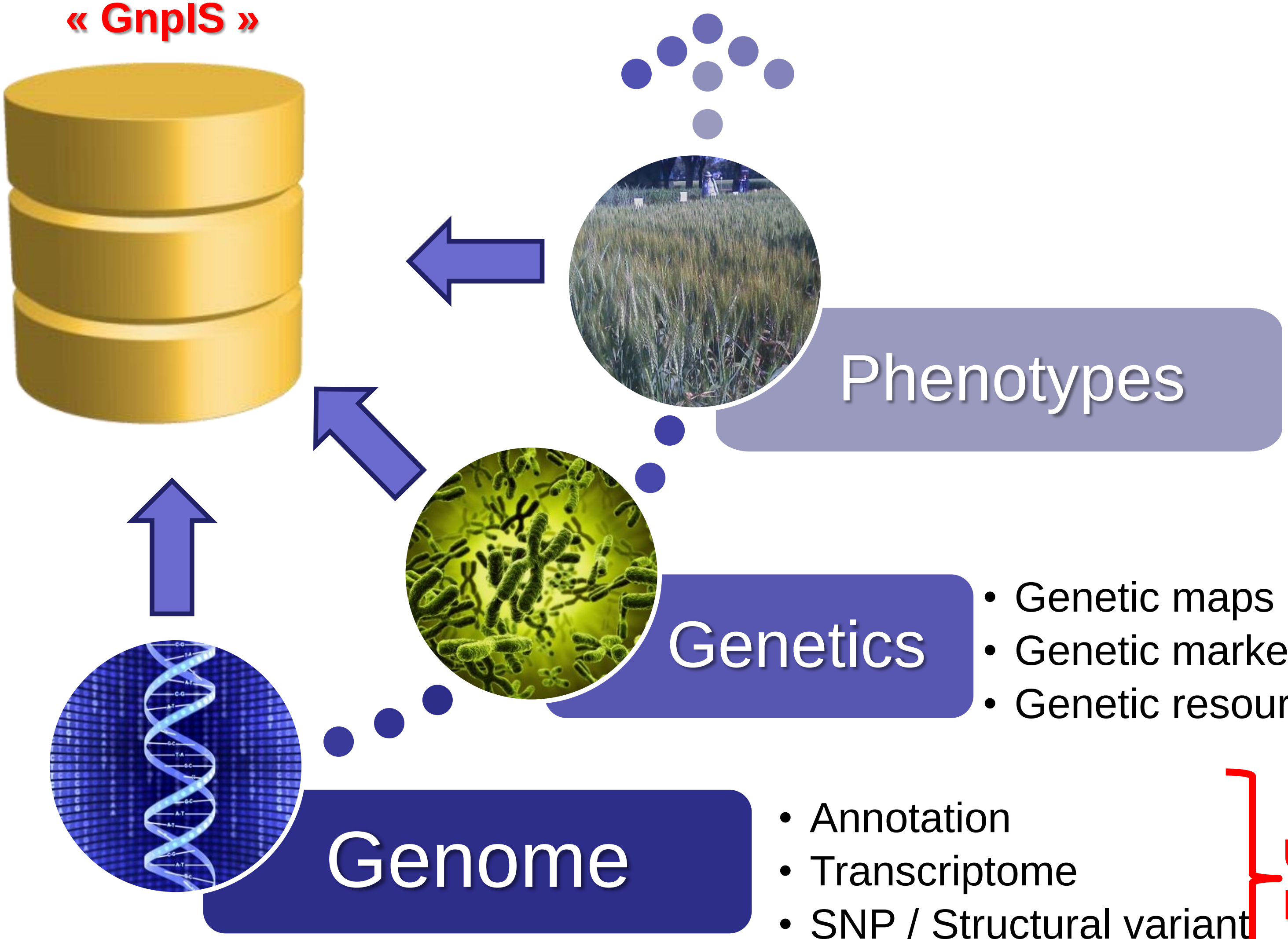
21 Nov 2014 2A physical map is now available
2AS and 2AL physical maps are now

URGI - Unité de Recherche Génomique Info is a research unit in genomics and bioinformatics at Institut National de la Recherche Agronomique (INRA), dedicated to plants and crop parasites. The URGI research activity co genome structure and dynamics. URGI hosts bioinformatics platform , which belongs to the Fre national network of bioinformatics platforms (ReNaBi)

L'URGI est une unité de recherche en génomique et informatique de l'Institut National de la Reche Agronomique (INRA), dédiée à la génomique des plante de leurs pathogènes. Son activité de recherche porte su structure et la dynamique du génome. L'unité héberge plate-forme bioinformatique appartenant au REseau NAti des plateformes BIo-informatiques (ReNaBi).

About

A bioinformatic plateform for crop improvement



URGI DB
« GnpIS »

Phenotypes

- GxE
- QTL maps
- GWAS

Genetics

- Genetic maps
- Genetic markers
- Genetic resources

Genome

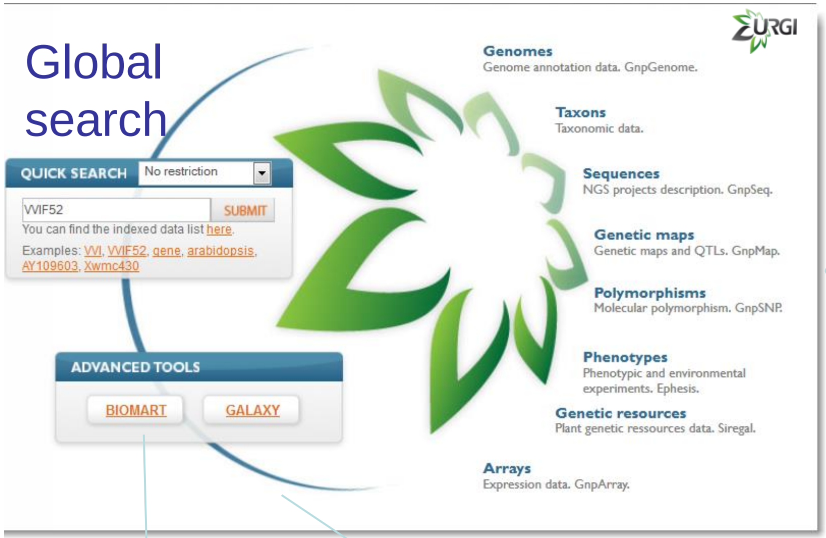
- Annotation
- Transcriptome
- SNP / Structural variant

URGI pipelines
Data & tools

Nacer Mohellibi

GnpIS Overview

Transversal portal



Global search

QUICK SEARCH No restriction

VVIF52 SUBMIT

You can find the indexed data list here.

Examples: VVI, VVIF52, gene, arabidopsis, AY109603, Xwmc430

ADVANCED TOOLS

BIOMART GALAXY

Genomes
Genome annotation data. GnpGenome.

Taxons
Taxonomic data.

Sequences
NGS projects description. GnpSeq.

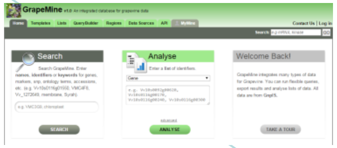
Genetic maps
Genetic maps and QTLs. GnpMap.

Polymorphisms
Molecular polymorphism. GnpSNP.

Phenotypes
Phenotypic and environmental experiments. Ephesis.

Genetic resources
Plant genetic ressources data. Siregal.

Arrays
Expression data. GnpArray.



GrapeMine v1.0 An integrated database for grapevine data

Home | Templates | Lists | QueryBuilder | Regions | Data Sources | API | MyMine — Contact Us | Log in

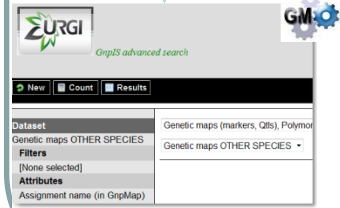
Search — Enter a list of identifiers. — Welcome Back!

Search GrapeMine. Enter names, identifiers or keywords for genes, markers, snp, ontology terms, accessions, etc. (e.g. Vv10s0116g01550, VMC4F8, Vv_1272640, membrane, Syrah)

GrapeMine integrates many types of data for Grapevine. You can run flexible queries, export results and analyse lists of data. All data are from GnpIS.

SEARCH — ANALYSE — TAKE A TOUR

GrapeMine



GnpIS advanced search

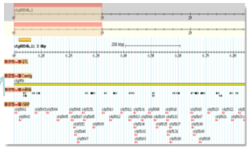
New | Count | Results

Dataset — Genetic maps (markers, Qtls), Polymor
Genetic maps OTHER SPECIES — Genetic maps OTHER SPECIES
Filters
[None selected]
Attributes
Assignment name (in GnpMap)

Biomart

Galaxy

Thematic portals



genome

GnpMap / Taxon: Triticum aestivum

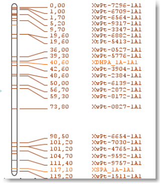
TAXON DETAILS

GnpArray | GnpMap | GnpSNP

[-] DETAILS

Scientific name: Triticum aestivum
Common name: wheat, bread wheat, Triticum vulgare, Canadian hard
Rank: species
Domain: Eukaryota
Kingdom: Plantae

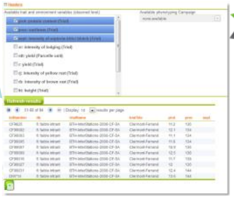
taxonomy



maps

GnpSeq / Run :61EW4AAXX

polymorphisms



phenotypes

Fruit species — Model species — Vegetable species — Crop species

Grapevine GRC — Arabidopsis GRC — Melon GRC — Small grain cereals GRC — Citrus fruits GRC — Medicago truncatula GRC — Lettuce GRC — Maize GRC

Genetic resources

Nacer Mohellibi

Transversal portal - quicksearch

FEEDBACK

GnpIS
GENETIC AND GENOMIC INFORMATION SYSTEM

SEARCH All species ▾

VVIF52

You can find the indexed data list here.

Examples: VVI, VVIF52, gene, arabidopsis, AY109603, XwPt8855

ADVANCED TOOLS

BIOMART GALAX. INTERMINE

All species ▾ VVIF52 SUBMIT

Vitis (8X) genome | Vitis (12X) genome

Features (1)

VVIF52 ★★★★

1 items found, displaying 1 to 1 | Display 10 ▾ results per page

All species ▾ VVIF52 SUBMIT

Association
Association studies. GWAS. GnpAsso.

