





July 2024

Welcome to the 3rd issue of the CottonGen newsletter in 2024. This newsletter is issued to inform users about new or updated data and tools in CottonGen. In addition to new and updated data, each issue will provide more information on data or tools in the featured tools/data section.

## What's New in CottonGen?

#### Short video tutorial

- Search and Download Protein Sequences. (1:26mins)
- How to use the Ortholog/Paralog search. (2:01mins)

#### New data and Tools

Relationships Sequences

- Four maps with 50 QTLs from Li et al. QTL mapping of agronomic and economic traits for four F2 populations of upland cotton
- One map with 148 QTLs from **Abdelraheem et al.** QTL analysis of agronomic, fiber quality, and abiotic stress tolerance traits in a recombinant inbred population of pima cotton.
- Three gene annotation data from MicroPub Biol publications (Hernandez et at. or Graffam et al., or Zirkel et al.)
- CottonGen Team aligned markers on two G.hirsutum genomes: Gossypium hirsutum (AD1) 'TM-1' genome NAU-NBI v1.1 and Gossypium hirsutum (AD1) 'TM-1' genome UTX v2.1. New JBrowse tracks were added to the two genomes for the aligned marker locations and identified QTLs and GWAS locations (See Page 2 for detailed information).

# New Genome Assemblies and Functional **Annotations**

Three G. hirsutum cultivar genomes obtained from DOE-JGI:

- Gossypium hirsutum (AD1) 'UA48' genome HGS v1.1
- Gossypium hirsutum (AD1) 'UGA230' genome HGS v1.1
- Gossypium hirsutum (AD1) genome HGS v1.1

Three Kokia genomes from (Kayal et al., 2024):

- Kokia cookei 'WAI 16c69' genome ISU v1
- Kokia drvnarioides aenome ISU v1

K et al.)okia kauaiensis 'WAI 19s9' genome ISU v1

Functional annotations (InterProScan, Protein, Homologies, and Synteny Analysis) were added to these genomes, too.

Gene annotations added Gohir.A02G039501.1 from Zirkel et al. Transcript Overview Cross References Alianments External references for this mRNA Analyses Database Contact NCBI Protein XP 016732548 Cross References A0A1U8MC48 DB:uniprot Homology Orthologs Publications

Gossypium hirsutu Gohir.A02G03950 protein involved in	1.1, encodes a	potential DNA-binding ALOG
Publication Overview Features	Publication Overview	
Properties	Title	Gossypium hirsutum gene of unknown function, Gohir.A02G039501.1, encodes a potential DNA- binding ALOG protein involved in gene regulation.
	Authors	Zirkel J, Hulse-Kemp AM, Storm AR
	Туре	Journal Article
	Journal Name	microPublication biology
	Volume	2023
	Vear	2022



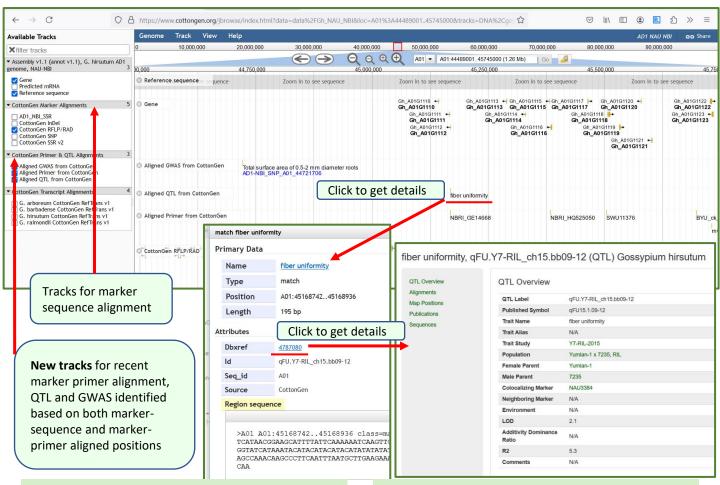




July 2024

### Aligned marker Primers and new JBrowse tracks

We are looking for ways to take existing data and make it more useful for researchers. For this purpose, we aligned all marker sequences using BLAT to genomes to make the genome comparable with genetic maps. Recently, we aligned PCR-based marker primer sequences using BLAST to genomes. We then mapped QTLs which are associated with both marker-sequence and marker-primers aligned markers to genomes. We have also added three new JBrowse tracks for the new marker-primer aligned positions, and tracts for QTL and GWAS positions, which were identified based on both marker-sequences and marker primers alignments.



Join the **CottonGen Mailing List** and follow us on **Twitter** 

### Funded by:

Cotton Inc.; USDA-ARS; Bayer CS; CORTEVA; USDA National Research Project (NRSP10)