

Supplementary data

Selecting core SSR markers for fingerprinting upland cotton cultivars and hybrids

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**Table S1.** Primer sequence, chromosome (Chr), number of alleles (N), polymorphism information content (PIC) and resolving power (Rp) of all SSRs.

No.	Primer	Sequence (Forward/Reverse)	Chr	N	PIC	Rp
1	NAU4044	ATGAGTGAAGAACCTGCACA AGTTGATGGAAGAGGAGACG	1	1	0.46	0.73
2	<b>NAU3736</b>	CATGTGCATTTCATCCTGTC CCAAGTGAGAGGCATTTTCT	1	3	0.76	1.05
3	HAU2138	TGGGAGTAGAAGGCACTTGGA ACGCCGGAGAGGACCTTCTT	1	2	0.65	0.77
4	<b>TMB1738</b>	TTGTTAGCAATATGCAATATGAAC GGGTTTAGTTGAATGGGACC	2	3	0.75	1.05
5	BNL663	GGGGGAAATGAACAGATTT GAAGATATCCCCGCCTTCTC	2	3	0.69	0.17
6	NAU5233	GGCCTAAGCCAAATACACAG AGCCTATCATAATCGCGAAG	3	4	0.78	0.49
7	NAU2836	ATTGGAAGGGTATTGAGCTG TCCTTTCCCACTTCTGTTCT	3	2	0.71	1.25
8	HAU1300	GGGAGGCAAGTTTGATTAGA TCGAAATGATCAAGTGTTGG	4	2	0.68	1.03
9	BNL4047	CACCAAGGAGCTCTGCAAAT ATCTGCAGCAAATAGTGA CTG	4	1	0.34	0.43
10	HAU1384	CCACCACTGTCACTCTCAAA CCTGAACGATGGCTAGA ACT	5	2	0.72	1.33
11	NAU4034	CGACGGAAAGGGTTATCTTA ACGCCCTTCATTCAAACAC	5	2	0.67	0.90
12	NAU3036	ATCTTGGGAATCTCAAATGG TGCTCCGATGAGTATTCAAA	5	2	0.68	1.10
13	BNL3650	TCGATTTCTTATTTGATTTCTG AATTTGTCCAGATTCATTCTTCA	6	2	0.64	0.67
14	DPL0238	GTGGAGGTGTATTTCTATCGATCC GTTGCTAACAGGCGAGACATAAA	6	2	0.73	1.57
15	BNL2733	TCGAGGGTTTAGGGTTCTG AATTGTGCAACACCTCCCTC	7	3	0.72	0.56
16	<b>BNL3319</b>	GGACAAGTTCGTGTTGCTGA	7	5	0.86	2.45

		ACACCTTCTCAAAACACCCG				
17	TMB1618	GGGAATTGAACCCAAGACCT GTGAAAGGGGAGGTTCAACA	7	2	0.60	0.43
18	<b><u>BNL3255</u></b>	GACAGTCAAACAGAACAGATATGC TTACACGACTTGTTCCACG	8	5	0.84	1.63
19	DPL176	GAAACTGGGAGTGAAAGAACAAGT TGGATGTTAGCTTTGGTTTACCC	8	2	0.53	0.13
20	<b><u>BNL1414</u></b>	AAAAACCCCTTTCCATCCAT GGGTGTCCTTCCCAAAAATT	9	3	0.79	1.72
21	BNL2590	GAAAAACCAAAAAGGAAAATCG CTCCCTCTCTCTAACCGGCT	9	3	0.53	0.11
22	<b><u>BNL1317</u></b>	AAAAATCAGCCAAATTGGGA CGTCAACAATTGTCCCAAGA	9	4	0.83	1.87
23	GH199	CAAAAAGAATATGAATGAGTCAATAGAC CAATAAATGCCATAATCTTTCAACTCAC	10	3	0.71	1.33
24	<b><u>HAU2824</u></b>	CCGTGGAGCAGTCACCAGTC GCTGGAGGCGGGTGTAACAT	10	3	0.77	1.46
25	HAU2147	GACCGTGGAGCAGTCACCAG CCGCTGGAGGAGGGTGTAAC	10	3	0.73	0.92
26	HAU1423	CCCAAAGCAGAAAAGCTAAG TTCCCGGCTGTGATAGTAAT	10	2	0.59	0.43
27	BNL3442	CATTAGCGGATTTGTCGTGA AACGAACAAAGCAAAGCGAT	11	2	0.73	1.59
28	MUCS281	GCTCGGATTAGCTTCAGTGG CAACACAAACTTCCTTGCCC	11	3	0.75	0.92
29	BNL598	TATCTCCTTCACGATTCCATCAT AAAAGAAAACAGGGTCAAAAAGAA	12	3	0.69	0.22
30	NAU2671	TTGCAACCCTAATGTCAATG AAACGATGGGAAAAGTGTTA	12	2	0.67	0.90
31	NAU3897	CTCCAATTGGGTCATCATT GTACTCTTCAATCGGCCTTT	12	1	0.37	0.49
32	NAU3468	ATAGCACGATTGGGAAGAAC AGGAAATGAGTCCTCAGCAG	13	2	0.63	0.62
33	GH697	TCCCTGAGCTCATATCTAACTCC GACTTACTAAGCTATTCAAGCTTCC	13	2	0.65	0.73
34	<b><u>NAU5499</u></b>	ATAAACTTTCCCGGCTGATT CCAGCACAAGACTTGATTGT	14	3	0.78	1.63
35	<b><u>HAU3236</u></b>	GCCGTCTGTTGGTGTCTTGG ACACGTCACACCCTTCACCT	14	3	0.77	1.55
36	JESPR156	GCCTTCAATCAATTCATACG GAAGGAGAAAGCAACGAATTAG	14	2	0.73	1.59
37	NAU3820	CTTCTCAAAGCCATGAAGGT AGGATCCAGATTTCTGGTGA	14	2	0.71	1.29
38	CIR307	GACTTGAAAAGATTACACAC GAATTTGCTGGCTCT	15	3	0.73	0.62
39	HAU1001	ACAGGATGTGCATGTTATGG	15	3	0.74	0.92