Genetic resources
Plant genetic ressources data. Siregal.

Transcriptomic
Expression data. GnpArray.

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

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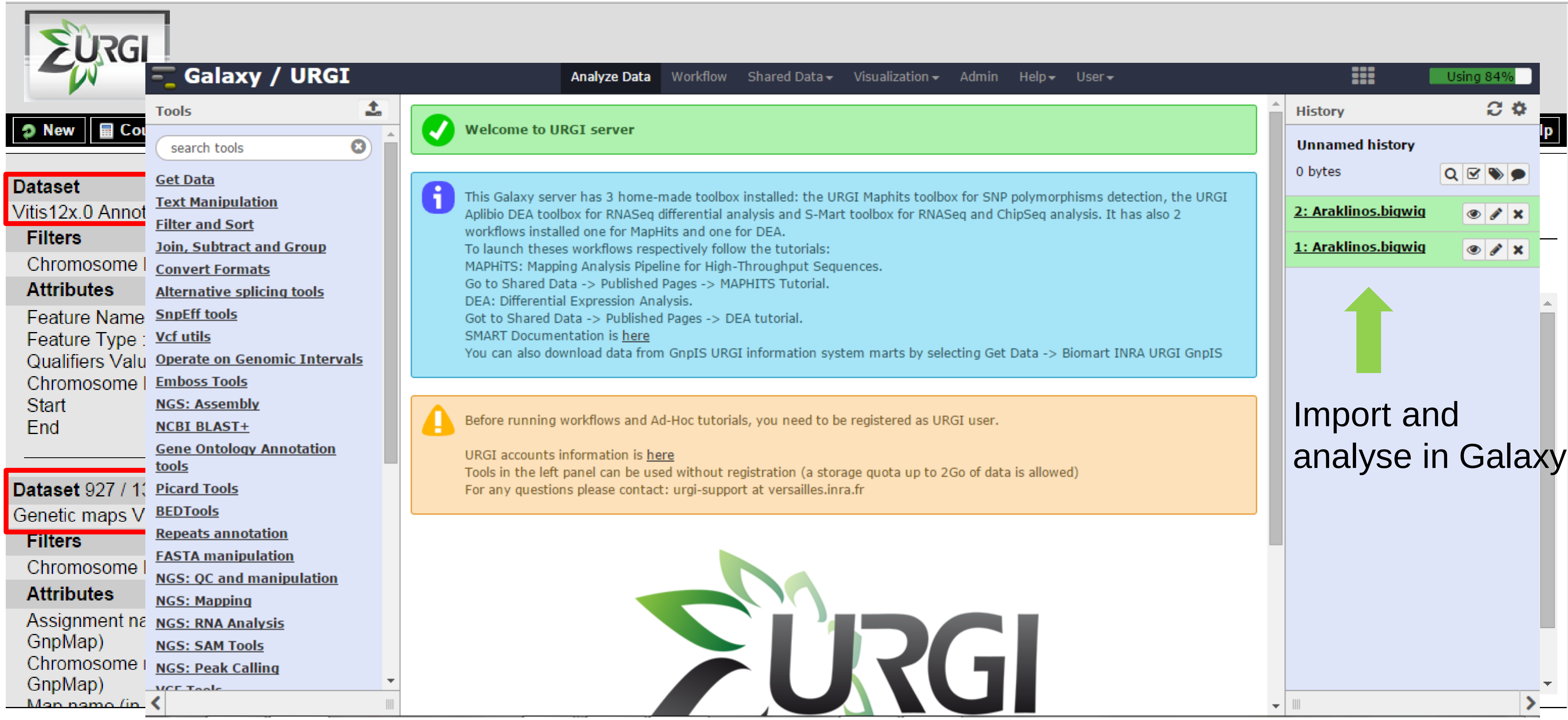
Transversal portal
Biomart & Galaxy



Welcome to URGI server

This Galaxy server has 3 home-made toolbox installed: the URGI Maphits toolbox for SNP polymorphisms detection, the URGI Aplibio DEA toolbox for RNASeq differential analysis and S-Mart toolbox for RNASeq and ChipSeq analysis. It has also 2 workflows installed one for MapHits and one for DEA.
To launch theses workflows respectively follow the tutorials:
MAPHiTS: Mapping Analysis Pipeline for High-Throughput Sequences.
Go to Shared Data -> Published Pages -> MAPHITS Tutorial.
DEA: Differential Expression Analysis.
Got to Shared Data -> Published Pages -> DEA tutorial.
SMART Documentation is here
You can also download data from GnpIS URGI information system marts by selecting Get Data -> Biomart INRA URGI GnpIS

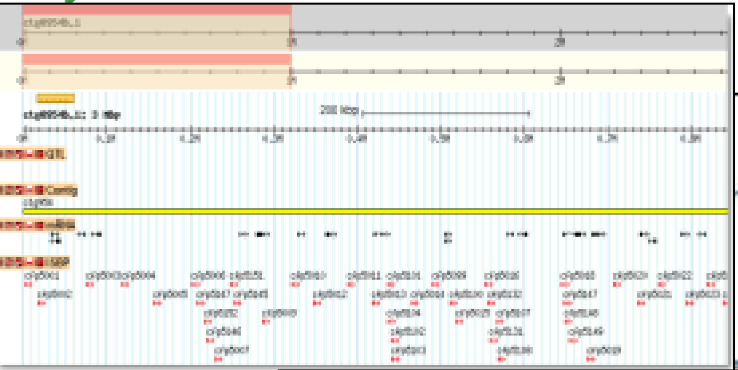
Before running workflows and Ad-Hoc tutorials, you need to be registered as URGI user.

URGI accounts information is here
Tools in the left panel can be used without registration (a storage quota up to 2Go of data is allowed)
For any questions please contact: urgi-support at versailles.inra.fr

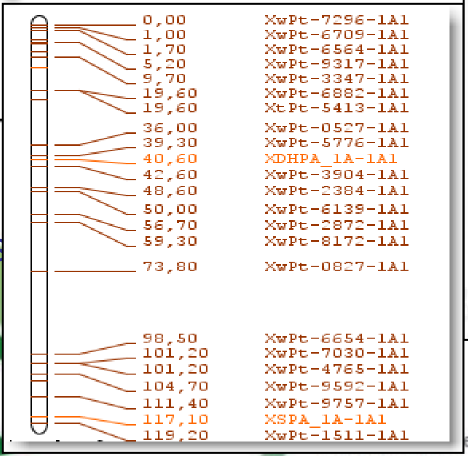
Import and analyse in Galaxy

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

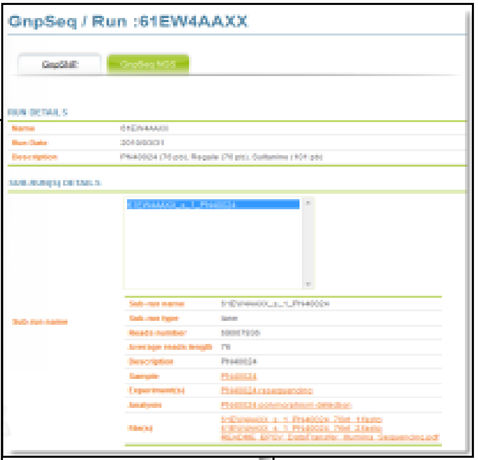
Thematic portals



Genome
Vitis 8X & 12X (annotations Genoscope and CRIBI)

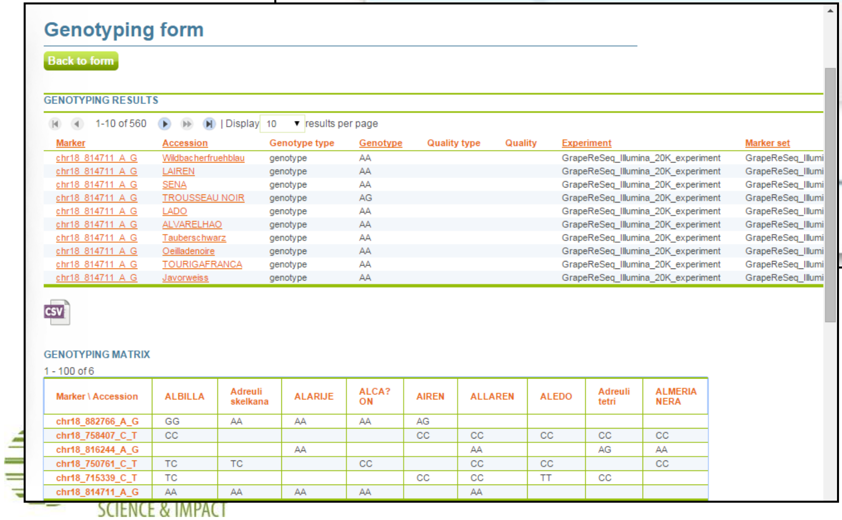


Genetic Maps & Markers
27 Vitis genetic maps



Sequencing Metadata & Files
Resequencing runs: 2 public / 13 private

Genetic Resources
10,459 Vitis accessions



Genotyping form

Back to form

GENOTYPING RESULTS

1-10 of 560 | Display 10 results per page

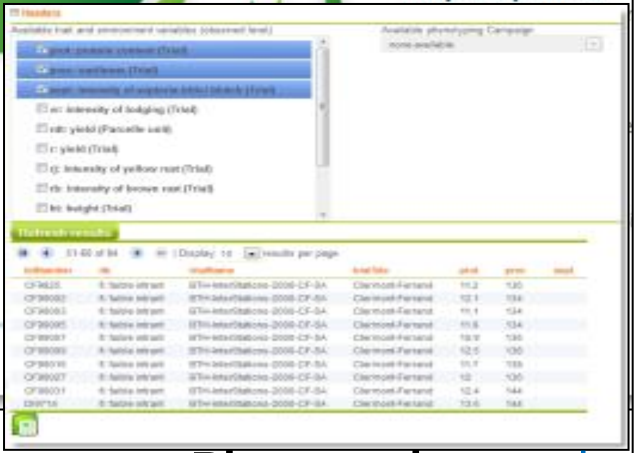
Marker	Accession	Genotype type	Genotype	Quality type	Quality	Experiment	Marker set
chr18_814711_A_G	Wildbacherfruehblau	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumi
chr18_814711_A_G	LAIREN	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumi
chr18_814711_A_G	SENA	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumi
chr18_814711_A_G	TROUSSEAU NOIR	genotype	AG			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumi
chr18_814711_A_G	LADO	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumi
chr18_814711_A_G	ALVARELHAO	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumi
chr18_814711_A_G	Tauberschwarz	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumi
chr18_814711_A_G	Oeilladenoire	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumi
chr18_814711_A_G	TOURIGAFRANCA	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumi
chr18_814711_A_G	Javorweiss	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumi

