# Addition File 4: Snapshots of the search module

Figure S4-1: S	Snapshots of the	Browse page:	browse gene	es by genomic	position	2
Figure S4-2: S	Snapshots of the	Browse page:	browse gene	es by genetic 1	marker	4
Figure S4-3: S	Snapshots of the	BLAST page.				6
Figure S4-4: S	Snapshots of the	Search page: s	earch by gei	ne ID/name		7
Figure S4-5: S	Snapshots of the	Search page: s	search by do	main or funct	tion annotatio	ons.
						9
Figure S4-6: S	Snapshots of the	Search page: s	earch by gei	ne expression	profiles	.11
References					•••••	.12

## Browse Genes in Cotton 3

	by Genetic Mi	arker					_			
ions Gossypium hi	rsutum, NAU 👻	Chromosome A01 - Start 1000000 -	3000000		End	Update		Use geno	r sp ome	ecify location
now 150 Ge	Select & BLAST	yion A01:1,000,000-3,000,000 in Gossyy Select & Phylogenetic Tree Build Select & Store	oium hir	rsutum (	NAU Search	assemb	y) Ⅲ-	<u>a</u> .		
Gene ID  🔶	Gene Name  🍦	Description	Start	End	Strand	Links				
Gh_A01G0119	ERF053	Ethylene-responsive transcription factor ERF053	1,008,923	1,010,191	+	Structure; Don	nain; Homo	logy; GO;		
Gh_A01G0120	RMA1H1	E3 ubiquitin-protein ligase RMA1H1	1,023,424	1,024,188	-	Structure; Don	nain; Homo	logy; GO;		
Gh_A01G0121	UBC38	Putative ubiquitin-conjugating enzyme E2 38	1,041,997	1,044,247	-	Structure; Don	nain; Homo	logy; GO;		
Gh_A01G0122	NA	ΝΑ	1,048,448	1,048,951	-	Structure; Don	nain; Homo	logy; GO;		Result gen
Gh_A01G0123	NSE4A	Non-structural maintenance of chromosomes element 4 homolog A	1,053,235	1,055,912	+	Structure; Don	nain; Homo	logy; GO;		list table
Gh_A01G0124	RPS5	Disease resistance protein RPS5	1,064,885	1,067,521	+	Structure; Don	nain; Homo	logy; GO;		list table
Gh_A01G0125	At5g63020	Probable disease resistance protein At5g63020	1,081,116	1,083,758	+	Structure; Don	nain; Homo	logy; GO;		
Gh_A01G0126	NA	NA	1,123,288	1,123,602	+	Structure; Don	nain; Homo	logy; GO;		
Gh_A01G0127	NA	NA	1,124,825	1,125,130	-	Structure; Don	nain; Homo	logy; GO;	1	
Gh_A01G0128	NA	NA	1,178,670	1,178,861	-	Structure; Don	nain; Homo	logy; GO;		
wing 1 to 10 of 150	) rows 10 + reco	ords per page		¢	1 2	3 4 5		15 >		
rowse Vie	NS									

## Figure S4-1: Snapshots of the Browse page: browse genes by genomic position.

This snapshot displayed 150 genes in region A01:1,000,000-3,000,000 in G. hirsutum

(NAU assembly), which was the default value when first visiting the Browse page.

## Browse Genes in Cotton 3

By G	enomic Position	By Genetic M	larker					-	ı	
Optio	ns								F	User specify a pair of
Species	Gossypium hirsut	tum, NAU 🔻	Start Marker	JESPR0152	-	NAU3040	End Marker	Update	J	genetic marker IDs

#### Marker Information

	Start Marker	End Marker		
ID	JESPR0152	NAU3040		
Alias	JESPR152	MA		Show marker
Туре	SSR	SSR		information
Source Species	hirsutum	raimondii		
Мар	AD-genome wide Reference Map (2009)	AD-genome wide Reference Map (2009)		imported from
Linkage Group	AD-genome wide Reference Map (2009).Ref-chr10	AD-genome wide Reference Map (2009).Ref-chr15		CottonGen
Sequence	GATGCACCAGATCCTTTTTATAGTTTATARGGATTACCAACTAAATAGAAGAAGAAGAAG AAGAGGAAGAAGAAGAAGAAAGA	ARARGCOGTGCTARCTGARTACAGTTCTTTTAGGCTTTTGCARCAGGGARGCTT TTCCTTCCTACAGTATGTCTTTTTTTTTGGARATGTTTATAGGTTTCGARAT ACTTGGRCARTTACCGATTTCCARGTTTTGCCATARGACTTTTATCAGTCTCG ATARACCCGTAGTTTCGGGGTGTTGGGART	CCTTCC SGCAAA ATGATG	database
Primer 1	GATGCACCAGATCCTTTTATTAG	AARAGCCGTGCTAACTGAAT		
Primer 2	GGTACATCGGAATCACAGTG	AATCACAAACACCCGAAACT		
Physical Positions (Best)	Gossypium raimondii (JGI): <u>NA</u>	Gossypium raimondii (JGI): Chr02:61,729,007-61,729,216		Show markers
	Gossypium raimondii (BGI): NA	Gossypium raimondii (BGI): Chr02:1,035,849-1,036,058		physical
	Gossypium arboreum (BGI): <u>NA</u>	Gossypium arboreum (BGI): Chr02:69,391,280-69,391,482	-	positions among
	Gossypium hirsutum (BGI): scaffold238.1:1,447,946-1,448,279	Gossypium hirsutum (BGI): A09:41,262,967-41,263,172		cotton species
	Gossypium hirsutum (NAU): D01:59,289,789-59,290,090	Gossypium hirsutum (NAU): D01:60,440,750-60,440,959		*
	Gossypium barbadense (NAU): D01:58,919,930-58,920,135	Gossypium barbadense (NAU): scaffold_1679.D01:156,016-156,2	25	