40	HAU3082	ATCTCTTGATTTGGGGTCAA GCACGAGGTCTTACCCCAGC GGCGACGTAGGTGGTGAGTC	16	2	0.52	0.09
41	MUSS95	GCAACCATTAATTAAGCAAGTAACAA CGAAGAATATGTGAACCTACAGAAAC	16	2	0.71	1.31
42	BNL2486	CGAAACGTGGAACGAAAAAT CAAGCGGTAATAGGAATGCA	17	2	0.52	0.09
43	HAU119	CACCCTTTTGTTTCTCAAGG TCCTTATTACCCCAAGAGG	17	2	0.68	0.92
44	TMB2295	TGAGTTCATGTTCCCACTG CTAAACATACTCTGTCAAACAC	18	2	0.66	0.90
45	NAU3943	TTGGAGCAAACACAGACT CCCTACGTCTCGAAAATACG	18	2	0.51	0.04
46	<b><u>NAU3095</u></b>	TCCTGAACATGAACCGTAAA GATTTCCCAATTTTTCCTT	19	4	0.85	2.26
47	<b><u>BNL3875</u></b>	CACCCCTAAAGTAACAAACAAA ATCTTCCTCAGCACTCCAAG	19	4	0.80	1.10
48	BNL119	CGATCCTTCTTATTCTCATCTCTC GAAACACTTCTTCACAAATCCTAAT	20	2	0.69	1.10
49	BNL3948	GTAATGTTCAACACTTTGCTATTCC GTTGGTTGGGTGAGCAGAAT	20	2	0.68	1.01
50	<b><u>GH277</u></b>	CAGGGCTTCTTTATTATGT GGTGAAGTGGTTTCTCTC	20	3	0.80	1.59
51	BNL1154	CATCTATTTTCGTGGGGTGC AACCCTTTGTTCAATTTCTCG	21	2	0.63	0.67
52	BNL1655	AGAATCTATCCCAGCTCGCA CCGAATGTCAAATAACCCA	21	2	0.69	0.99
53	GH132	TCATGGAACACCAAAGTTGGA ACATGATAGATTATTTCAGCAATGCA	21	5	0.83	0.80
54	NAU2783	CCATAGTGGGCAACAAATTA ATCCCCAGCAATCAACTTTA	22	2	0.72	1.44
55	BNL2609	GTTCCCATGCATGCTTTCTT ATAGCAGTGCAAGCAACGTG	22	2	0.70	1.35
56	NAU5508	TGGTAAACCCGTAATCACC GCTTTCCGTTTTTCCACTTA	23	1	0.47	0.75
57	BNL3173	AAGCTATAAAGAGAAGATGCAACG TTTAACCATGCGTGCAAAA	23	2	0.64	0.67
58	NAU2631	TGAAGAAAGAAAAGAGAAAGGG CTCACCACGTGGCACTTATG	24	2	0.51	0.04
59	NAU5335	TTGCAACCACA ACTATGACTG ACAGGCTATTT CAGCACTCC	24	2	0.55	0.22
60	<b><u>BNL3405</u></b>	CCAAAGACAAAGGAGTCCCA ATGTCTGATTAAGTTTGCAATCA	25	4	0.84	1.94
61	BNL827	AAGCTCCACGTGCTCAAGTT CTCATGTTGTCGGTGGTGTT	25	2	0.74	1.68
62	BNL3594	AGGGATTTTGATTGTTGTGC	25	1	0.43	0.62

