

**Supplementary Table S1: Chickpea genotypes used in the study and their cultivar types, geographical origin and inferred ancestry coefficients in population genetic structure analysis**

Sl. No.	Genotypes with Accession No.	Cultivar types	Geographical origin	Inferred population ancestry
1	ICC17123	<i>Cicer reticulatum</i> Wild	Turkey	Wild (Population Group I)
2	ICC17124	<i>Cicer reticulatum</i> Wild	Turkey	Wild (Population Group I)
3	ICC17160	<i>Cicer reticulatum</i> Wild	Turkey	Wild (Population Group I)
4	ICC17163	<i>Cicer reticulatum</i> Wild	Turkey	Wild (Population Group I)
5	ICC7571	<i>Cicer arietinum</i> Kabuli landrace	Israel	Wild (Population Group I)
6	ICC16796	<i>Cicer arietinum</i> Kabuli landrace	Portugal	Wild (Population Group I)
7	ICCV1	<i>Cicer arietinum</i> Desi variety	Western India	Desi (Population Group IIa)
8	ICCC37	<i>Cicer arietinum</i> Desi variety	Southern India	Desi (Population Group IIa)
9	ICCV88202	<i>Cicer arietinum</i> Desi variety	Northern India	Desi (Population Group IIa)
10	ICCV93952	<i>Cicer arietinum</i> Desi variety	Central India	Desi (Population Group IIa)
11	ICCV93954	<i>Cicer arietinum</i> Desi variety	Southern India	Desi (Population Group IIa)
12	ICCV91106	<i>Cicer arietinum</i> Desi variety	Central India	Desi (Population Group IIa)
13	ICCV92944	<i>Cicer arietinum</i> Desi variety	Central India	Desi (Population Group IIa)
14	ICCL87207	<i>Cicer arietinum</i> Desi variety	Central India	Desi (Population Group IIa)
15	ICC4951	<i>Cicer arietinum</i> Desi landrace	Central India	Desi (Population Group IIa)
16	ICC8933	<i>Cicer arietinum</i> Desi genetic stock	Northern India	Desi (Population Group IIa)
17	IC296131	<i>Cicer arietinum</i> Desi variety	Northern India	Desi (Population Group IIa)
18	IC296132	<i>Cicer arietinum</i> Desi variety	Northern India	Desi (Population Group IIa)
19	IC296133	<i>Cicer arietinum</i> Desi variety	Northern India	Desi (Population Group IIa)
20	BGD112	<i>Cicer arietinum</i> Desi genetic stock	Northern India	Desi (Population Group IIa)
21	BGD1103	<i>Cicer arietinum</i> Desi genetic stock	Northern India	Desi (Population Group IIa)
22	Pusa256	<i>Cicer arietinum</i> Desi variety	Northern India	Desi (Population Group IIa)
23	Pusa547	<i>Cicer arietinum</i> Desi variety	Northern India	Desi (Population Group IIa)
24	BGD72	<i>Cicer arietinum</i> Desi genetic stock	Northern India	Desi (Population Group IIa)
25	IC244160	<i>Cicer arietinum</i> Desi variety	Northern India	Desi (Population Group IIa)
26	IC244217	<i>Cicer arietinum</i> Desi variety	Northern India	Desi (Population Group IIa)
27	SBD377	<i>Cicer arietinum</i> Desi variety	Northern India	Desi (Population Group IIa)
28	Pusa2024	<i>Cicer arietinum</i> Desi variety	Northern India	Desi (Population Group IIa)
29	Pusa1103	<i>Cicer arietinum</i> Desi variety	Northern India	Desi (Population Group IIa)
30	ICC14402	<i>Cicer arietinum</i> Desi landrace	ICRISAT	Desi (Population Group IIa)
31	ICC5135	<i>Cicer arietinum</i> Desi landrace	India	Desi (Population Group IIa)
32	ICC13524	<i>Cicer arietinum</i> Desi landrace	Iran	Desi (Population Group IIa)
33	ICC13219	<i>Cicer arietinum</i> Desi landrace	Iran	Desi (Population Group IIa)
34	ICC13187	<i>Cicer arietinum</i> Desi landrace	Iran	Desi (Population Group IIa)
35	ICCV89314	<i>Cicer arietinum</i> Desi variety	Eastern India	Desi (Population Group IIb)
36	ICCV96970	<i>Cicer arietinum</i> Desi variety	Central India	Desi (Population Group IIb)
37	ICCV94954	<i>Cicer arietinum</i> Desi variety	Central India	Desi (Population Group IIb)
38	ICCV10	<i>Cicer arietinum</i> Desi variety	Southern/Central India	Desi (Population Group IIb)
39	ICCV93958	<i>Cicer arietinum</i> Desi variety	Southern India	Desi (Population Group IIb)
40	ICC4958	<i>Cicer arietinum</i> Desi landrace	Central India	Desi (Population Group IIb)
41	ICC3512	<i>Cicer arietinum</i> Desi landrace	Iran	Desi (Population Group IIb)