Continue on the next page...

## Continue the previous page ...

Physical Position in Sele	ected Genome	Show relevant
Filter By		marker position in
Min. BLAT Query Coverage (%	<b>9</b> 5 🗘	genomes. The
Min. BLAT Identity (%	o) 90 😫	manning narameters
Max. Return Hit Number Per Marke	r 50 😫	aculd be sustemized
	Update	could be customized.
Selected Position: D01:59,289,78	39-59,290,090	Selected Position: D01:60,440,750-60,440,959
Select & Confirm Position	Search III - Z -	Select & Confirm Position Search 🛄 🗸 Users show
Start Marker: JESPR0152		End Marker: NAU3040
Chromosome 🍦 Start	End Coverage 🔶 Identity 🔶	Chromosome 🔄 Start End Coverage 🔶 Identity 🗧 positions
D01 59,289,789	59,290,090 98.71 98.28	D01 60,440,750 60,440,959 100 98.1 they want
Showing 1 to 1 of 1 rows		O A01 98,793,134 98,793,339 100 95.71
2		Showing 1 to 2 of 2 rows
	Confirm Your Selec	tion & Fatch Genes
Shaw 446 Canaa in Daa		
show 116 Genes in Reg	100 DU1:59,289,789-60,440	J,959 In Gossypium hirsutum (NAU assembly)
Select & Analysis Select & BLAST	Select & Phylogenetic Tree Build Select & Select	tore Search III - Z -
🗌 Gene ID 🕴 Gene Name 🕴	Description	Start End Strand Links
Gh_D01G2029 PSK6	Putative phytosulfokines 6	59,308,542 59,309,042 + Structure; Domain; Homology
Gh_D01G2030 At3g23620	Ribosome production factor 2 homolog	59,310,810 59,312,600 + Structure; Domain; Homology
Gh_D01G2031 FK	Delta(14)-sterol reductase	59,313,576 59,319,041 - Structure; Domain; Homology
Gh_D01G2032 HDT1	Histone deacetylase HDT1	59,320,151 59,322,851 + Structure; Domain; Homology
Gh_D01G2033 NA	Enolase	59,326,180 59,329,485 - Structure; Domain; Homology Result
Gh_D01G2034 PRXIIE	Peroxiredoxin-2E, chloroplastic	59,334,370 59,335,053 + Structure; Domain; Homolog
Gh_D01G2035 At5g12100	Pentatricopeptide repeat-containing protein At	5g12100, mitochondrial 59,335,370 59,337,823 - Structure; Domain; Homology
Gh_D01G2036 CSLA9	Glucomannan 4-beta-mannosyltransferase 9	59,340,699 59,345,467 - Structure; Domain; Homolog,
Gh_D01G2037 <u>NA</u>	NA	59,364,867 59,366,338 + Structure; Domain; Homolog
Gh_D01G2038 PXC1	Leucine-rich repeat receptor-like protein kinas	e PXC1 59,380,005 59,382,115 + Structure; Domain; Homolog
Showing 1 to 10 of 116 rows 10 + reco	ords per page	< 1 2 3 4 5 12 >
JBrowse View 🔗		
59,500,000	59,750,000	60,000,000 60,250,000 Full-screen view
ронодоваесся ротодову ница4 онсу Р5к6 Рхс1 бh_D01g2041 EMB175 FKE	IDML ZATS PMR6 RAXI GI_DOIG2071 INI CI BPI6-4 PP5K9 BALPHA DPB GL_DOIG2072 TRP4	NGCIS PP22 GN DUISZIBB NOUT GN DUISZIDS AP2 COLLARCOZ ELAL MARKO POMPETUZ A LOG3 PSBIPK LECRKBI ČRZ SRGI GGPS RALAA GN DUISZIB EKO70AI RABELA GN
At3g23620 Os11g0148500 At5g03795 i FK PRXIIE Os11g0148500 PURA2 At1g	DM1 Tinks ACR10 ABCB1 Gh_D01G2074 PCM 955240 TiP1-1 znf593 Gh_D01G2075	P-ELS ร์ไหวา รีโรA2 คือค4 พี่ราช8 อีอรร อีรอเมูอส34700 อีก Dolo2125 เป็หม อีก ที่ไมว พี่อีพ8 อีพ8 ที่พน4-1 ยิ่งไม44 ที่ชี้เวบร ยิ่งเม44 บีหรา พี่2g37470
	048 ACA7 Gh_D01G2064 Trank1	RP2-2 Atsg14770 RP523 BGLU44 TERC ATX1 Gh_DD1G2
Gn_D01G2033 @sk1 AfSg0 Af5g12100	ACA7 PTST Gh_D01G2070 Gh_D01 Gh_D01G2073 PAL	102079 GD_D0162080 GSTL3 GD_D0162130 GD_D0162087 REFAL GD_D0162120 GD_D0162132
ČSLA9		G <mark>1.</mark> 001G2103 คื52Z32 ฟ้นอกผรา_Ac ล้าน ผ้ร₀กวรด
		Pidge and Pidge