		TGAATTCAAACAAATGTTAGCC				
63	HAU2022	TGTCCTGGGACTTCAAGATT TTCATTTCCAAGGAAAGCTG	25	2	0.67	1.05
64	MGHES44	ACCACTTGGGATTGGTTCAA GAGGCCACCACATATCGTTT	26	2	0.63	0.69
65	NAU1042	CATGCAAATCCATGCTAGAG GGTTTCTTTGGTGGTGA AAC	26	2	0.70	1.31
66	BNL2495	ACCGCCATTACTGGACAAAG AATGGAATTTGAACCCATGC	26	2	0.71	1.42
Average		66 Genome covered SSRs		2.45	0.68	0.98
		<b><u>13 potential core SSRs</u></b>		<b><u>3.61</u></b>	<b><u>0.80</u></b>	<b><u>1.64</u></b>

Potential core SSRs distinguished as **bold** and underlined

**Table S6.** Relative information of cultivars and hybrids from distinct regions of China.

No.	Code	Local Names	Type	Province	Region
1	LMY21	Lumianyan21	Cultivar	Shandong	YRCV
2	LMY28	Lumianyan28	Cultivar	Shandong	YRCV
3	ZZM2	Zhongzhimian2	Cultivar	Henan	YRCV
4	ZMS50	Zhongmiansuo50	Cultivar	Henan	YRCV
5	ZMS41	Zhongmiansuo41	Cultivar	Henan	YRCV
6	ZMS45	Zhongmiansuo45	Cultivar	Henan	YRCV
7	HM802	Hanmian802	Cultivar	Hebei	YRCV
8	SK126	Shikang126	Cultivar	Hebei	YRCV
9	GXM3	Guoxinmian3	Cultivar	Hebei	YRCV
10	CM3	Chuangmian3	Cultivar	Hebei	YRCV
11	HD284	Handan284	Cultivar	Hebei	YRCV
12	JF106	Jifeng106	Cultivar	Hebei	YRCV
13	HM103	Hanmian103	Cultivar	Hebei	YRCV
14	FKM1	Fengkangmian1	Cultivar	Hebei	YRCV
15	JK178	Jinke178	Cultivar	Henan	YRCV
16	JM38	Jinmian38	Cultivar	Henan	YRCV
17	KF868	Kuafeng868	Cultivar	Henan	YRCV
18	YS6	Yinshan6	Cultivar	Henan	YRCV
19	KM21	Kaimian21	Cultivar	Henan	YRCV
20	SNSM1	Shannongshengmian1	Cultivar	Shandong	YRCV
21	RH39	Renhe39hao	Cultivar	Shandong	YRCV
22	LMY27	Lumianyan27	Cultivar	Shandong	YRCV
23	XQ1	Xinqiu1hao	Cultivar	Shandong	YRCV
24	LMY29	Lumianyan29	Cultivar	Shandong	YRCV
25	ZMS49	Zhongmiansuo49	Cultivar	Henan	YRCV
26	XLZ33	xinluzao33	Cultivar	Xinjiang	NWDR
27	XLZ42	xinluzao42	Cultivar	Xinjiang	NWDR
28	XLZ36	xinluzao36	Cultivar	Xinjiang	NWDR
29	XLZ31	xinluzao31	Cultivar	Xinjiang	NWDR