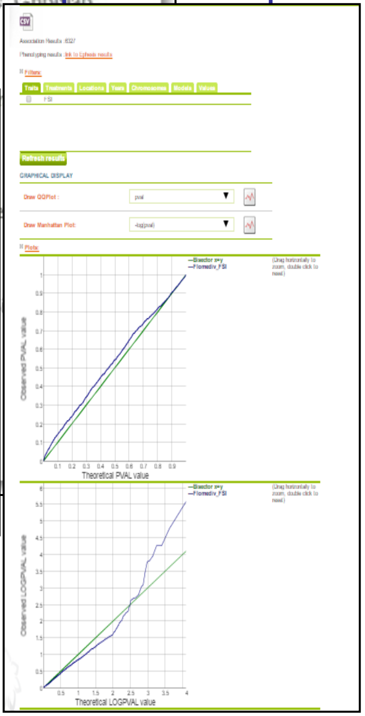
CSV

GENOTYPING MATRIX

1 - 100 of 6

Marker \ Accession	ALBILLA	Adreuli skelkana	ALARIJE	ALCA? ON	AIREN	ALLAREN	ALEDO	Adreuli tetri	ALMERIA NERA
chr18_882766_A_G	GG	AA	AA	AA	AG				
chr18_758407_C_T	CC				CC	CC	CC	CC	CC
chr18_816244_A_G			AA			AA		AG	AA
chr18_750761_C_T	TC	TC		CC		CC	CC		CC
chr18_715339_C_T	TC				CC	CC	TT	CC	
chr18_814711_A_G	AA	AA	AA	AA		AA			





Phenotyping 1trial

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

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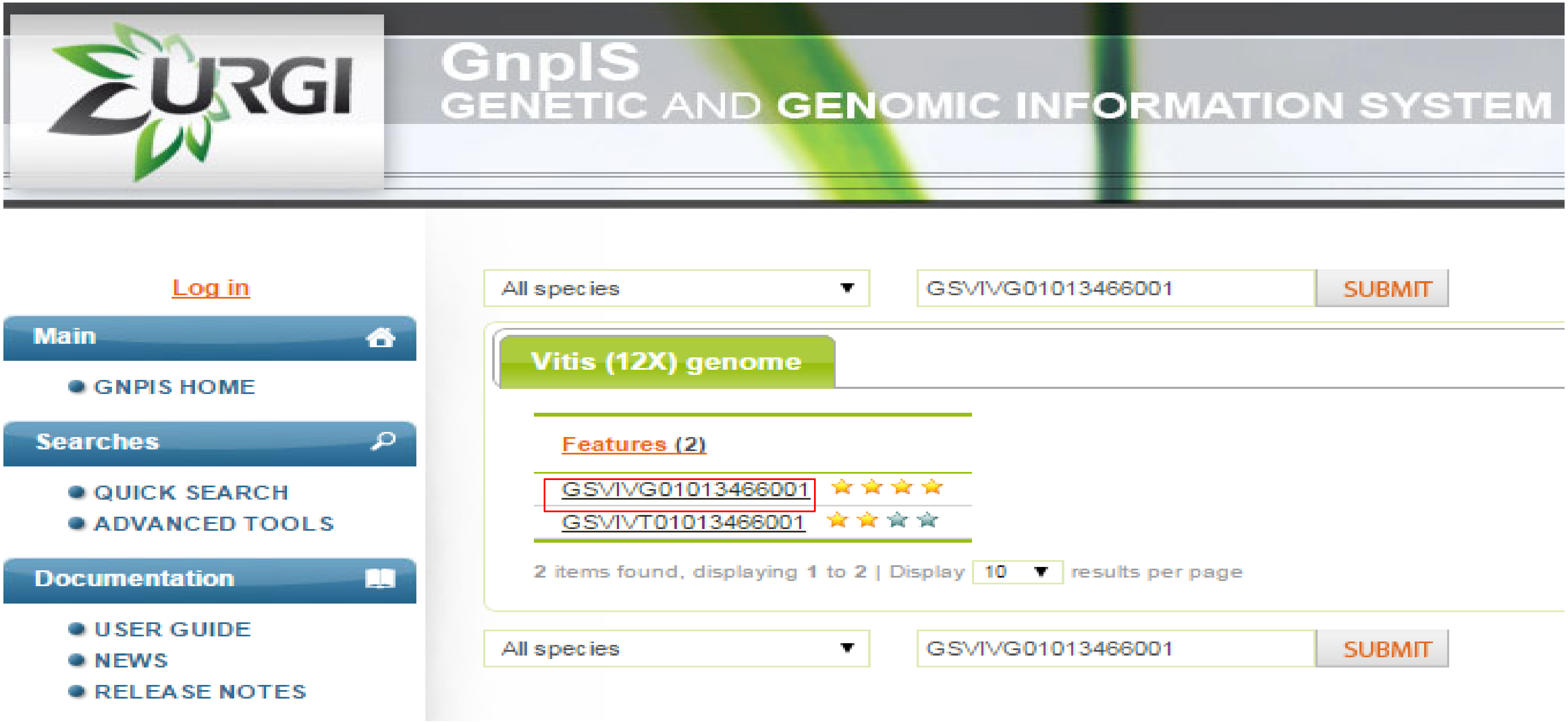
GWAS (in progress)

1 Workflow / 2 use cases


Annotation
Variations
Accession
Phenotype

Use case 1: Zoom on a gene in Flb Locus



All species ▼ GSVIVG01013466001

Features (2)

GSVIVG01013466001 ★★★★

GSVIVT01013466001 ★★★★

2 items found, displaying 1 to 2 | Display 10 ▼ results per page

All species ▼ GSVIVG01013466001

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

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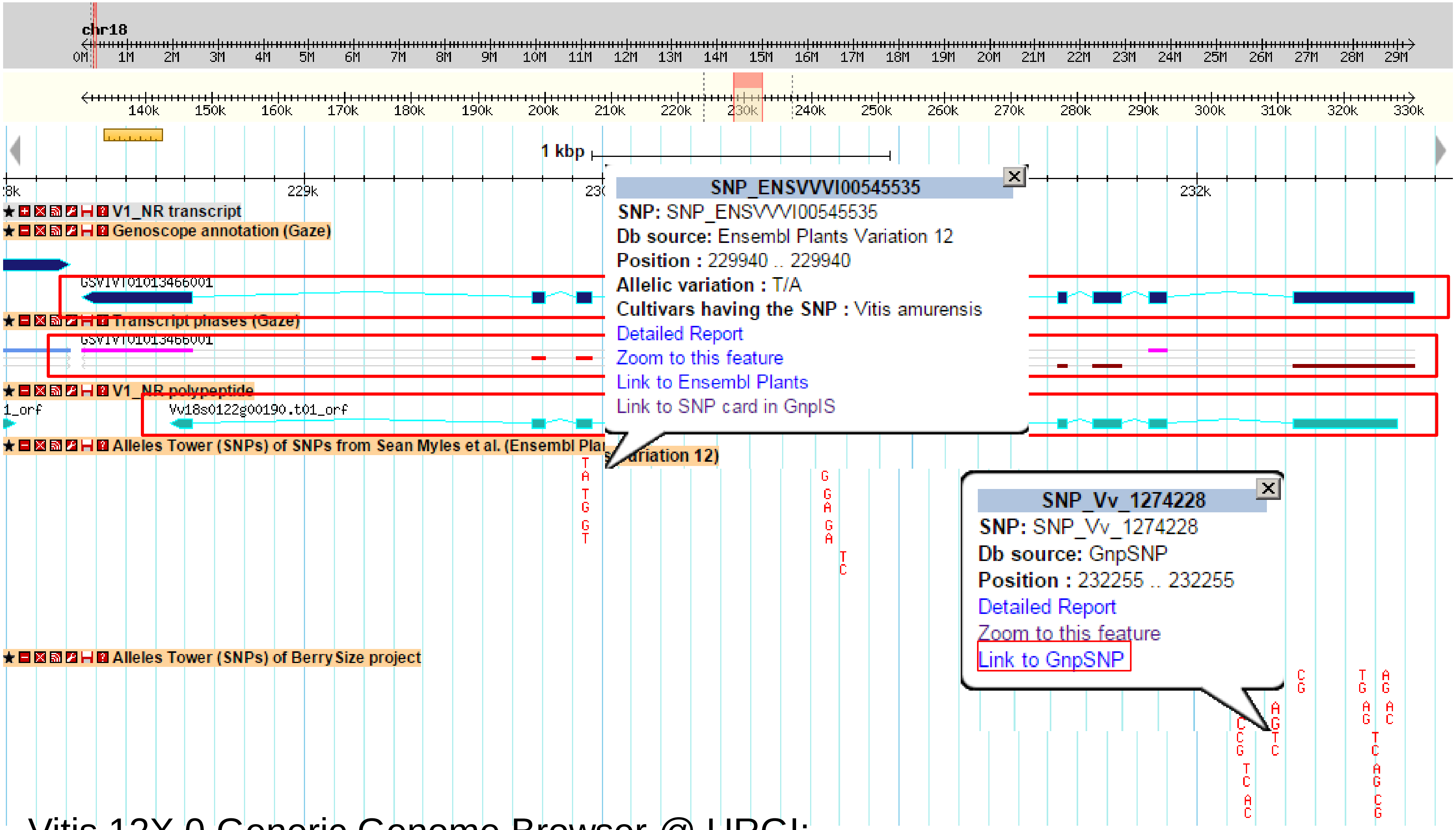
Vitis 12X Genome Browser



