



GENOME DATABASE FOR VACCINIUM

Genomics, genetics, and breeding resources for blueberry, cranberry, bilberry, and lingonberry research

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What's new in GDV?

Outreach

- [How to go from a trait to a GWAS to a gene and to an ortholog](#) (2:52 mins)
- [How to use the Expression Heatmap Tool](#) (2:23 mins)

Upcoming PAG Database Workshop

- [NRSP10 Database Workshop](#) featuring Genome Database for Vaccinium, Jan. 14, 1:30-3:40 PM. Come to the workshop and learn how to use all the available tools and data in the database.

New Data

- 2,098 genetic markers, 1 genetic map, 9 GWAS and 17 QTL added in last quarter
- 2 blueberry expression datasets
- 204 germplasm from USDA-GRIN

Viewing Expression Data

You can now explore more gene or mRNA expression levels on GDV using the Expression Heatmap Tool. This tool displays expression levels of genes or mRNA from published manuscripts. Access the tool via the “Expression Heatmap” link in the Tools menu. You then are taken to an overview page with a few different sections. First

note the table of Expression Datasets that are available with links to more information about the study and the genome the data is aligned to. You can create the heatmap by adding gene/mRNA names to the text box or by selecting the organism and then selecting features from the box or searching for a gene/mRNA name. Then click “Display Expression Heatmap” (also see video linked above).

Choose organism and select from list that populates below

Enter gene or mRNA names here

Expression Heatmap Tool
Feature Expression

Organism
Any Organism

Search Features
Example: Kinase, GO:0008343
Type a search term above to search for features

Feature unique names need to be separated by commas.
Enter feature unique names
Try an example
Example: VaccDscff1001-augustus-gene-0.2,VaccDscff1004-augustus-gene-0.6,VaccDscff1004-processed-gene-0.5,VaccDscff1007-augustus-gene-0.9,VaccDscff100-augustus-gene-1.25,VaccDscff100-augustus-gene-0.26,VaccDscff1-augustus-gene-0.30,VaccDscff1-augustus-gene-116.49,VaccDscff1-augustus-gene-150.17
Example feature unique names: VaccDscff1001-augustus-gene-0.2,VaccDscff1004-augustus-gene-0.6,VaccDscff1004-processed-gene-0.5,VaccDscff1007-augustus-gene-0.9,VaccDscff100-augustus-gene-1.25,VaccDscff100-augustus-gene-0.26,VaccDscff1-augustus-gene-0.30,VaccDscff1-augustus-gene-116.49,VaccDscff1-augustus-gene-150.17
Display Expression Heatmap

Links to dataset and genome details

Expression Analysis	Aligned to
Expression: Roots of <i>V. corymbosum</i> during pH stress	Vaccinium corymbosum W8520 draft genome sequence
Expression: Roots of <i>V. arboreum</i> during pH stress	Vaccinium corymbosum W8520 draft genome sequence
Expression: <i>Vaccinium virgatum</i> leaves, berries and buds	Vaccinium virgatum transcriptome 2017
Expression: <i>V. corymbosum</i> cv. Draper Tissue during Fruit Development, FPKM	Vaccinium corymbosum cv. Draper v1.0 genome sequence
Expression: Monotropein biosynthesis in blueberry	Vaccinium corymbosum cv. Draper v1.0 genome sequence
Expression: UV-B treatment of blueberry calli	Vaccinium corymbosum cv. Draper v1.0 genome sequence

Heatmap and Gene/mRNA and Biosample Pages

There are links to details about the gene/mRNA and the sequenced samples along the axes of the heatmap. You can also adjust what is displayed on the heatmap and download the data.

Feature Expression Heatmap

Select an analysis to display

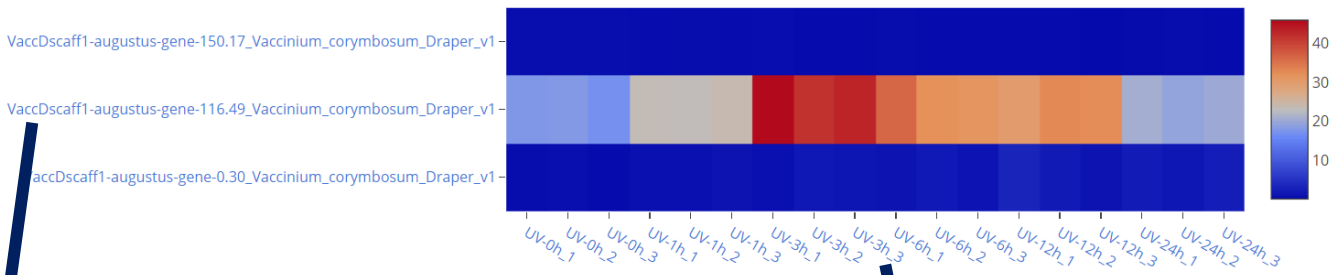
Expression: UV-B treatment of blueberry calli

Select a property to sort

cultivar

Adjust how the data is displayed

Expression: UV-B treatment of blueberry calli Expression



Expression

Available Analyses

- Expression: V. corymbosum cv. Draper Tissue during Fruit Development, FPKM
- Expression: Monotropein biosynthesis in blueberry
- Expression: UV-B treatment of blueberry calli

Select an Expression Analysis

Expression: V. corymbosum cv. Draper Tissue during Fruit Development, FPKM

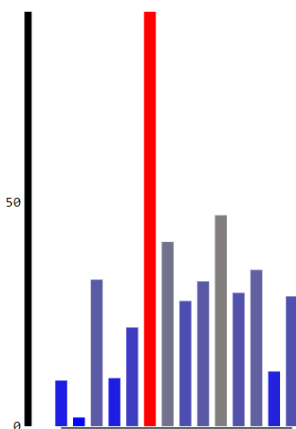
Select a property to group and sort biological samples collected_by

Select a property to color biological samples Expression value

Hover the mouse over a column in the graph to view more information about that biological sample group along the x-axis. You can also click and drag to move the legend.

Only Non-Zero Values | Reset

Expression by



Expression Details pane on gene or mRNA details page

Biosample Overview

Name	UV-3h_3
Organism	Vaccinium corymbosum (northern highbush blueberry)
Analysis	Expression: UV-B treatment of blueberry calli
Collection Date	n/a
Location	China: Changchun
Tissue	Callus
Description	This biomaterial: UV-3h_3, was created for the analysis:
Sample name	UV-3h_3
Cultivar	Northland
Treatment	3 h
Biomaterial provider	Chunyu Zhang
Biosample accession	SAMN31399481
Sra accession	SRS15496599
Contact	Chunyu Zhang

Details about samples that were sequenced

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