



## What's New in CottonGen?

### Outreach

- [How to Use the Expression Heatmap Tool](#) (2:23 mins)

### Upcoming PAG Database Workshop

- NRSP10 Database Workshop featuring CottonGen Database, Jan. 14, 1:30-3:40 PM.
- International Cotton Genome Initiative (ICGI) Workshop, Jan 14, 4:00-6:10 PM

### Tool Improvements

- Heatmap tool for visualizing gene expression
- GWAS added to updated QTL/GWAS search

### New Data

- 2126 GWAS data for agronomic ([Du 2019](#)) and root system traits ([Cui 2022](#))
- Gene Expression data from a root system study ([Cui 2022](#)), a Root-Knot nematode resistance study ([Ojeda-Rivera 2022](#)), and *V. dahliae* resistance study ([Dong 2019](#))
- Added RBTN 2022 fiber trait data
- A new community project [iCottonQTL – An R/Shiny Web App for Streamlining Cotton Genetic Mapping](#)

### New Genome Data/Functional Analysis

Eleven new diploid genomes and annotation datasets.

4 of them were submitted by CAAS-CRI ([Xu, 2023](#)):

- [G. harknessii \(D2-2\) genome CRI v1](#)
- [G. klotzschianum \(D3-k\) genome CRI v1](#)
- [G. gossypioides \(D6\) genome CRI v1](#)
- [G. trilobum \(D8\) genome CRI v1](#)

The other 7 collected from publication ([Wang, 2022](#)):

- [G. herbaceum \(A1\) 'ZhongCao1' genome HAU v1](#)
- [G. herbaceum \(A1\) 'A1a wild' genome HAU v1](#)
- [G. anomalum \(B1\) genome HAU v1](#)
- [G. sturtianum \(C1\) genome HAU v1](#)
- [G. stocksii \(E1\) genome HAU v1](#)
- [G. longicalyx \(F1\) genome HAU v1](#)
- [G. bickii \(G1\) genome HAU v1](#)

CottonGen's functional annotations were added to all the above genomes, too.

Species - Data - Search - Tools - ICGI - General - Help - Data Curation - My account -

### Tripal MegaSearch

Tripal MegaSearch is a tool for downloading biological data. (Current version: 1.0.0) | Video tutorial: Gene/Transcript | QTL | Map | Marker | GWAS

Select a data type to start building your own query and download data.

Data Type:

9,548 QTL/GWAS. Note: actual rows in downloaded file depend on search criteria.

Query:

Type:

Dataset:

Organism:   
Any  
Gossypium anomalum  
Gossypium arboreum  
Gossypium arboreum x herbaceum

Trait:

Trait Category:

Trait Name:

- Search Colleague
- Search Genes and Transcripts
- Search Genotype
- Search Germplasm
- Search Images
- Search Map
- Search Markers
- Search Orthologs and Paralogs
- Search Publications
- Search QTL/GWAS
- Search Sequences
- Search Trait
- Search Trait Descriptors
- Search Trait Evaluation
- MegaSearch

QTL/GWAS Label  
 Trait Name  
 GWAS Marker  
 Gene  
 Organism  
 Genome Group  
 Type  
 Dataset  
 Published Symbol  
 P value

Start searching for **QTL/GWAS** then select 'GWAS' as the Data type, and from the right panel, select the fields you want to include in your search results. Go to page 2 for the GWAS results and more.



# COTTONGEN

COTTON DATABASE RESOURCES

Issue 9 | October 2023

**GWAS result table shows the data that you chose.**

From the result table, you can go to pages like GWAS, marker, gene, trait, MapViewer, and JBrowser.