SNP_ENSVVVI00545535

SNP: SNP_ENSVVVI00545535

Db source: Ensembl Plants Variation 12

Position : 229940 .. 229940

Allelic variation : T/A

Cultivars having the SNP : Vitis amurensis

Detailed Report

Zoom to this feature

Link to Ensembl Plants

Link to SNP card in GnpIS

SNP_Vv_1274228

SNP: SNP_Vv_1274228

Db source: GnpSNP

Position : 232255 .. 232255

Detailed Report

Zoom to this feature

Link to GnpSNP

Vitis 12X.0 Generic Genome Browser @ URGI:

https://urgi.versailles.inra.fr/gb2/gbrowse/vitis_12x_pub

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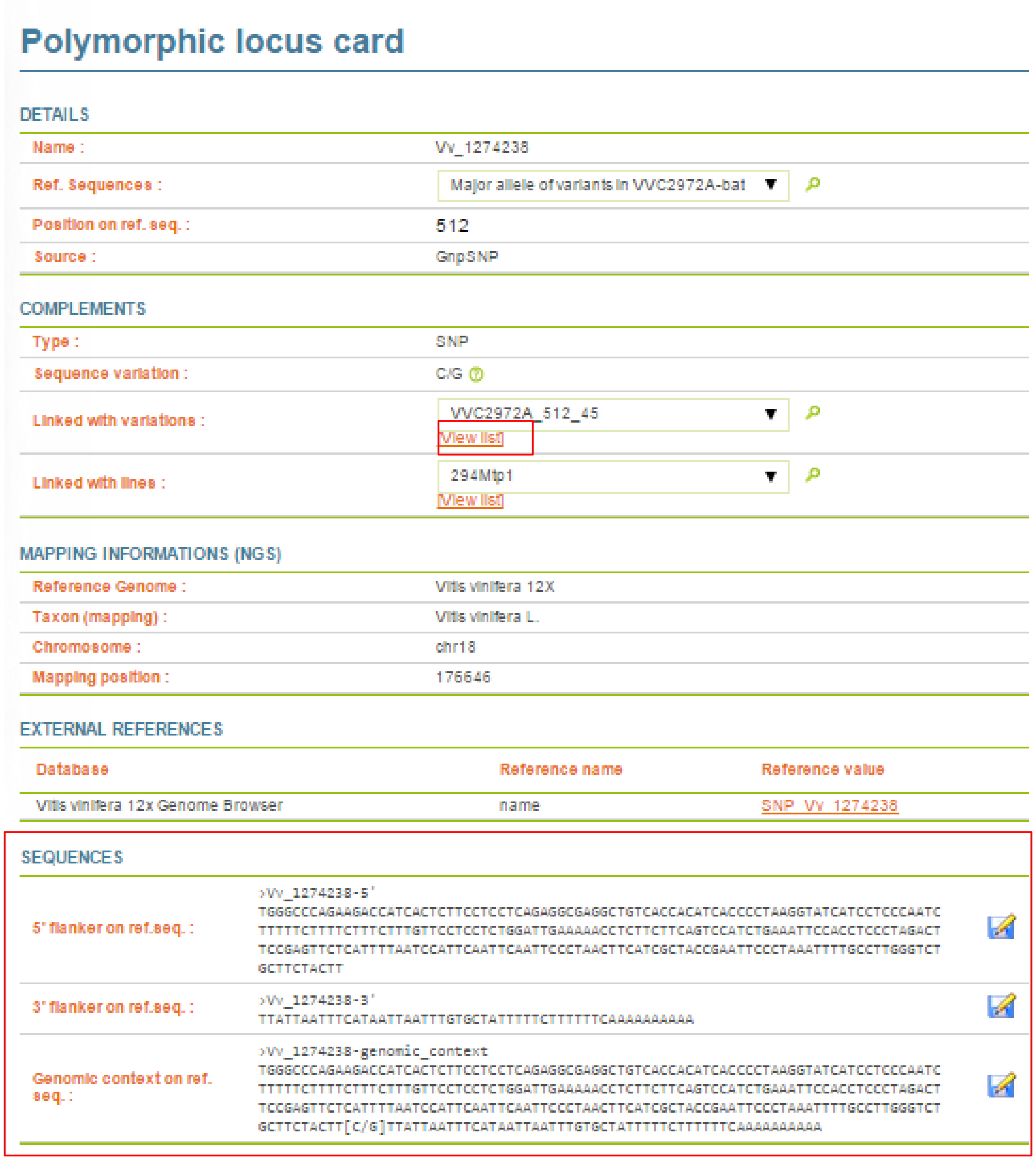
SNP details



Polymorphic locus card

DETAILS

Name :	Vv_1274238
Ref. Sequences :	Major allele of variants in VVC2972A-bat ▼
Position on ref. seq. :	512
Source :	GnpSNP

COMPLEMENTS

Type :	SNP
Sequence variation :	C/G
Linked with variations :	VVC2972A_512_45 ▼ View list
Linked with lines :	294Mtp1 ▼ View list

MAPPING INFORMATIONS (NGS)

Reference Genome :	Vitis vinifera 12X
Taxon (mapping) :	Vitis vinifera L.
Chromosome :	chr18
Mapping position :	176646

EXTERNAL REFERENCES

Database	Reference name	Reference value
Vitis vinifera 12x Genome Browser	name	SNP_Vv_1274238

SEQUENCES

5' flanker on ref.seq. :

```
>Vv_1274238-5'
TGGGCCCAGAAGACCATCACTCTTCCTCCTCAGAGGCGAGGCTGTCACCACATCACCCCTAAGGTATCATCCTCCCAATC
TTTTTCTTTTCTTTCTTTGTTCCTCCTCTGGATTGAAAAACCTCTTCTTCAGTCCATCTGAAATTCCACCTCCCTAGACT
TCCGAGTTCTCATTTTAATCCATTCAATTCAATTCCCTAACTTCATCGCTACCGAATTCCCTAAATTTTGCCTTGGGTCT
GCTTCTACTT
```

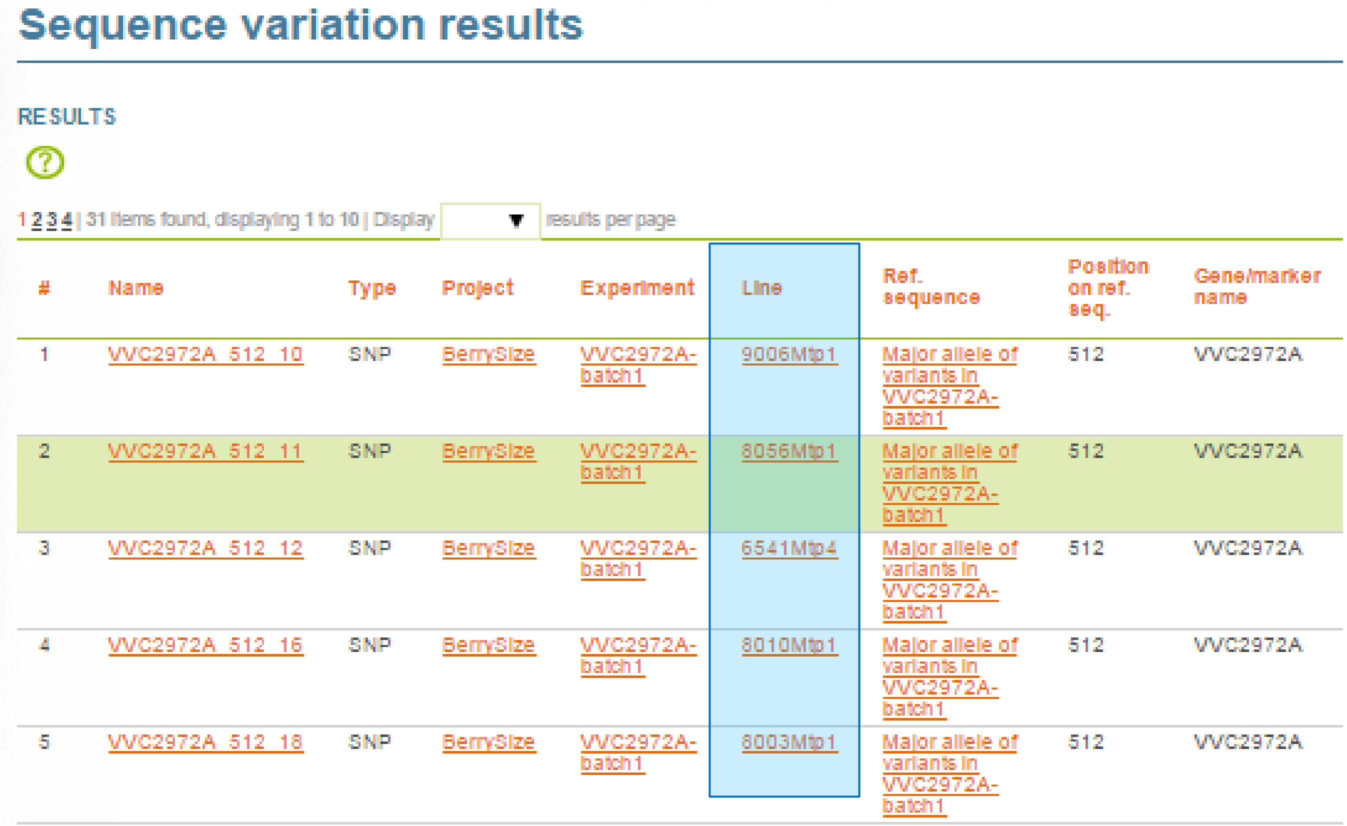
3' flanker on ref.seq. :

```
>Vv_1274238-3'
TTATTAATTTCATAATTAATTTGTGCTATTTTTCTTTTTTCAAAAAAAAAA
```

Genomic context on ref. seq. :

```
>Vv_1274238-genomic_context
TGGGCCCAGAAGACCATCACTCTTCCTCCTCAGAGGCGAGGCTGTCACCACATCACCCCTAAGGTATCATCCTCCCAATC
TTTTTCTTTTCTTTCTTTGTTCCTCCTCTGGATTGAAAAACCTCTTCTTCAGTCCATCTGAAATTCCACCTCCCTAGACT
TCCGAGTTCTCATTTTAATCCATTCAATTCAATTCCCTAACTTCATCGCTACCGAATTCCCTAAATTTTGCCTTGGGTCT
GCTTCTACTT[C/G]TTATTAATTTCATAATTAATTTGTGCTATTTTTCTTTTTTCAAAAAAAAAA
```