Figure S4-2: Snapshots of the Browse page: browse genes by genetic marker. Since a single marker might map to multiple genomic locations, CottonFGD first displays all the possible mapped genomic locations to let users select the positions they want. By default, CottonFGD displays genomic locations that have  $\geq$ 95% query coverage and  $\geq$ 90% identity, which could be customized by users. Then CottonFGD

displays the result gene list table based on users' selections. This snapshot displayed 116 *G. hirsutum* genes (NAU assembly) between SSR marker JESPR0152 and NAU3040.

# BLAST: Search Homologous Genes/Proteins By Sequence Similarity



Showing 1 to 10 of 10 rows

**Figure S4-3: Snapshots of the BLAST page.** This page mainly contains an embed SequenceServer App[1], a powerful BLAST front-end. After finishing the BLAST search, CottonFGD would automatically extract target gene IDs for each query sequence and rendered them in a table. This snapshot displayed the BLAST result using protein sequences of *CYP78A7* as query to search against all the *G. hirsutum* proteins with an E-value of 1e-05 and returning top 10 hits.

					-					
$\stackrel{n}{-}$	By Gene ID/Name	By Protein Doma	ain By Function - By Expres	sion 👻						
L	Gene Inform	nation							7	
	Search Conten	t actin								
		e.g. Gh_D0' GOBAF Cotton Gorai 0 Cotton ACT actin	7G0123 04554 ₹_AA16059 A_05687 13G264100 D_gene_10040019							nput D/name
	Species									
	Select Species	Gossypium	<i>hirsutum</i> (AD <sub>1</sub> , upland cotton), NAU a	assembly						
		<ul> <li>Gossypium</li> </ul>	<i>hirsutum</i> (AD <sub>1</sub> , upland cotton), BGI a	ssembly						
		⊖ Gossypium	barbadense (AD <sub>2</sub> , sea-island cotton)	, NAU assembly	/				S	Select
		<ul> <li>Gossypium</li> <li>Gossypium</li> </ul>	n raimondii (D <sub>5</sub> ), JGI assembly						s	pecies
		<ul> <li>Gossypium</li> <li>Gossypium</li> </ul>	a arboreum (A <sub>2</sub> , tree cotton), BGI asse	mbly						•
	Submit Reset	lt		-						
:	Submit Reset Search Resu 159 results are fou Select & Analysis	It nd. Select & BLAST	X Select & Phylogenetic Tree Build	Select & Stor	reSearch		S	<u>A</u> .	J	
	Submit Reset Search Resu 159 results are fou Select & Analysis Cance ID	It nd. Select & BLAST	X Select & Phylogenetic Tree Build	Select & Stor	re Search	Assembly	C Ⅲ.	<u>A</u> -		
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	Submit Reset Search Resu Select & Analysis Gene ID Gh_D06G0509 Gh_A03G1149 Gh_A05G2093 Gh_D04G0598 Gh_D04G0598 Gh_D08G0978	It nd. Select & BLAST Gene Name ADF5 ARP6 SCAB1 ARP3 AI1g71790 AC58 ARPC3	X Select & Phylogenetic Tree Build Description Actin-depolymerizing factor 5 Actin-related protein 6 Stomatal closure-related actin-bindi Actin-related protein 3 Probable F-actin-capping protein su Actin-58 Actin-related protein 2/3 complex su	Select & Stor s ng protein 1 ubunit beta ubunit 3	re Search Species Gossypium hirsutum Gossypium hirsutum Gossypium hirsutum Gossypium hirsutum Gossypium hirsutum Gossypium hirsutum	Assembly NAU NAU NAU NAU NAU NAU NAU NAU NAU	2 III ~ C → CONSTRUCTION CONSTRUCTUON CONSTRUC	some ∳	F	Result gene ist table