2029 records were returned

| #  | QTL/GWAS Label                       | Trait Name    | GWAS Marker              | Gene        | Genome Group | P value            | Genome  |
|----|--------------------------------------|---------------|--------------------------|-------------|--------------|--------------------|---|
| 1  | <input type="checkbox"/> GWAS0000099 | stem diameter | AD1-NBI_SNP_A03_38175622 |             | AD           | 3.4673685045253E-7 | Gossypium hirsutum (AD1) TM-1 genome NAU-NBI_v1.1 |
| 2  | <input type="checkbox"/> GWAS0000100 | stem diameter | AD1-NBI_SNP_A03_38175638 |             | AD           | 3.4673685045253E-7 | Gossypium hirsutum (AD1) TM-1 genome NAU-NBI_v1.1 |
| 3  | <input type="checkbox"/> GWAS0000101 | stem diameter | AD1-NBI_SNP_A05_56530317 | Gh_A05G2781 | AD           | 3.4673685045253E-7 | Gossypium hirsutum (AD1) TM-1 genome NAU-NBI_v1.1 |
| 4  | <input type="checkbox"/> GWAS0000102 | stem diameter | AD1-NBI_SNP_A07_78230369 | Gh_A07G2152 | AD           | 3.7153522909717E-7 | Gossypium hirsutum (AD1) TM-1 genome NAU-NBI_v1.1 |
| 5  | <input type="checkbox"/> GWAS0000103 | stem diameter | AD1-NBI_SNP_A09_56583407 | Gh_A09G0876 | AD           | 3.4673685045253E-7 | Gossypium hirsutum (AD1) TM-1 genome NAU-NBI_v1.1 |
| 6  | <input type="checkbox"/> GWAS0000104 | stem diameter | AD1-NBI_SNP_A10_38090799 | Gh_A10G1027 | AD           | 3.4673685045253E-7 | Gossypium hirsutum (AD1) TM-1 genome NAU-NBI_v1.1 |
| 7  | <input type="checkbox"/> GWAS0000105 | stem diameter | AD1-NBI_SNP_A10_46301062 |             | AD           | 3.4673685045253E-7 | Gossypium hirsutum (AD1) TM-1 genome NAU-NBI_v1.1 |
| 8  | <input type="checkbox"/> GWAS0000106 | stem diameter | AD1-NBI_SNP_A11_78642392 | Gh_A11G2222 | AD           | 3.4673685045253E-7 | Gossypium hirsutum (AD1) TM-1 genome NAU-NBI_v1.1 |
| 9  | <input type="checkbox"/> GWAS0000107 | stem diameter | AD1-NBI_SNP_A12_49243188 | Gh_A12G0824 | AD           | 3.4673685045253E-7 | Gossypium hirsutum (AD1) TM-1 genome NAU-NBI_v1.1 |
| 10 | <input type="checkbox"/> GWAS0000108 | stem diameter | AD1-NBI_SNP_A12_76550211 | Gh_A12G1593 | AD           | 3.4673685045253E-7 | Gossypium hirsutum (AD1) TM-1 genome NAU-NBI_v1.1 |

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## GWAS Marker Gene Page

Gh\_A05G2781, TU.Gh\_A05G2781\_NBI-AD1\_v1.1 (gene) Goss

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Gene Overview

|                    |   |
|--------------------|---|
| <b>Name</b>        | Gh_A05G2781                               |
| <b>Unique Name</b> | Gh_A05G2781_NBI-AD1_v1.1                  |
| <b>Type</b>        | gene                                      |
| <b>Organism</b>    | <i>Gossypium hirsutum</i> (Upland Cotton) |

GWAS0000101

## GWAS Page

- GWAS Overview
- Genome Location
- Germplasm
- Properties
- Publications
- Terms