Sequence variations of the locus



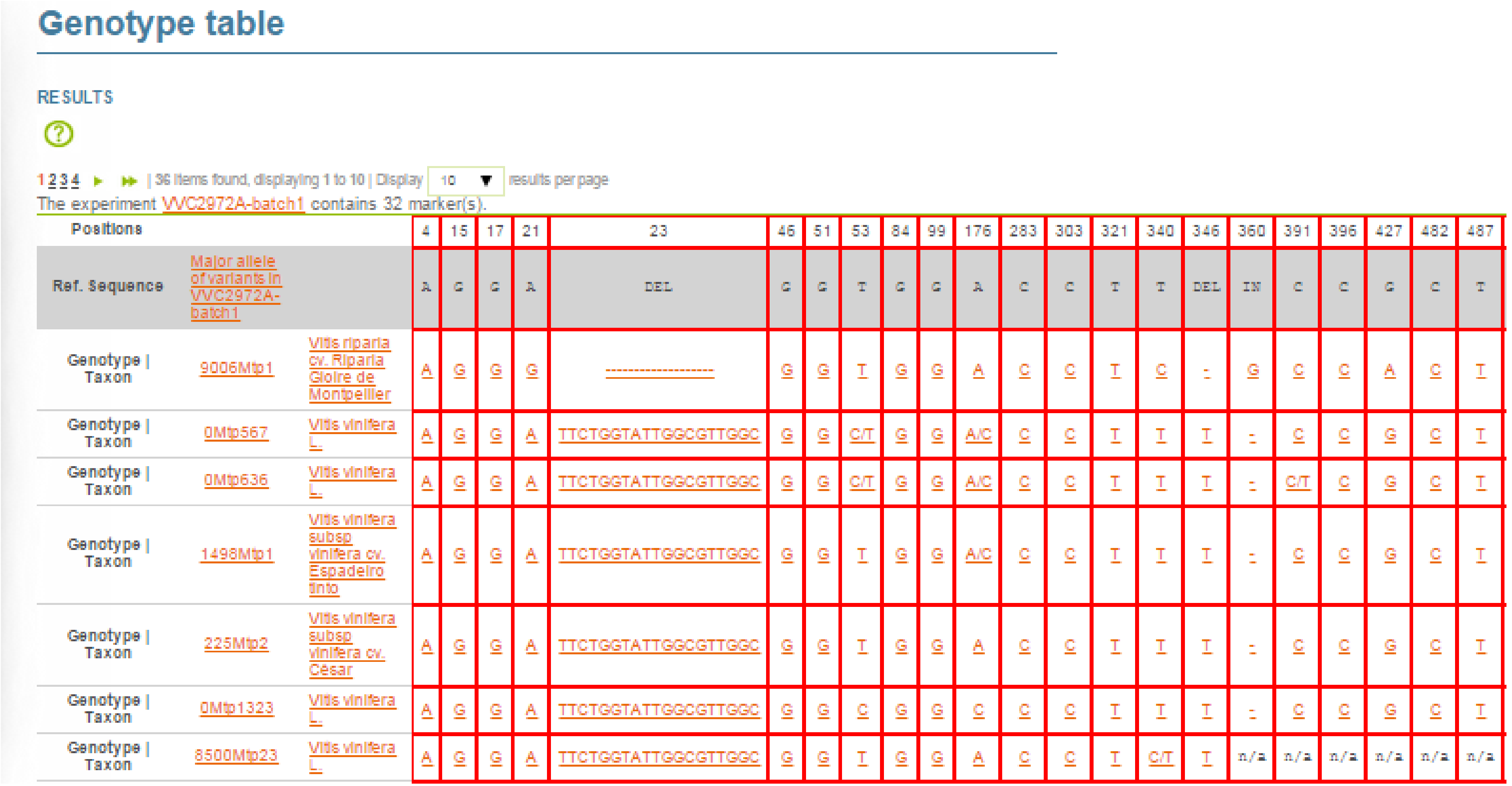
Sequence variation results

RESULTS

1 2 3 4 | 31 items found, displaying 1 to 10 | Display ▼ results per page

#	Name	Type	Project	Experiment	Line	Ref. sequence	Position on ref. seq.	Gene/marker name
1	VVC2972A_512_10	SNP	BerrySize	VVC2972A-batch1	9006Mtp1	Major allele of variants in VVC2972A-batch1	512	VVC2972A
2	VVC2972A_512_11	SNP	BerrySize	VVC2972A-batch1	8056Mtp1	Major allele of variants in VVC2972A-batch1	512	VVC2972A
3	VVC2972A_512_12	SNP	BerrySize	VVC2972A-batch1	6541Mtp4	Major allele of variants in VVC2972A-batch1	512	VVC2972A
4	VVC2972A_512_16	SNP	BerrySize	VVC2972A-batch1	8010Mtp1	Major allele of variants in VVC2972A-batch1	512	VVC2972A
5	VVC2972A_512_18	SNP	BerrySize	VVC2972A-batch1	8003Mtp1	Major allele of variants in VVC2972A-batch1	512	VVC2972A

Resequencing batch genotypes summary



Genotype table

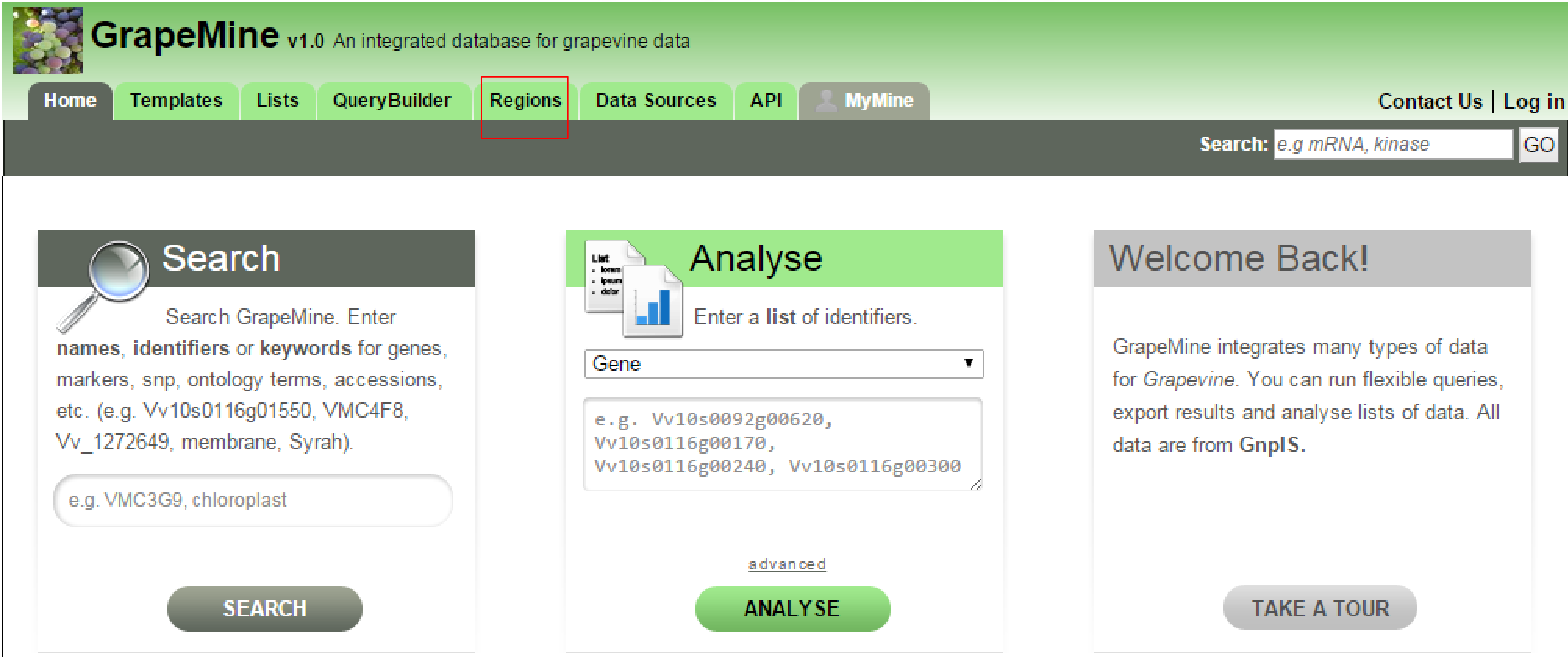
RESULTS

1 2 3 4 ▸ ⏩ | 36 items found, displaying 1 to 10 | Display 10 ▼ results per page

The experiment VVC2972A-batch1 contains 32 marker(s).

Positions			4	15	17	21	23	46	51	53	84	99	176	283	303	321	340	346	360	391	396	427	482	487
Ref. Sequence	Major allele of variants in VVC2972A-batch1		A	G	G	A	DEL	G	G	T	G	G	A	C	C	T	T	DEL	IN	C	C	G	C	T
Genotype | Taxon	9006Mtp1	Vitis riparia cv. Riparia Gloire de Montpellier	A	G	G	G	-------------------	G	G	T	G	G	A	C	C	T	C	-	G	C	C	A	C	T
Genotype | Taxon	0Mtp567	Vitis vinifera L.	A	G	G	A	TTCTGGTATTGGCGTTGGC	G	G	C/T	G	G	A/C	C	C	T	T	T	-	C	C	G	C	T
Genotype | Taxon	0Mtp636	Vitis vinifera L.	A	G	G	A	TTCTGGTATTGGCGTTGGC	G	G	C/T	G	G	A/C	C	C	T	T	T	-	C/T	C	G	C	T
Genotype | Taxon	1498Mtp1	Vitis vinifera subsp vinifera cv. Espadeiro tinto	A	G	G	A	TTCTGGTATTGGCGTTGGC	G	G	T	G	G	A/C	C	C	T	T	T	-	C	C	G	C	T
Genotype | Taxon	225Mtp2	Vitis vinifera subsp vinifera cv. César	A	G	G	A	TTCTGGTATTGGCGTTGGC	G	G	T	G	G	A	C	C	T	T	T	-	C	C	G	C	T
Genotype | Taxon	0Mtp1323	Vitis vinifera L.	A	G	G	A	TTCTGGTATTGGCGTTGGC	G	G	C	G	G	C	C	C	T	T	T	-	C	C	G	C	T
Genotype | Taxon	8500Mtp23	Vitis vinifera L.	A	G	G	A	TTCTGGTATTGGCGTTGGC	G	G	T	G	G	A	C	C	T	C/T	T	n/a	n/a	n/a	n/a	n/a	n/a

Use case 2: Enter by genome coordinates



Search GrapeMine. Enter **names**, **identifiers** or **keywords** for genes, markers, snp, ontology terms, accessions, etc. (e.g. Vv10s0116g01550, VMC4F8, Vv_1272649, membrane, Syrah).

e.g. VMC3G9, chloroplast

Enter a **list** of identifiers.