	Submit Reset Search Resu Select & Analysis Gene ID Gh_D06G0509 Gh_D09G1029 Gh_A03G1149 Gh_A03G1149 Gh_D04G0598 Gh_D04G0598 Gh_D08G0978 Gh_D03G1211	It and. Select & BLAST Gene Name ADF5 ARP6 SCAB1 ARP3 At1g71790 AC58 ARPC3 MA	Select & Phylogenetic Tree Build Description Actin-depolymerizing factor 5 Actin-related protein 6 Stomatal closure-related actin-bindi Actin-related protein 3 Probable F-actin-capping protein su Actin-factor for the factor	Select & Stor	re Search Species Gossypium hirsutum Gossypium hirsutum Gossypium hirsutum Gossypium hirsutum Gossypium hirsutum Gossypium hirsutum Gossypium hirsutum	Assembly NAU NAU NAU NAU NAU NAU NAU NAU NAU NAU		some ∲	F	Result gene ist table
	Submit         Reset           Search Resu           159 results are fou           Select & Analysis           Gh_D12G0311           Gh_D06G0509           Gh_A03G1149           Gh_A05G2093           Gh_D04G0598           Gh_D03G1211           Gh_D03G1220	It nd. Select & BLAST Gene Name ¢ ADF5 ARP6 SCAB1 ARP3 At1g71790 AC58 ARPC3 MA ADF1	Select & Phylogenetic Tree Build         Description         Actin-depolymerizing factor 5         Actin-related protein 6         Stomatal closure-related actin-bindit         Actin-related protein 3         Probable F-actin-capping protein su         Actin-related protein 2/3 complex su         Actin-related protein 2/3 complex su         Actin         Actin-depolymerizing factor 1	Select & Stor	re Search Species Gossypium hirsutum Gossypium hirsutum Gossypium hirsutum Gossypium hirsutum Gossypium hirsutum Gossypium hirsutum Gossypium hirsutum	Assembly NAU NAU NAU NAU NAU NAU NAU NAU NAU NAU	2 III - C → CONSCUE </td <td>Some \$</td> <td>F</td> <td>Result gene ist table</td>	Some \$	F	Result gene ist table
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# Figure S4-4: Snapshots of the Search page: search by gene ID/name. This

snapshot displayed 159 *G. hirsutum* genes using keyword "actin" as gene name search.

By Gene ID/Name	By Protein Domain By Function - By Expression -	
Domain Infor	Pfam -	
<b>O</b>	i idani	
Search Content	Thioesterase	Input domain ID/name
	e.g. • PF03061	(might be fuzzy)
	<ul> <li>PS0036</li> <li>4HBT</li> <li>Thioesterase</li> </ul>	
Species		
Select Species	<ul> <li>Gossypium hirsutum (AD<sub>1</sub>, upland cotton), NAU assembly</li> </ul>	
	<ul> <li>Gossypium hirsutum (AD<sub>1</sub>, upland cotton), BGI assembly</li> </ul>	
	<ul> <li>Gossypium barbadense (AD<sub>2</sub>, sea-island cotton), NAU assembly</li> </ul>	Salast spasing
	<ul> <li>Gossypium raimondii (D<sub>5</sub>), JGI assembly</li> </ul>	Select species
	<ul> <li>Gossypium raimondii (D<sub>5</sub>), BGI assembly</li> </ul>	
	<ul> <li>Gossypium arboreum (A<sub>2</sub>, tree cotton), BGI assembly</li> </ul>	
Submit Reset		

#### Search Result

Select & Fetch Gene		Search		-	<u>a</u> .
Domain Accession	\$ Domain Description		Exist in Cot	ton?	
PF00975	Thioesterase: Thioesterase domain		No		
D PF01643	Acyl-ACP_TE; Acyl-ACP thioesterase		Yes		
PF02089	Palm_thioest; Palmitoyl protein thioesterase	Yes			
PF02551	Acyl_CoA_thio; Acyl-CoA thioesterase		No		
PF03061	4HBT; Thloesterase superfamily		Yes		
PF09500	YiiD_C; Putative thioesterase (yiiD_Cterm)		No		
D PF10862	FcoT; FcoT-like thioesterase domain		No		
PF12590	Acyl-thio_N; Acyl-ATP thioesterase		Yes		
PF13279	4HBT_2; Thioesterase-like superfamily		Yes		
PF13622	4HBT_3; Thioesterase-like superfamily		Yes		

Search for Cotton Genes by Key Words

Step 1: Display all possible domains in selected domain database (e.g. Pfam) Users would select their wished items and perform a secondary search.