GWAS Overview

|                           |  |
|---------------------------|--|
| <b>GWAS Label</b>         | GWAS0000101 [ MapViewer ]  |
| <b>Published Symbol</b>   | SD   |
| <b>Trait Name</b>         | stem diameter  |
| <b>Trait Alias</b>        | N/A  |
| <b>GWAS Marker</b>        | AD1-NBI_SNP_A05_56530317   |
| <b>GWAS Study</b>         | AD1-NBI_root-trails_CRI-Chen-2022_GWAS                             |
| <b>Genome Assembly</b>    | Gossypium hirsutum (AD1) TM-1 genome NAU-NBI_v1.1                  |
| <b>Statistical Method</b> | N/A  |
| <b>Experimental Model</b> | N/A  |
| <b>GWAS Panel</b>         | AD1-NBI_CRI-Cul-200  |
| <b>LOD</b>                | N/A  |
| <b>P Value</b>            | 3.4673685045253E-7   |
| <b>R2</b>                 | N/A  |
| <b>Unique key</b>         | 3784-AD1-NBI_CRI-Cul-200(SD)CN_HA_GH_Hyd3 AD1-NBI_SNP_A05_56530317 |
| <b>MAF</b>                | 0.5  |
| <b>Allele</b>             | C/T  |
| <b>LgP</b>                | 6.46   |

[Gene Overview](#)

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Sequences

The following sequences are available for this feature:

- gene from alignment at A05:56534767..56535132-

gene from alignment at A05:56534767..56535132-

Legend: mRNA

Hold the cursor over a type above to highlight its positions in the sequence below.

```
>Gh_A05G2781_NBI-AD1_v1.1 ID=Gh_A05G2781_NBI-AD1_v1.1; Name=Gh_A05G2781; organism =Gossypium hirsutum; type=gene; length=366bp; location=Sequence derived from: A05:56534767..56535132- (Gossypium hirsutum)
ATGACATGCTTTAGTATCTCAGTGGCTTGGTGTCTCAATCTC TGTAGGATGCCCGGACATAAACTCTCC
TCCAGAGCAAGAAAAGAA TTTGTCAGCAGCTTGAAGATCATCTCACTCGGTGTCGACAGGAAATTA TCACAAAGT
GGAGTAAAAATTTCCCAACAGGAGAAAATAATATATC AGAATGCTCATTACACCTGTGAAGAGATCTTAGACCC
TATACAACTG GTATTGGGAGAAAGTATGGATCCCCAAGGCATAAACATGTACTT GAATTGATCAAAGATT
AGAAATCAAGAGAAATGAGACGCAATATGGG AAGGAAAAGAAAATAG
```

AD1-NBI\_SNP\_A05\_56530317

## GWAS Marker Page

[Marker Overview](#)

[Alignments](#)

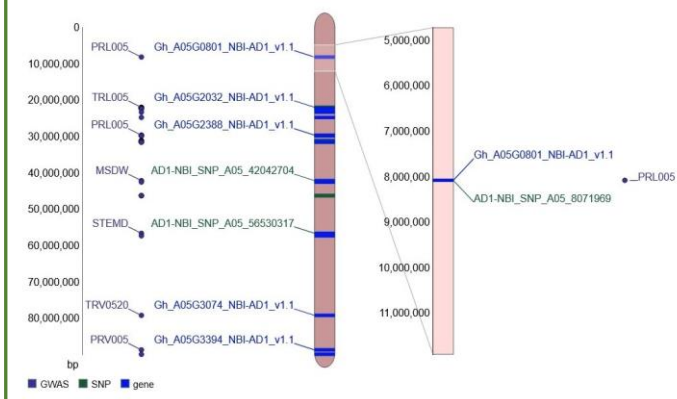
[Annotated Terms](#)

[Publications](#)

Marker Overview

|                        |                           |
|------------------------|---------------------------|
| <b>Name</b>            | AD1-NBI_SNP_A05_56530317  |
| <b>dbSNP ID</b>        | N/A                       |
| <b>Type</b>            | SNP                       |
| <b>SNP Alleles</b>     | C/T                       |
| <b>Species</b>         | <i>Gossypium hirsutum</i> |
| <b>Publication</b>     | [view all]                |
| <b>Associated With</b> | GWAS0000101               |

## GWAS in MapViewer



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