30	XLZH26	Xinluzhong26	Cultivar	Xinjiang	NWDR
31	XLZH33	Xinluzhong33	Cultivar	Xinjiang	NWDR
32	XLZH28	Xinluzhong28	Cultivar	Xinjiang	NWDR
33	XLZH47	Xinluzhong47	Cultivar	Xinjiang	NWDR
34	XLZ48	Xinluzao48	Cultivar	Xinjiang	NWDR
35	XLZ12	Xinluzao12	Cultivar	Xinjiang	NWDR
36	XLZH40	Xinluzhong40	Cultivar	Xinjiang	NWDR
37	GKM1	Guokangmian1	Cultivar	Anhui	YzRCV
38	SK1	Sikang1	Cultivar	Jiangsu	YzRCV
39	ZMS47	Zhongmiansuo47	Hybrid	Henan	YRCV
40	ZMS48	Zhongmiansuo48	Hybrid	Henan	YRCV
41	ZMS51	Zhongmiansuo51	Hybrid	Henan	YRCV
42	ZMS59	Zhongmiansuo59	Hybrid	Henan	YRCV
43	ZMS70	Zhongmiansuo70	Hybrid	Henan	YRCV
44	EM10	Ezamian10	Hybrid	Hubei	YzRCV
45	SUZA3	Suza3	Hybrid	Jiangsu	YzRCV
46	XZM10	Xiangzamian10	Hybrid	Hunan	YzRCV
47	ZMS63	Zhongmiansuo63	Hybrid	Henan	YRCV
48	JCM1	Jichuangmian1	Hybrid	Hebei	YRCV
49	JM589	Jimian589	Hybrid	Hebei	YRCV
50	HM4	Hengmian4	Hybrid	Hebei	YRCV
51	YZ37	Yuza37	Hybrid	Henan	YRCV
52	KM5	Kaimian5	Hybrid	Henan	YRCV
53	YZ35	Yuza35	Hybrid	Henan	YRCV
54	LMY30	Lumianyan30	Hybrid	Shandong	YRCV
55	LMY15	Lumianyan15	Hybrid	Shandong	YRCV
56	LMY24	Lumianyan24	Hybrid	Shandong	YRCV
57	W8225	W8225	Hybrid	Shandong	YRCV
58	DZM1	Daizamian1F <sub>1</sub>	Hybrid	Anhui	YzRCV
59	WM31	Wanmian31	Hybrid	Anhui	YzRCV
60	WZ5	Wanza5	Hybrid	Anhui	YzRCV
61	QY2	Quanyin2	Hybrid	Anhui	YzRCV
62	GFM12	Guofengmian12F <sub>1</sub>	Hybrid	Anhui	YzRCV
63	WZ3	Wanza3	Hybrid	Anhui	YzRCV
64	WZ8	Wanza8	Hybrid	Anhui	YzRCV
65	WM25	Wanmian25	Hybrid	Anhui	YzRCV
66	WM19	Wanmian19	Hybrid	Anhui	YzRCV
67	EM26	Ezamian26	Hybrid	Hubei	YzRCV
68	EM17	Ezamian17F <sub>1</sub>	Hybrid	Hubei	YzRCV
69	EM23	Ezamian23F <sub>1</sub>	Hybrid	Hubei	YzRCV
70	GZM8	Gangzamian8F <sub>1</sub>	Hybrid	Hubei	YzRCV
71	EM5	Ezamian5	Hybrid	Hubei	YzRCV
72	EM14	Ezamian14F <sub>1</sub>	Hybrid	Hubei	YzRCV
73	EM13	Ezamian13F <sub>1</sub>	Hybrid	Hubei	YzRCV
74	EM16	Ezamian16F <sub>1</sub>	Hybrid	Hubei	YzRCV
75	JZ288	Jinza288	Hybrid	Hubei	YzRCV

76	ZKZ1	Zhongkangza1	Hybrid	Hubei	YzRCV
77	XZM7	Xiangzamian7	Hybrid	Hunan	YzRCV
78	XNM8	Xiangnongmian8	Hybrid	Hunan	YzRCV
79	XZM3	Xiangzamian3	Hybrid	Hunan	YzRCV
80	ZHM1	Zhenghuamian1	Hybrid	Hunan	YzRCV
81	XZM8	Xiangzamian8	Hybrid	Hunan	YzRCV
82	XZM16	Xiangzamian16	Hybrid	Hunan	YzRCV
83	XFM3	Xiangfengmian3	Hybrid	Hunan	YzRCV
84	KM3	Kemian3	Hybrid	Jiangsu	YzRCV
85	SIZA3	Siza3	Hybrid	Jiangsu	YzRCV
86	FM2	Fumian2	Hybrid	Jiangsu	YzRCV
87	NN6	Nannong6	Hybrid	Jiangsu	YzRCV
88	NK9	Nankang9	Hybrid	Jiangsu	YzRCV
89	YKZ1	Yankangza1	Hybrid	Jiangsu	YzRCV
90	XZ3	Xuza3	Hybrid	Jiangsu	YzRCV
91	SUZA201	Suza201	Hybrid	Jiangsu	YzRCV
92	SZM66	Suzamian66	Hybrid	Jiangsu	YzRCV
93	NN98-7	Nannong98-7	Hybrid	Jiangsu	YzRCV

YRCV: yellow river cotton valley, YzRCV: yangtze river cotton valley, NWDR: north west dry region

Supplementary Tables 2-5 are presented in a separate excel work sheet **“Supplementary table 2-5”** as it constituted matrices.