Showing 1 to 10 of 10 rows

#### Search Result

## Associated Proteins List

30 results are found.

Sel	ect & Analysis Select & Bl	LAST Select & Phyloger	etic Tree Build Select & Store	Search	𝔅 Ⅲ Δ
	Protein ID	Gene Name	Species	Assembly	Domain Accession
	Gh_A02G0603.1	DHNAT1	Gossypium hirsutum	NAU	PF03061 (1);
	Gh_A03G0409.1	ACOT13	Gossypium hirsutum	NAU	PF03061 (1);
	Gh_A04G0840.1	sll0410	Gossypium hirsutum	NAU	PF03061 (1);
	Gh_A04G0841.1	NA	Gossypium hirsutum	NAU	PF03061 (1);
	Gh_A05G0760.1	ACOT13	Gossypium hirsutum	NAU	PF03061 (1);
	Gh_A05G3848.1	ACOT13	Gossypium hirsutum	NAU	PF03061 (1);
	Gh_A08G1159.1	ACOT13	Gossypium hirsutum	NAU	PF03061 (1);
	Gh_A09G0781.1	Ascc1	Gossypium hirsutum	NAU	PF03061 (2);
	Gh_A09G0782.1	NA	Gossypium hirsutum	NAU	PF03061 (1);
	Gh_A09G0783.1	NA	Gossypium hirsutum	NAU	PF03061 (2);
how	ing 1 to 10 of 30 rows 10 🔺	records per page			< 1 2 3 >

Step 2: Result gene list table based on users' selection

# Figure S4-5: Snapshots of the Search page: search by domain or function

**annotations.** As name match might be fuzzy, CottonFGD uses a two-step search method. This snapshot displayed searching *G. hirsutum* genes containing "Thioesterase" domain. The same method is also used for function (GO/InterPro/pathway) search.

