



Wheat3BMine

a data warehouse dedicated to wheat 3B chromosome data



T. Letellier¹, L. Couderc¹, F. Choulet², M. Spannagl³, C. Pommier¹, J. Li. Gelpi⁴, P. Kersey⁵, H. Quesneville¹, D. Steinbach¹ & M. Alaux¹

thomas.letellier@versailles.inra.fr

¹ INRA, UR1164 URGI, route de Saint-Cyr, RD 10, 78026 Versailles, France

² INRA GDEC, 5 chemin de Beaulieu, Clermont-Ferrand, 63039, France

³ MIPS/IBIS, Helmholtz Zentrum München, 85764 Neuhererg, Germany

⁴ BSC-INB, University of Barcelona, Spain

⁵ EBI, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 1SD, UK



web

Integration and analysis of complex biological data is a key challenge of modern bioinformatics. For this purpose, we developed Wheat3BMine at URGI, (INRA research unit in genomics and bioinformatics dedicated to plants and crop parasites) in the frame of the transPLANT and 3BSEQ projects.

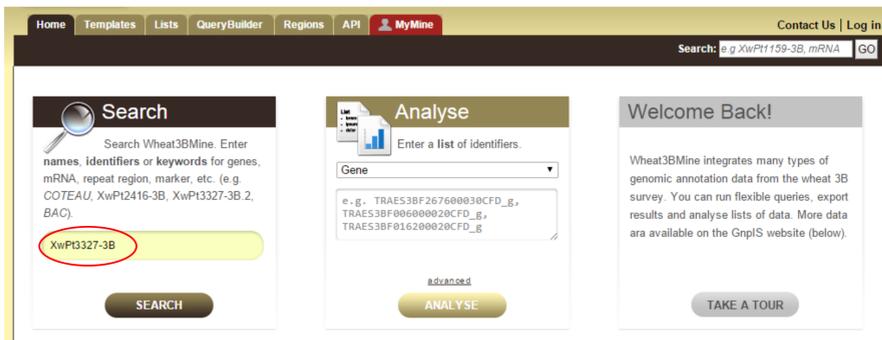
Wheat3BMine is a data warehouse dedicated to the Wheat 3B chromosome:

<http://urgi.versailles.inra.fr/Wheat3BMine/>

It is developed using InterMine technology, providing a fast, flexible and user friendly access to integrated data by multiple ways: a browser, a query builder, a region search tool and so on. Moreover data can be filtered and exported in many formats (GFF3, BED or XML for example).

Wheat3BMine users can make lists of their favorite features and save their own queries, an online documentation and pre-computed queries help them to extract relevant information. Our data warehouse contains heterogeneous data and is gene-centered. Wheat3BMine provides access to genomic annotation data (genes, mRNA, polypeptides), polymorphisms data (markers, transposable elements), genetic mapping data (QTL, metaQTL) or phenotyping data (accessions, evaluation data). In fact our typical gene card centralizes relevant information like function, ontologies or features which overlap this gene.

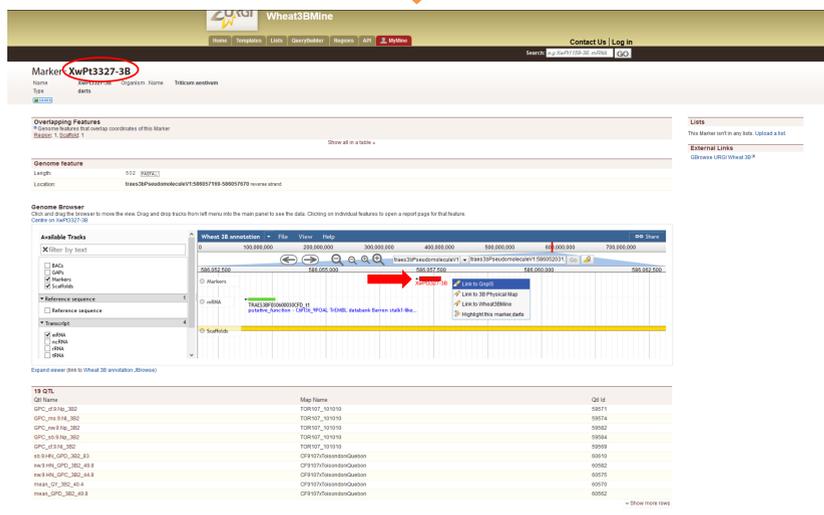
1. Search for a gene or a marker in the quick search