Gene

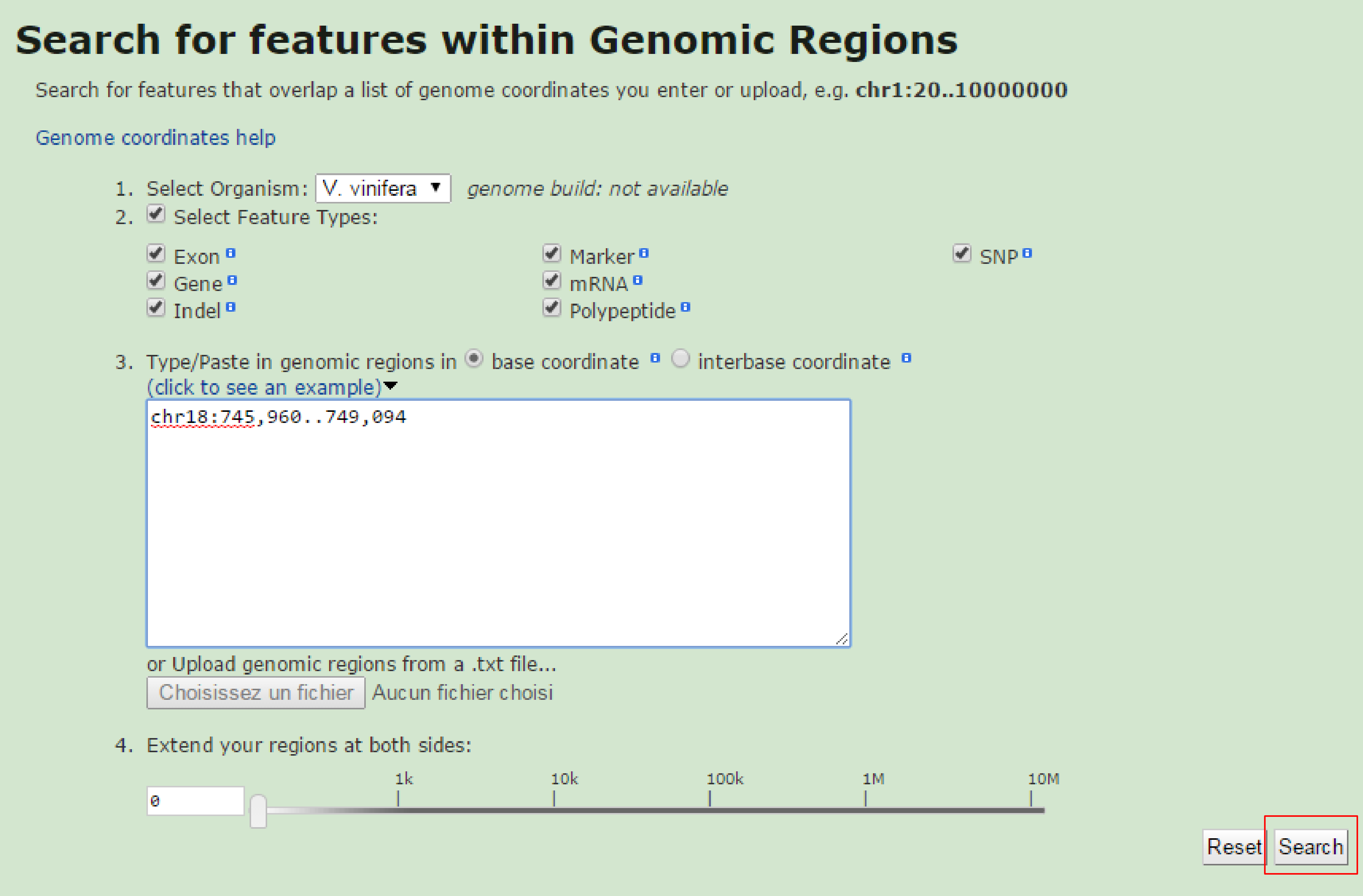
e.g. Vv10s0092g00620, Vv10s0116g00170, Vv10s0116g00240, Vv10s0116g00300

GrapeMine integrates many types of data for *Grapevine*. You can run flexible queries, export results and analyse lists of data. All data are from **GnpIS.**

GrapeMine: http://urgi.versailles.inra.fr/GrapeMine/begin.do

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

GrapeMine: Region form

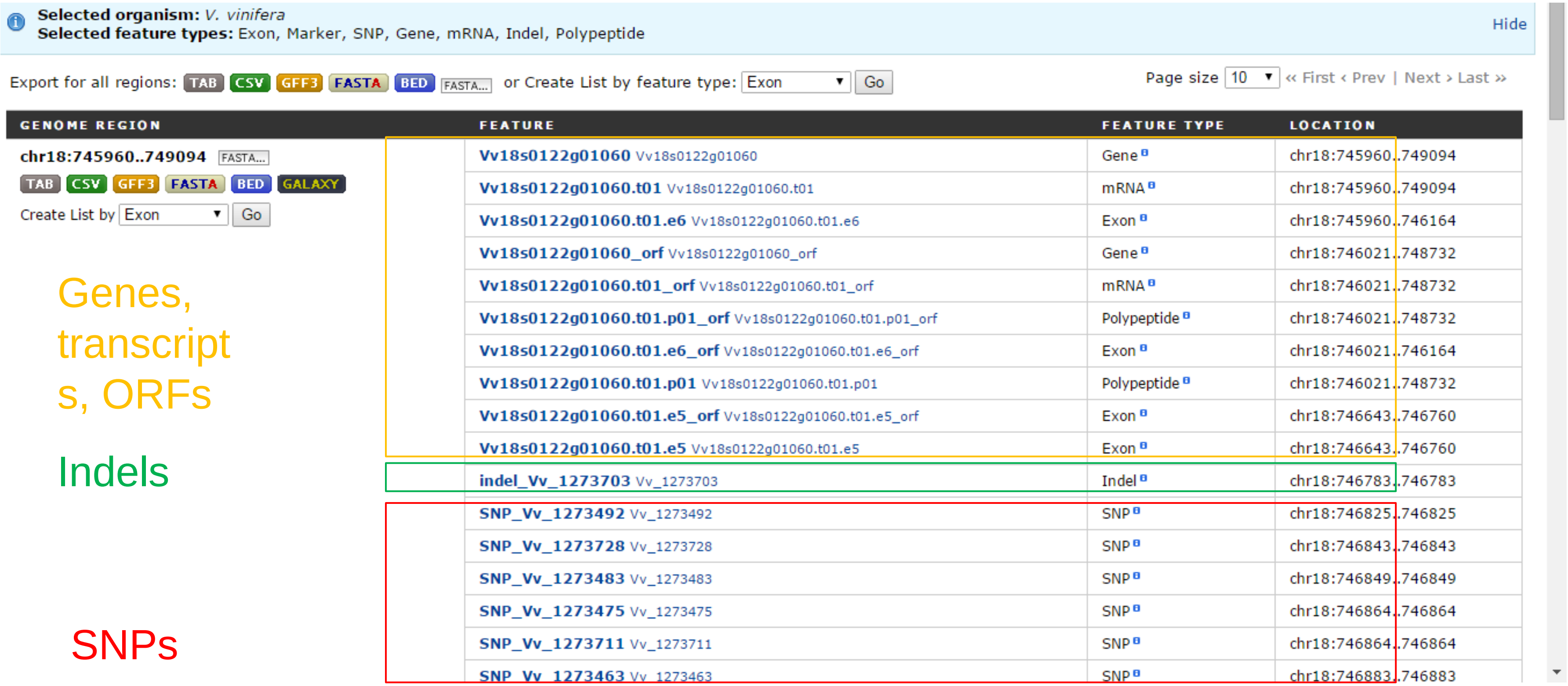


Search for features within Genomic Regions

Search for features that overlap a list of genome coordinates you enter or upload, e.g. **chr1:20..10000000**

Genome coordinates help

1. Select Organism: V. vinifera ▾ *genome build: not available*
2. ☑ Select Feature Types:
   - ☑ Exon
   - ☑ Gene
   - ☑ Indel
   - ☑ Marker
   - ☑ mRNA
   - ☑ Polypeptide
   - ☑ SNP
3. Type/Paste in genomic regions in ● base coordinate ○ interbase coordinate
   (click to see an example)▾
   `chr18:745,960..749,094`
   or Upload genomic regions from a .txt file...
   Choisissez un fichier Aucun fichier choisi
4. Extend your regions at both sides:
   0



Selected organism: *V. vinifera*
Selected feature types: Exon, Marker, SNP, Gene, mRNA, Indel, Polypeptide

Export for all regions: TAB CSV GFF3 FASTA BED FASTA... or Create List by feature type: Exon Go

GENOME REGION	FEATURE	FEATURE TYPE	LOCATION
chr18:745960..749094 FASTA... TAB CSV GFF3 FASTA BED GALAXY Create List by Exon Go	**Vv18s0122g01060** Vv18s0122g01060	Gene	chr18:745960..749094
	Vv18s0122g01060.t01 Vv18s0122g01060.t01	mRNA	chr18:745960..749094
	Vv18s0122g01060.t01.e6 Vv18s0122g01060.t01.e6	Exon	chr18:745960..746164
	Vv18s0122g01060_orf Vv18s0122g01060_orf	Gene	chr18:746021..748732
	Vv18s0122g01060.t01_orf Vv18s0122g01060.t01_orf	mRNA	chr18:746021..748732
	Vv18s0122g01060.t01.p01_orf Vv18s0122g01060.t01.p01_orf	Polypeptide	chr18:746021..748732
	Vv18s0122g01060.t01.e6_orf Vv18s0122g01060.t01.e6_orf	Exon	chr18:746021..746164
	Vv18s0122g01060.t01.p01 Vv18s0122g01060.t01.p01	Polypeptide	chr18:746021..748732
	Vv18s0122g01060.t01.e5_orf Vv18s0122g01060.t01.e5_orf	Exon	chr18:746643..746760
	Vv18s0122g01060.t01.e5 Vv18s0122g01060.t01.e5	Exon	chr18:746643..746760
	indel_Vv_1273703 Vv_1273703	Indel	chr18:746783..746783
	SNP_Vv_1273492 Vv_1273492	SNP	chr18:746825..746825
	SNP_Vv_1273728 Vv_1273728	SNP	chr18:746843..746843
	SNP_Vv_1273483 Vv_1273483	SNP	chr18:746849..746849
	SNP_Vv_1273475 Vv_1273475	SNP	chr18:746864..746864
	SNP_Vv_1273711 Vv_1273711	SNP	chr18:746864..746864
	SNP_Vv_1273463 Vv_1273463	SNP	chr18:746883..746883