PPKM Vaule	Expression	Parameter				
Expressed In	FPKM Vaule Cutof	e 1 ✔			Define ex	pressio
Expressed In Gossypium hirsdum - Gossypium raimondii - Gossypium arboreum - Gossypium arboreum - Gossypium barbadense - Fiber development, HAU, time-series (Gossypium barbadense) Gossypium harbadense - Fiber development, HAU, time-series (Gossypium barbadense) Gossypium harbadense - Fiber development, HAU, time-series (Gossypium barbadense) Gossypium harbadense - Fiber development, HAU, time-series (Gossypium barbadense) Gossypium harbadense - Fiber development, HAU, time-series (Gossypium barbadense) Gossypium harbadense - Fiber development, HAU, time-series (Gossypium barbadense) Gossypium harbadense - Fiber development, HAU, time-series (Gossypium barbadense) Gossypium harbadense - Fiber development, HAU, time-series (Gossypium barbadense) Gossypium harbadense (Acg. seathate the state of the state					threshold	5
Gossypium hirsutum -         Gossypium raimondii -         Gossypium arboreum -         Gossypium barbadense -         Fiber development, HAU, time-series (Gossypium barbadense)         Orule in anthesis         Piber development, HAU, time-series (Gossypium barbadense)         Orule in anthesis         Piber development, HAU, time-series (Gossypium barbadense)         Select Same         Select Searchece         Anther         Petal         Root         Steet Species         Gossypium hirsutum (AD <sub>1</sub> , upland cotton), NAU assembly         Gossypium arboreum (A <sub>D</sub> , upland cotton), NAU assembly         Gossypium arboreum (A <sub>D</sub> , tree cotton), BGI assembly         Gossypium arboreum (A <sub>D</sub> , tree cotton), BGI assembly         Gossypium arboreum (A <sub>D</sub> , tree cotton), BGI assembly         Gossypium arboreum (A <sub>D</sub> , tree cotton), BGI assembly	Expressed I	n				
Gossypium raimondii •         Gossypium arboreum •         Gossypium barbadense •            Fiber development, HAU, time-series (Gossypium barbadense)         Ovule in anthesis         Piber in 10 days         post-anthesis         post-anthesis         post-anthesis         post-anthesis         Select searched         experiments         (showing partia         option only)         Select species         Select searched         experiments         (showing partia         option only)         Select searched         experiments         Select searched         experiments         (showing partia         option only)         Select searched         experiments         (showing	Gossypium hirs	sutum 🗸				
Gossypium arboreum ~         Gossypium barbadense ~         Fiber development, HAU, time-series (Gossypium barbadense)         Orule in anthesis       Fiber in 10 days         post-anthesis       post-anthesis         post-anthesis       post-anthesis         Concertain       Select searched experiments         (showing partial option only)       Select searched experiments         Select searched experiments       Stigma         Select searched experiments       Stigma         Species       Select searched experiments         Select searched experiments       Stigma         Select searched experiments       Stigma         Species       Gossypium hirsulum (AD1, upland cotton), NAU assembly         Gossypium hirsulum (AD1, upland cotton), NAU assembly       Gossypium barbadense (AD2, sea-island cotton), NAU assembly         Gossypium arimondii (D5), BGI assembly       Gossypium raimondii (D5), BGI assembly         Gossypium raimondii (D5), BGI assembly       Gossypium raimondii (D5), BGI assembly         Gossypium raimondii (D5), BGI assembly       Gossypium raimondii (D5), BGI assembly	Gossypium raii	mondii 🗸				
Gossypium barbadense •         Fiber development, HAU, time-series (Gossypium barbadense)         Ovule in anthesis       Fiber in 10 days         post-anthesis       post-anthesis         post-anthesis       post-anthesis         Select searched       experiments         (showing partia)       option only)         Petal       Root         Species       Gossypium hirsutum (AD1, upland cotton), NAU assembly         Gossypium nirsutum (AD1, upland cotton), NAU assembly       Gossypium nirsutum (AD1, upland cotton), NAU assembly         Gossypium nirsutum (AD1, upland cotton), NAU assembly       Gossypium nirsutum (AD1, upland cotton), BGI assembly         Gossypium nirsutum (AD1, upland cotton), BGI assembly       Gossypium raimondii (D5), BGI assembly         Gossypium nirsutum (AD2, tree cotton), BGI assembly       Gossypium raimondii (D5), BGI assembly	Gossypium arb	oreum 🗸				
Fiber development, HAU, time-series (Gossypium barbadense)       Select searched         Ovule in anthesis       Fiber in 10 days       post-anthesis         post-anthesis       post-anthesis       Select searched         Excertain       Gossypium barbadense)       Select searched         Anther       Fiber       Lear       Ovule         Anther       Fiber       Lear       Ovule         Petal       Root       Stem       Stigma         Species       Gossypium hirsutum (AD1, upland cotton), NAU assembly       Gossypium hirsutum (AD2, sea-island cotton), NAU assembly         © Gossypium raimondii (D5), JGI assembly       Gossypium raimondii (D5), JGI assembly       Select searched         © Gossypium raimondii (D5), BGI assembly       Gossypium raimondii (D5), BGI assembly       Gossypium raimondii (D5), BGI assembly         © Gossypium raimondii (D5), BGI assembly       Gossypium raimondii (D5), BGI assembly       Gossypium raimondii (D5), BGI assembly	Gossypium bai	rbadense 🗸				