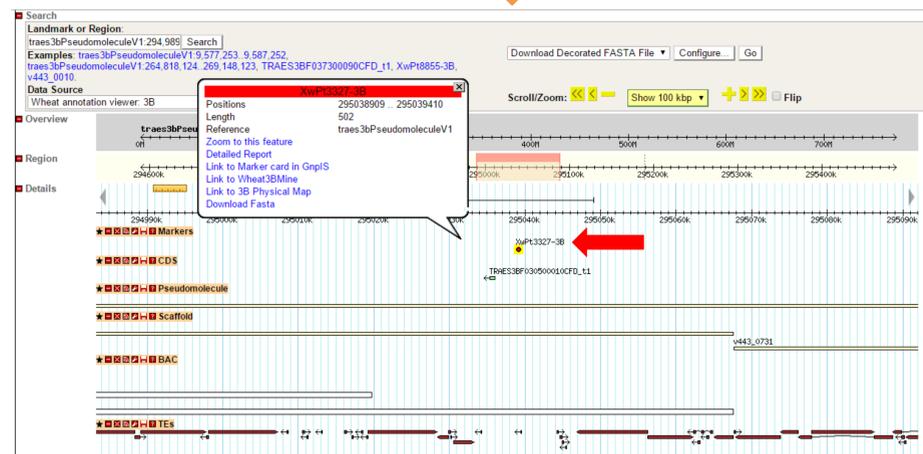
Wheat3BMine home page



GnpIS marker card



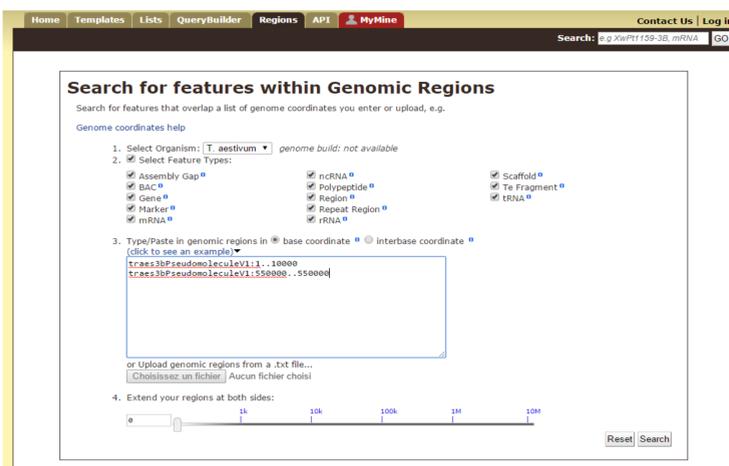
Wheat3BMine marker card



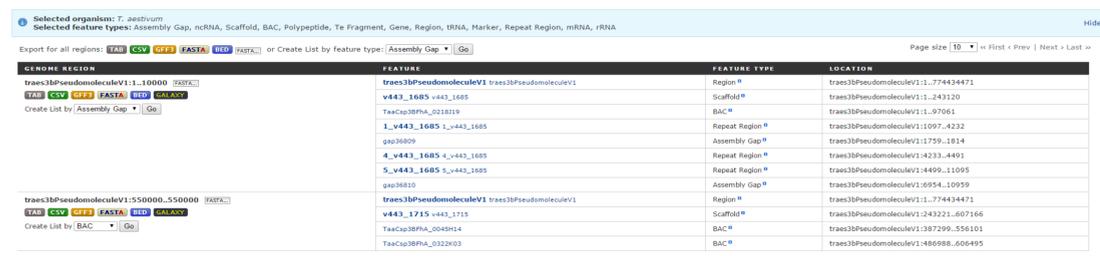
URGI Wheat 3B Annotation GBrowse

Wheat3BMine provides a strong interoperability with GnpIS, URGI JBrowse and GBrowse

2. Search for features with genomic ranges



Region search form



Region search results

GFF3, BED, FASTA, TAB and CSV exports are available

Create and store lists of your favourite features

References:

- GnpIS: an information system to integrate genetic and genomic data from plants and fungi. doi: 10.1093/database/bat058
- InterMine: a flexible data warehouse system for the integration and analysis of heterogeneous biological data. doi: 10.1093/bioinformatics/bts577
- Structural and functional partitioning of bread wheat chromosome 3B. doi: 10.1126/science.1249721