Genes, transcripts, ORFs

Indels

SNPs

Zoom on a SNP

SNP : **SNP_Vv_1273492** *V. vinifera*

DB identifier	**Vv_1273492**	Organism . Name	**Vitis vinifera**
Allele	**A/G**	Gnpsnpid	**1273492**
Taxon	**Vitis vinifera L.**		

SHARE

Genome feature

Region:	**SNP**	Length:	1
Location:	**chr18:746825-746825** forward strand		

Overlapping Features

Genome features that overlap coordinates of this SNP

Genes: 2, mRNAs: 2, Polypeptides: 2

Show all in a table »

1 Organism

Name	Taxon Id
Vitis vinifera	29760

1 Data Sets

Name	URL
markersvitis12X	

Lists

This SNP isn't in any lists. Upload a list.

External Links

GBrowse URGI VITIS12X

GNP-SNP URGI VITIS12X

List of the species concerned by this marker

Genotype results

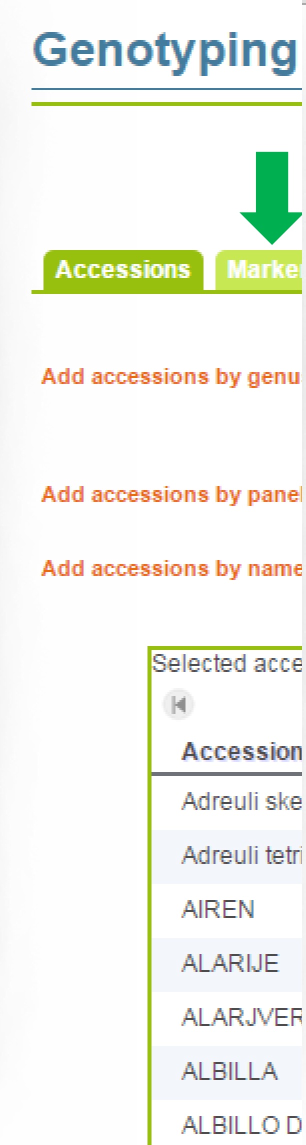
AVAILABLE GENOTYPES

1 2 3 4 ▶ ▶▶ | 34 items found, displaying 1 to 10 | Display 10 ▼ results per page

#	Genotype name	Taxon
1	2082Mtp1	Vitis vinifera subsp vinifera cv. Mehdik
2	9006Mtp1	Vitis riparia cv. Riparia Gloire de Montpellier
3	0Mtp567	Vitis vinifera L.
4	0Mtp636	Vitis vinifera L.
5	8011Mtp12	Vitis berlandieri Planch.
6	225Mtp2	Vitis vinifera subsp vinifera cv. César
7	0Mtp1323	Vitis vinifera L.
8	8003Mtp1	Vitis amurensis Ruprecht
9	324Mtp1	Vitis vinifera subsp vinifera cv. Cabernet franc
10	1186Mtp1	Vitis vinifera subsp vinifera cv. Chirai obak

Diversity in V. vinifera in the chr18: 700K-800k region (1)

GnpIS genotyping form: *https://urgi.versailles.inra.fr/GnpSNP/snp/genotyping/form.do*



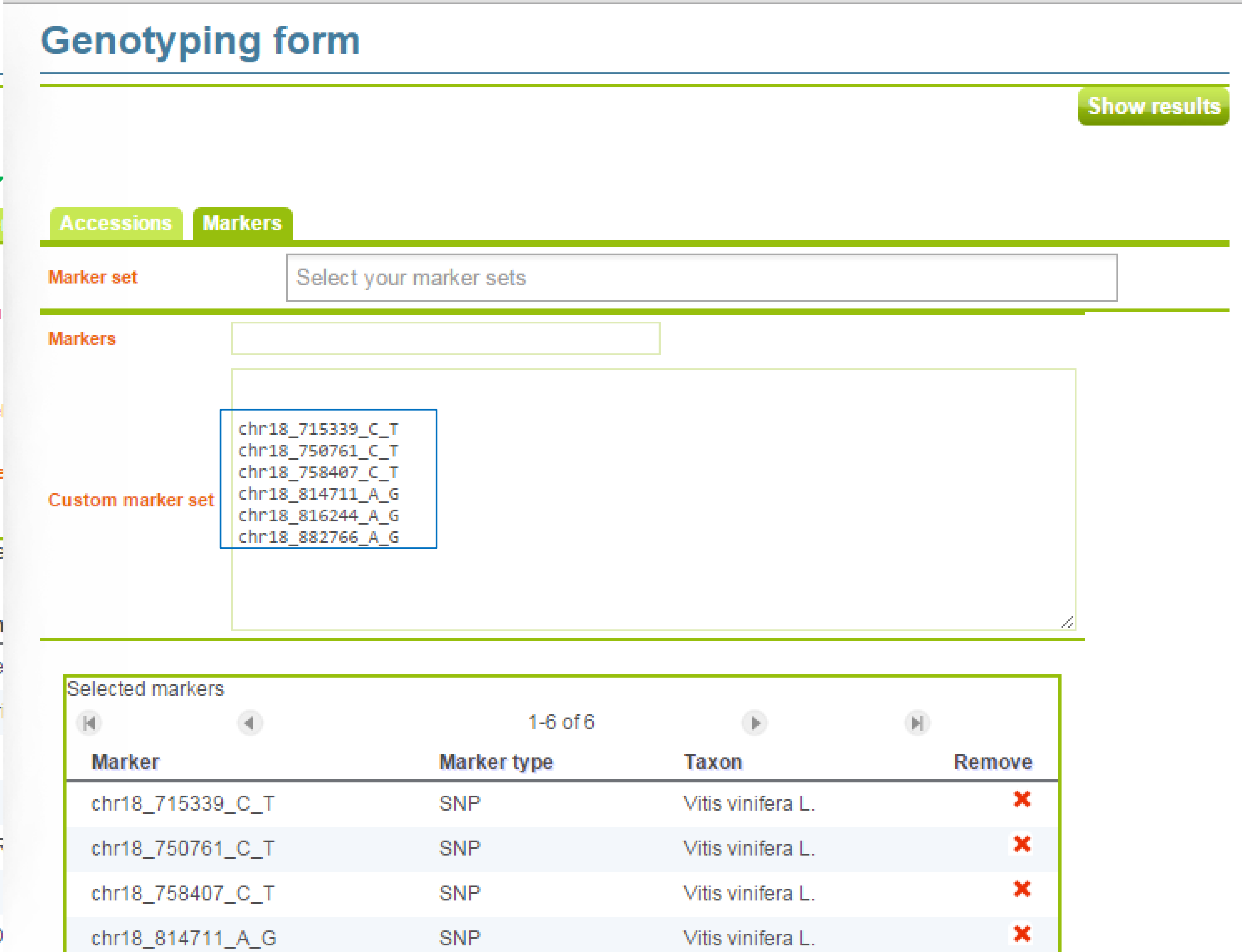
Add accessions by genu

Add accessions by panel

Add accessions by name

Selected acce

Accession
Adreuli ske
Adreuli tetr
AIREN
ALARIJE
ALARJVER
ALBILLA
ALBILLO D



Marker set: Select your marker sets

Markers:

Custom marker set:

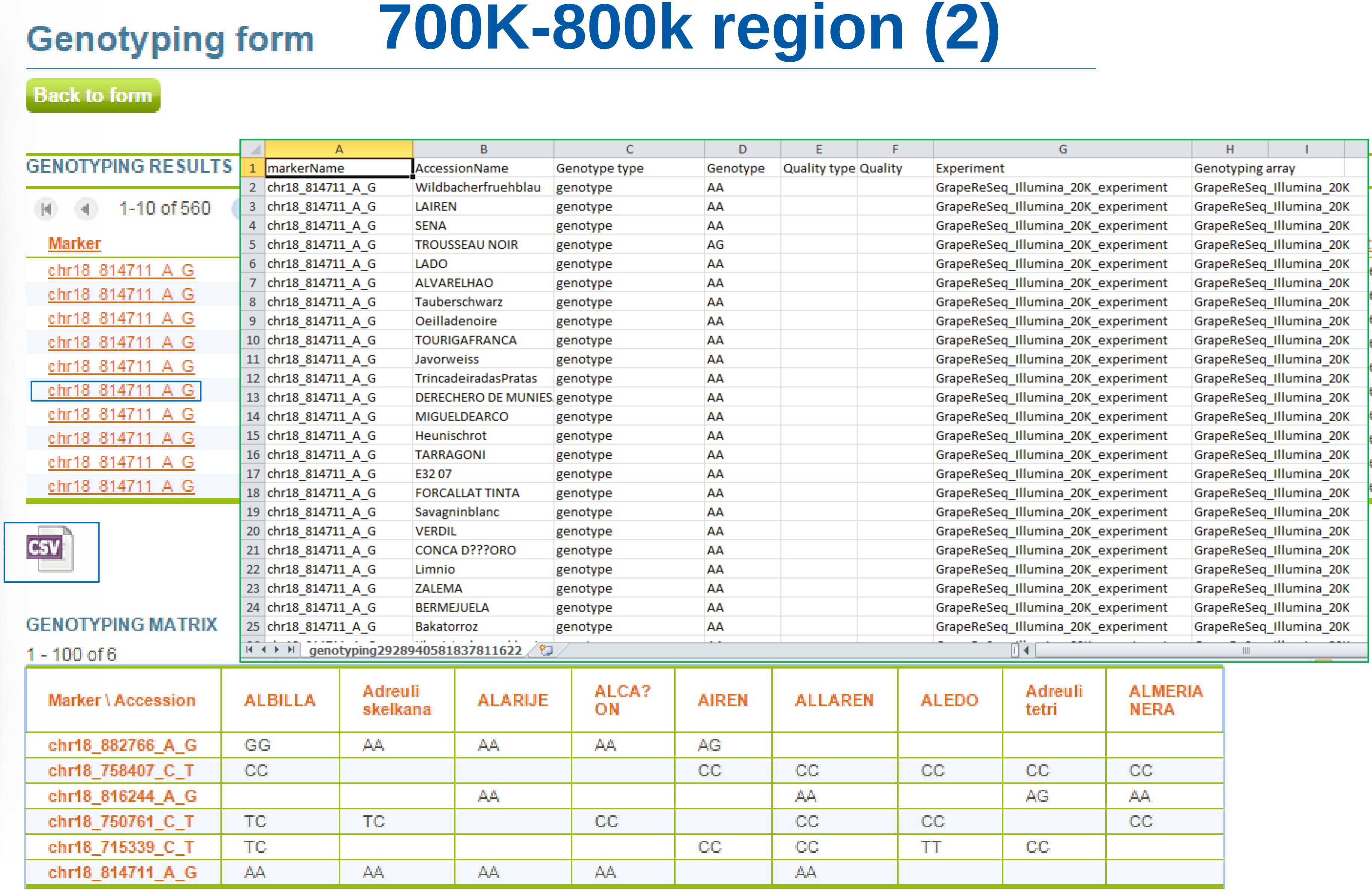
```
chr18_715339_C_T
chr18_750761_C_T
chr18_758407_C_T
chr18_814711_A_G
chr18_816244_A_G
chr18_882766_A_G
```