Species       Gossypium hirsutum (AD₁, upland cotton), NAU assembly       Select searched         © Gossypium nirsutum (AD₁, upland cotton), NAU assembly       © Gossypium nirsutum (AD₁, upland cotton), NAU assembly       Select searched         © Gossypium nirsutum (AD₁, upland cotton), NAU assembly       © Gossypium nirsutum (AD₂, sea-island cotton), NAU assembly       Select searched         © Gossypium nirsutum (AD₂, upland cotton), NAU assembly       © Gossypium nirsutum (AD₂, sea-island cotton), NAU assembly       Select searched         © Gossypium nirsutum (AD₂, upland cotton), BGI assembly       © Gossypium nirsutum (AD₂, sea-island cotton), BGI assembly       Select searched         © Gossypium nirsutum (AD₂, upland cotton), BGI assembly       © Gossypium nirsutum (AD₂, sea-island cotton), BGI assembly       Select searched	Fiber deve	elopment, HAU, time-series (Goss	ypium barbadense)			
○ Ovule in anthesis       □ Fiber in 10 days post-anthesis       □ Fiber in 20 days post-anthesis       Select searcheor experiments         □ Steck All       □ Anther       □ Fiber       □ Leaf       ○ Ovule         □ Anther       □ Fiber       □ Leaf       ○ Ovule       ○ option only)         ○ Petal       □ Root       □ Stem       □ Stigma       ○ option only)         ○ Species       ○ Gossyplum hirsutum (AD1, upland cotton), NAU assembly       ○ Gossyplum hirsutum (AD1, upland cotton), BGI assembly       ○ Gossyplum hirsutum (AD1, upland cotton), BGI assembly       ○ Gossyplum namondii (D5), BGI assembly       ○ Gossyplum raimondii (D5), BGI assembly <th>Check All</th> <th></th> <th></th> <th></th> <th></th> <th></th>	Check All					
Select searched         Issue and Organ (Gossypium barbadense)         Image: Anther         Anther         Petal         Root         Stigma	Ovule in anth	Piesis Fiber in 10 days post-anthesis	Fiber in 20 days post-anthesis			
Tissue and Organ (Gossypium barbadense)       experiments         Inther       Fiber       Leaf       Ovule         Petal       Root       Stem       Stigma         species       Gossypium hirsutum (AD1, upland cotton), NAU assembly       Gossypium hirsutum (AD1, upland cotton), BGI assembly         Gossypium barbadense (AD2, sea-Island cotton), NAU assembly       Select searched       Select searched         Gossypium raimondii (D5), JGI assembly       Gossypium raimondii (D5), JGI assembly       Select searched         Gossypium arboreum (A2, tree cotton), BGI assembly       Gossypium arboreum (A2, tree cotton), BGI assembly       Select searched					Select sea	arched
□ CheckAll       □ Anther       □ Fiber       □ Leaf       □ Ovule       ○ option only)         □ Petal       □ Root       □ Stem       □ Stigma       ○ option only)         Species       □ Gossypium hirsutum (AD1, upland cotton), NAU assembly       □ Gossypium hirsutum (AD1, upland cotton), NAU assembly       □ Gossypium hirsutum (AD1, upland cotton), NAU assembly       □ Gossypium hirsutum (AD2, sea-island cotton), NAU assembly       □ Gossypium raimondii (D5), JGI assembly       □ Gossypium raimondii (D5), JGI assembly       □ Gossypium arboreum (A2, tree cotton), BGI assembly	Tissue and	d Organ (Gossypium barbadense)			experim	ents
□ Anther       □ Fiber       □ Leaf       ○ Ovule         □ Petal       □ Root       □ Stem       □ Stigma       option only)         Species         Select Species       ○ Gossypium hirsutum (AD1, upland cotton), NAU assembly       ○ Gossypium hirsutum (AD1, upland cotton), BGI assembly       ● Gossypium barbadense (AD2, sea-island cotton), NAU assembly       ● Gossypium raimondii (D5), JGI assembly       ● Gossypium raimondii (D5), BGI assembly       ● Gossypium raimon	Check All				(showing	partia
pecies         Select Species       Gossypium hirsutum (AD1, upland cotton), NAU assembly         Gossypium hirsutum (AD1, upland cotton), BGI assembly         Gossypium barbadense (AD2, sea-island cotton), NAU assembly         Gossypium raimondii (D5), JGI assembly         Gossypium raimondii (D5), JGI assembly         Gossypium raimondii (D5), BGI assembly         Gossypium raimondii (D5), BGI assembly         Gossypium raimondii (D5), BGI assembly         Gossypium arboreum (A2, tree cotton), BGI assembly	Anther Petal	Fiber Root	□ Leaf □ Stem	Ovule	option o	nly)
Select Species       Gossypium hirsutum (AD1, upland cotton), NAU assembly         Gossypium hirsutum (AD1, upland cotton), BGI assembly       Gossypium hirsutum (AD1, upland cotton), BGI assembly         Gossypium barbadense (AD2, sea-island cotton), NAU assembly       Select searched         Gossypium raimondii (D5), JGI assembly       Gossypium raimondii (D5), JGI assembly         Gossypium raimondii (D5), BGI assembly       experiments         Gossypium arboreum (A2, tree cotton), BGI assembly       experiments						
