

BAR ThaleMine

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BAR: Bio-Analytic Resource

About us:

- ▶ One of the largest Plant Biology Resources
- ▶ Paper published in 2005¹
- ▶ Based in University of Toronto, Canada
- ▶ Free to access: <http://bar.utoronto.ca>

Resources Include:

- ▶ Web applications, web services, databases
- ▶ Gene Expression data ([eFP](#), [ePlant](#))
- ▶ Protein-Protein, Protein-DNA Interactions ([AIV2](#))
- ▶ Protein structures ([ePlant](#))

¹Toufighi et al. 2005.

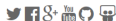
Araport: Arabidopsis Information Portal

A centralized resource for Arabidopsis data²

- ▶ Started in 2013 under the leadership of Prof. Chris Town (JCVI)
- ▶ JCVI, TACC, University of Cambridge
- ▶ Drupal 7 based araport.org page
- ▶ ThaleMine (InterMine instance)
- ▶ App store on araport.org
- ▶ [JBrowse](#)
- ▶ Araport11 re-annotation project
- ▶ Single Sign on to all Araport resources
- ▶ RESTful API for scientific data
- ▶ Community outreach (workshops, conferences, etc)

²Krishnakumar et al. 2015.

Araport: Arabidopsis Information Portal



ARAPORT
ARABIDOPSIS INFORMATION PORTAL

[About ▾](#)[Data ▾](#)[Tools ▾](#)[Community ▾](#)[Developer ▾](#)[Help ▾](#)[Log in ▾](#)[ALL](#)[THALEMINE](#)[JBROWSE](#)

Search ThaleMine, JBrowse and other site content

☒ Search by identifiers or keywords e.g. AT4G19020 or epigenetic

New to Araport?

Araport is a one-stop-shop for *Arabidopsis thaliana* genomics. Araport offers gene and protein reports with orthology, expression, interactions and the latest annotation, plus analysis tools, community apps, and web services. Araport is 100% free and open-source. Registered members can save their analysis, publish science apps, and post announcements. [READ MORE](#)

[REGISTER](#)[LOGIN](#)

THALEMINE



Click to analyze gene lists or drill down to gene reports.

JBROWSE



Click to browse gene structures and other annotation.

APP STORE



Click to build your own analysis tools and share your data.

BAR ePlant



Visual analytic tool for exploring multiple levels of Arabidopsis data.

Araport Highlights



Official Release Jun 2016

529092123/https://www.araport.org/ Re-annotation



Upcoming Events

ICAR, June 19-23

News and Job Postings

★ ABRC Funding Update

2016-04-25

Conferences and Meetings

Frontiers and Techniques In Plant Science

2017-06-30

Araport: Arabidopsis Information Portal

BAR contibution to Araport

- ▶ Provided gene expression database used by BAR eFP Arabidopsis Browser
- ▶ Attended Araport workshop/hackathon in November 2014
- ▶ Interactions Viewer - the first community app published on Araport.org
- ▶ Contributed serveral apps and APIs over the next few years.
- ▶ Biggest contribution: BAR ePlant app.

Araport: Arabidopsis Information Portal

Funding status

- ▶ Lost all funding in 2016
- ▶ Lost almost all staff
- ▶ New application for funding failed

Future of Araport team

- ▶ JCVI, TACC, BAR, TAIR, NCGR
- ▶ First meeting at JCVI in March, 2019
- ▶ BAR got ThaleMine, TAIR got JBrowse, NCGR contributed GCV
- ▶ Every thing else was deprecated
- ▶ News Update: araport.org

Araport ThaleMine to BAR ThaleMine

Araport ThaleMine: A few minor problems

- ▶ Not maintained since 2017
- ▶ Based on InterMine 1.8.5
- ▶ Used modified data
- ▶ Used several custom loader and displayers
- ▶ Some InterMine core and biosource changes where never made upstreams
- ▶ Too difficult to upgrade to InterMine 3.1.2

BAR ThaleMine: Principles

No initial funding. So we follow these rules

Simplicity Keep code to minimum possible lines and contribute as many changes to InterMine (upstream) as possible.

Least Surprise Test and upgrade every minor release (Principle of least astonishment)

Clarity No modification to data

Extensibility Build for the future (Java 11, etc)

Parsimony Write loaders and displays only when we have to.

BAR ThaleMine

- ▶ We started from scratch (using make mine script)
- ▶ Based on Humanmine, FlyMine, and Araport ThaleMine
- ▶ Got most of the loaders working
- ▶ Pushed changed to upstream InterMine
- ▶ So far: ThaleMine v4.1.2-20200127
- ▶ Also on GitHub ThaleMine and ThaleMine Bio Sources

BAR ThaleMine: What's working

- ▶ data categories figure



BAR ThaleMine: Some future plans and Known Issues

The follow is planned

- ▶ Arabidopsis Strains
- ▶ Gene expression data (Araport11 RNA-Seq)
- ▶ Salk data (TDNA-Seq)
- ▶ Gene histories
- ▶ TAIR annotations

Known Issues

- ▶ web properties from ThaleMine web service
- ▶ Bluegene frontend

Acknowledgements