Selected markers

1-6 of 6

Marker	Marker type	Taxon	Remove
chr18_715339_C_T	SNP	Vitis vinifera L.	✗
chr18_750761_C_T	SNP	Vitis vinifera L.	✗
chr18_758407_C_T	SNP	Vitis vinifera L.	✗
chr18_814711_A_G	SNP	Vitis vinifera L.	✗

Diversity in V. vinifera in the chr18: 700K-800k region (2)



Genotyping form

GENOTYPING RESULTS

Marker
chr18_814711_A_G
chr18_814711_A_G
chr18_814711_A_G
chr18_814711_A_G
chr18_814711_A_G
chr18_814711_A_G
chr18_814711_A_G
chr18_814711_A_G
chr18_814711_A_G
chr18_814711_A_G

	A	B	C	D	E	F	G	H	I
1	markerName	AccessionName	Genotype type	Genotype	Quality type	Quality	Experiment	Genotyping array	
2	chr18_814711_A_G	Wildbacherfruehblau	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
3	chr18_814711_A_G	LAIREN	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
4	chr18_814711_A_G	SENA	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
5	chr18_814711_A_G	TROUSSEAU NOIR	genotype	AG			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
6	chr18_814711_A_G	LADO	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
7	chr18_814711_A_G	ALVARELHAO	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
8	chr18_814711_A_G	Tauberschwarz	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
9	chr18_814711_A_G	Oeilladenoire	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
10	chr18_814711_A_G	TOURIGAFRANCA	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
11	chr18_814711_A_G	Javorweiss	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
12	chr18_814711_A_G	TrincadeiradasPratas	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
13	chr18_814711_A_G	DERECHERO DE MUNIES	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
14	chr18_814711_A_G	MIGUELDEARCO	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
15	chr18_814711_A_G	Heunischrot	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
16	chr18_814711_A_G	TARRAGONI	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
17	chr18_814711_A_G	E32 07	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
18	chr18_814711_A_G	FORCALLAT TINTA	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
19	chr18_814711_A_G	Savagninblanc	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
20	chr18_814711_A_G	VERDIL	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
21	chr18_814711_A_G	CONCA D???ORO	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
22	chr18_814711_A_G	Limnio	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
23	chr18_814711_A_G	ZALEMA	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
24	chr18_814711_A_G	BERMEJUELA	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	
25	chr18_814711_A_G	Bakatorroz	genotype	AA			GrapeReSeq_Illumina_20K_experiment	GrapeReSeq_Illumina_20K	

GENOTYPING MATRIX

Marker \ Accession	ALBILLA	Adreuli skelkana	ALARIJE	ALCA?ON	AIREN	ALLAREN	ALEDO	Adreuli tetri	ALMERIA NERA
chr18_882766_A_G	GG	AA	AA	AA	AG				
chr18_758407_C_T	CC				CC	CC	CC	CC	CC
chr18_816244_A_G			AA			AA		AG	AA
chr18_750761_C_T	TC	TC		CC		CC	CC		CC
chr18_715339_C_T	TC				CC	CC	TT	CC	
chr18_814711_A_G	AA	AA	AA	AA		AA			

Prospects

- **Jbrowse based on the Vitis12X.2 assembly**

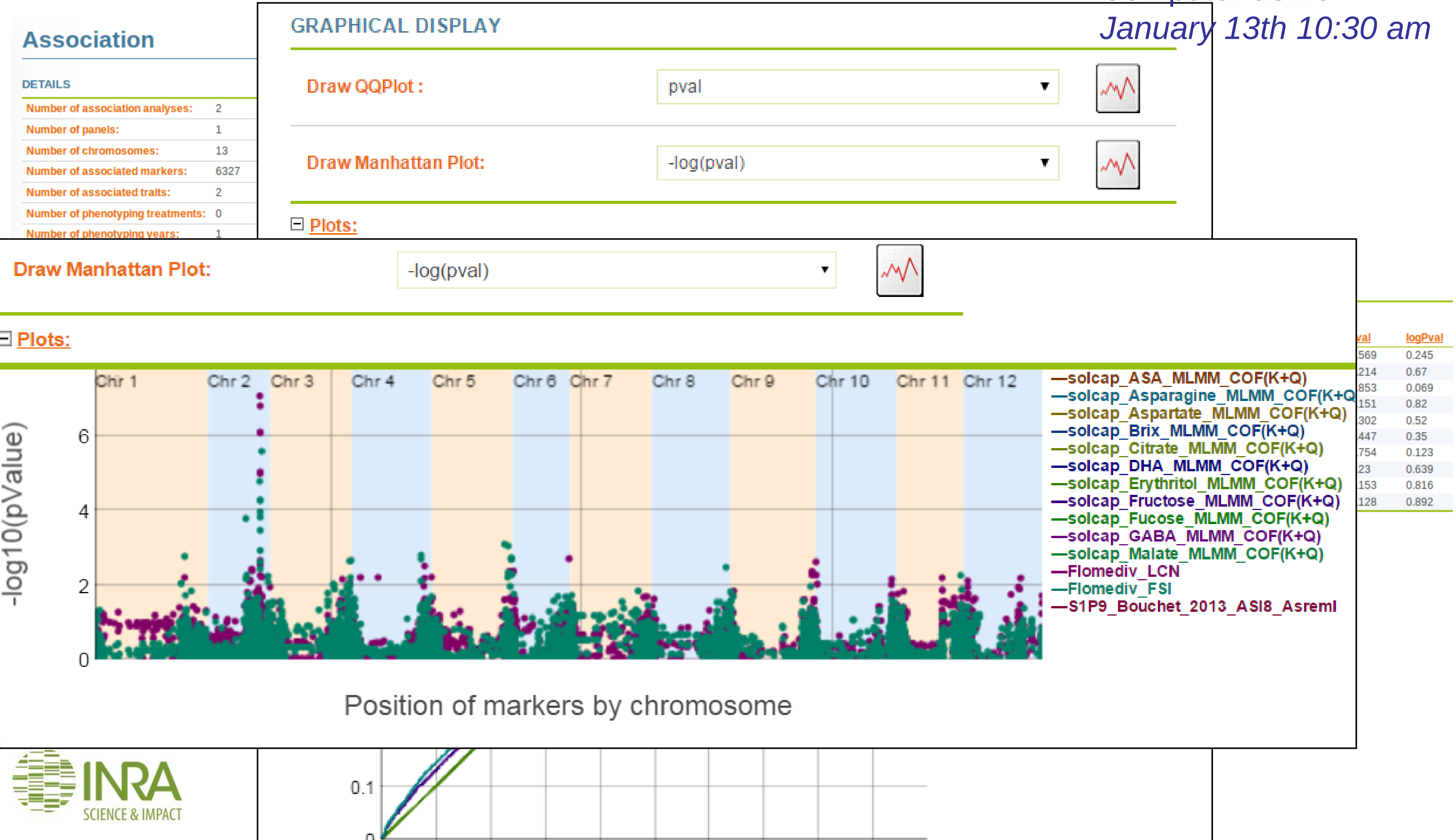
Learn more about this assembly:
https://urgi.versailles.inra.fr/Species/Vitis/Data-Sequences/Genome-sequences

- **Add GWAS Vitis data (INRA)**

Available soon: Vitis GWAS data

GnpIS Genetic Association form:
https://urgi.versailles.inra.fr/association/association/welcome.do

More details on GnpAsso:
Poster #1128
Computer demo
January 13th 10:30 am



Association

DETAILS

Number of association analyses:	2
Number of panels:	1
Number of chromosomes:	13
Number of associated markers:	6327
Number of associated traits:	2
Number of phenotyping treatments:	0
Number of phenotyping years:	1

GRAPHICAL DISPLAY

Draw QQPlot : pval ▾

Draw Manhattan Plot: -log(pval) ▾

⊟ Plots:

Draw Manhattan Plot: -log(pval) ▾

⊟ Plots:

val	logPval
569	0.245
214	0.67
853	0.069
151	0.82
302	0.52
447	0.35
754	0.123
23	0.639
153	0.816
128	0.892

Acknowledgments

- URGI TEAM

- INRA PARTNERS

INRA EPGV, INRA AGAP, INRA URGV…

- PROJECT PARTNERS

Grapereseq, Muscares, SNPGrapeMap…

Part of the transPLANT
European Plant Genomics Infrastructure

THANK YOU FOR YOUR ATTENTION!

Contact: nacer.mohellibi@versailles.inra.fr

Nacer Mohellibi