Select Species       Gossypium hirsutum (AD1, upland cotton), NAU assembly         Gossypium hirsutum (AD1, upland cotton), BGI assembly         Gossypium barbadense (AD2, sea-island cotton), NAU assembly         Gossypium barbadense (AD2, sea-island cotton), NAU assembly         Gossypium raimondii (D5), JGI assembly         Gossypium raimondii (D5), JGI assembly         Gossypium raimondii (D5), BGI assembly         Gossypium arboreum (A2, tree cotton), BGI assembly						
Species         Select Species         Gossypium hirsutum (AD1, upland cotton), NAU assembly         Gossypium hirsutum (AD1, upland cotton), BGI assembly         Gossypium barbadense (AD2, sea-island cotton), NAU assembly         Gossypium raimondii (D5), JGI assembly         Gossypium raimondii (D5), JGI assembly         Gossypium raimondii (D5), BGI assembly         Gossypium arboreum (A2, tree cotton), BGI assembly					-	
Species         Select Species         Gossypium hirsutum (AD1, upland cotton), NAU assembly         Gossypium hirsutum (AD1, upland cotton), BGI assembly         Gossypium barbadense (AD2, sea-island cotton), NAU assembly         Gossypium raimondii (D5), JGI assembly         Gossypium raimondii (D5), JGI assembly         Gossypium raimondii (D5), BGI assembly         Gossypium arboreum (A2, tree cotton), BGI assembly						
Select Species       Gossypium hirsutum (AD1, upland cotton), NAU assembly       Gossypium hirsutum (AD1, upland cotton), BGI assembly       Select searched         © Gossypium barbadense (AD2, sea-island cotton), NAU assembly       Gossypium raimondii (D5), JGI assembly       Select searched         © Gossypium raimondii (D5), JGI assembly       Gossypium raimondii (D5), BGI assembly       Select searched         © Gossypium arboreum (A2, tree cotton), BGI assembly       Gossypium arboreum (A2, tree cotton), BGI assembly       Select searched						
<ul> <li>Gossypium hirsutum (AD<sub>1</sub>, upland cotton), BGI assembly</li> <li>Gossypium barbadense (AD<sub>2</sub>, sea-island cotton), NAU assembly</li> <li>Gossypium raimondii (D<sub>5</sub>), JGI assembly</li> <li>Gossypium raimondii (D<sub>5</sub>), BGI assembly</li> <li>Gossypium arboreum (A<sub>2</sub>, tree cotton), BGI assembly</li> </ul>	pecies					
<ul> <li>Gossypium barbadense (AD<sub>2</sub>, sea-island cotton), NAU assembly</li> <li>Gossypium raimondii (D<sub>5</sub>), JGI assembly</li> <li>Gossypium raimondii (D<sub>5</sub>), BGI assembly</li> <li>Gossypium arboreum (A<sub>2</sub>, tree cotton), BGI assembly</li> </ul>	pecies Select Species	<ul> <li>Gossypium hirsutum (AD<sub>1</sub>, upland</li> </ul>	cotton), NAU assembly			
Gossypium raimondii (L5), JGi assembly     Gossypium raimondii (D5), BGi assembly     Gossypium arboreum (A <sub>2</sub> , tree cotton), BGi assembly	pecies Select Species	<ul> <li>Gossypium hirsutum (AD<sub>1</sub>, upland</li> <li>Gossypium hirsutum (AD<sub>1</sub>, upland</li> </ul>	cotton), NAU assembly cotton), BGI assembly			
Gossypium arboreum (A <sub>2</sub> , tree cotton), BGI assembly	pecies Select Species	<ul> <li>Gossypium hirsutum (AD<sub>1</sub>, upland</li> <li>Gossypium hirsutum (AD<sub>1</sub>, upland</li> <li>Gossypium barbadense (AD<sub>2</sub>, sea</li> </ul>	cotton), NAU assembly cotton), BGI assembly -island cotton), NAU assembly		Select sea	arched
	pecies Select Species	<ul> <li>Gossypium hirsutum (AD<sub>1</sub>, upland</li> <li>Gossypium hirsutum (AD<sub>1</sub>, upland</li> <li>Gossypium barbadense (AD<sub>2</sub>, sea</li> <li>Gossypium raimondii (D<sub>5</sub>), JGI ass</li> <li>Gossypium raimondii (D<sub>5</sub>), BGI ass</li> </ul>	cotton), NAU assembly cotton), BGI assembly -island cotton), NAU assembly embly		Select sea	arched
	pecies Select Species	<ul> <li>Gossypium hirsutum (AD<sub>1</sub>, upland</li> <li>Gossypium hirsutum (AD<sub>1</sub>, upland</li> <li>Gossypium barbadense (AD<sub>2</sub>, sea</li> <li>Gossypium raimondii (D<sub>5</sub>), JGI ass</li> <li>Gossypium raimondii (D<sub>5</sub>), BGI ass</li> <li>Gossypium raimondii (D<sub>5</sub>), BGI ass</li> <li>Gossypium arboreum (A<sub>2</sub>, tree cot</li> </ul>	cotton), NAU assembly cotton), BGI assembly -island cotton), NAU assembly embly embly ton), BGI assembly		Select sea experim	arched ents

# Search for Cotton Genes by Key Words @

## Search Result

### Genes Expressed in Selected Experiments

3280	9 results are found.	×				
Sele	ect & Analysis Select & BLAST Select & Phylog	genetic Tree Build Select & Store	Search	2	2.	
	Protein ID		Petal		ą	
	GOBAR_AA00003.1		1.41			Result gene list
	GOBAR_AA00020.1		3.86		ł	- table expressed
	GOBAR_AA00027.1		1.40			in selected
	GOBAR_AA00028.1		8.87			experiments
	GOBAR_AA00030.1		25.13			
	GOBAR_AA00031.1		97.31			
		10				

# Figure S4-6: Snapshots of the Search page: search by gene expression profiles.

The expression FPKM threshold could be customized (default value is 1). CottonFGD would display a list of genes expressed in all the selected experiments. This snapshot displayed searching *G. barbadense* genes expressed in petal.

# References

1. Priyam A, Woodcroft BJ, Rai V, Munagala A, Moghul I, Ter F, Gibbins MA, Moon H, Leonard G, Rumpf W: **Sequenceserver: a modern graphical user interface for custom BLAST databases**. *Biorxiv* 2015:033142.