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42	ICC8950	<i>Cicer arietinum Desi</i> landrace	India	<i>Desi</i> (Population Group IIb)
43	ICC6263	<i>Cicer arietinum Desi</i> landrace	Russia & CISs	<i>Desi</i> (Population Group IIb)
44	ICC283	<i>Cicer arietinum Desi</i> landrace	India	<i>Desi</i> (Population Group IIb)
45	ICC1431	<i>Cicer arietinum Desi</i> landrace	India	<i>Desi</i> (Population Group IIb)
46	ICC4918	<i>Cicer arietinum Desi</i> breeding line/cultivar	India	<i>Desi</i> (Population Group IIb)
47	ICC1205	<i>Cicer arietinum Desi</i> landrace	India	<i>Desi</i> (Population Group IIb)
48	ICC1882	<i>Cicer arietinum Desi</i> landrace	India	<i>Desi</i> (Population Group IIb)
49	ICC1356	<i>Cicer arietinum Desi</i> landrace	India	<i>Desi</i> (Population Group IIb)
50	ICCX-810800	<i>Cicer arietinum Desi</i> variety	Northern India	<i>Desi</i> (Population Group IIb)
51	ICCX-820065	<i>Cicer arietinum Desi</i> variety	Western India	<i>Desi</i> (Population Group IIb)
52	ICCV90201	<i>Cicer arietinum Desi</i> variety	Northern India	<i>Desi</i> (Population Group IIb)
53	ICC1392	<i>Cicer arietinum Desi</i> landrace	India	<i>Desi</i> (Population Group IIb)
54	ICC3362	<i>Cicer arietinum Desi</i> landrace	Iran	<i>Desi</i> (Population Group IIb)
55	ICC2969	<i>Cicer arietinum Desi</i> landrace	Iran	<i>Desi</i> (Population Group IIb)
56	ICC12037	<i>Cicer arietinum Desi</i> landrace	Mexico	<i>Desi</i> (Population Group IIb)
57	ICC1052	<i>Cicer arietinum Desi</i> landrace	Pakistan	<i>Desi</i> (Population Group IIb)
58	ICC11284	<i>Cicer arietinum Desi</i> landrace	Russia & CISs	<i>Desi</i> (Population Group IIb)
59	ICCV2/ICC12968	<i>Cicer arietinum Kabuli</i> variety	Southern India	<i>Kabuli</i> (Population Group IIIa)
60	ICCV92311	<i>Cicer arietinum Kabuli</i> variety	Central India	<i>Kabuli</i> (Population Group IIIa)
61	ICCV95311	<i>Cicer arietinum Kabuli</i> variety	Southern India	<i>Kabuli</i> (Population Group IIIa)
62	ICCV96329	<i>Cicer arietinum Kabuli</i> variety	Southern India	<i>Kabuli</i> (Population Group IIIa)
63	ICCV95334	<i>Cicer arietinum Kabuli</i> variety	Central India	<i>Kabuli</i> (Population Group IIIa)
64	IC411514	<i>Cicer arietinum Kabuli</i> variety	Northern India	<i>Kabuli</i> (Population Group IIIa)
65	Pusa5028	<i>Cicer arietinum Kabuli</i> variety	Northern India	<i>Kabuli</i> (Population Group IIIa)
66	IC 449069	<i>Cicer arietinum Kabuli</i> variety	Northern India	<i>Kabuli</i> (Population Group IIIa)
67	Pusa5023	<i>Cicer arietinum Kabuli</i> variety	Northern India	<i>Kabuli</i> (Population Group IIIa)
68	Pusa2024	<i>Cicer arietinum Kabuli</i> variety	Northern India	<i>Kabuli</i> (Population Group IIIa)
69	IC 296376	<i>Cicer arietinum Kabuli</i> variety	Northern India	<i>Kabuli</i> (Population Group IIIa)
70	IC 244243	<i>Cicer arietinum Kabuli</i> variety	Northern India	<i>Kabuli</i> (Population Group IIIa)
71	ICC5003	<i>Cicer arietinum Kabuli</i> variety	Northern India	<i>Kabuli</i> (Population Group IIIa)
72	NA	<i>Cicer arietinum Kabuli</i> variety	Central India	<i>Kabuli</i> (Population Group IIIa)
73	BGD1105	<i>Cicer arietinum Kabuli</i> genetic stock	Northern India	<i>Kabuli</i> (Population Group IIIa)
74	ICC8740	<i>Cicer arietinum Kabuli</i> landrace	Afghanistan	<i>Kabuli</i> (Population Group IIIb)
75	ICC16524	<i>Cicer arietinum Kabuli</i> landrace	Pakistan	<i>Kabuli</i> (Population Group IIIb)
76	ICC13523	<i>Cicer arietinum Kabuli</i> landrace	Iran	<i>Kabuli</i> (Population Group IIIb)
77	ICC12328	<i>Cicer arietinum Kabuli</i> landrace	Cyprus	<i>Kabuli</i> (Population Group IIIb)
78	ICC7272	<i>Cicer arietinum Kabuli</i> landrace	Algeria	<i>Kabuli</i> (Population Group IIIb)
79	ICC11764	<i>Cicer arietinum Kabuli</i> landrace	Chile	<i>Kabuli</i> (Population Group IIIb)
80	ICC15697	<i>Cicer arietinum Kabuli</i> landrace	Syrian Arab Republic	<i>Kabuli</i> (Population Group IIIb)
81	ICC8261	<i>Cicer arietinum Kabuli</i> landrace	Turkey	<i>Kabuli</i> (Population Group IIIb)
82	ICC15333	<i>Cicer arietinum Kabuli</i> landrace	Iran	<i>Kabuli</i> (Population Group IIIb)
83	ICC10755	<i>Cicer arietinum Kabuli</i> landrace	Turkey	<i>Kabuli</i> (Population Group IIIb)
84	ICC10885	<i>Cicer arietinum Kabuli</i> landrace	Ethiopia	<i>Kabuli</i> (Population Group IIIb)
85	ICC9137	<i>Cicer arietinum Kabuli</i> landrace	Iran	<i>Kabuli</i> (Population Group IIIb)

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86	ICC15406	<i>Cicer arietinum Kabuli</i> landrace	Morocco	<i>Kabuli</i> (Population Group IIIb)
87	ICC8151	<i>Cicer arietinum Kabuli</i> landrace	United States of America	<i>Kabuli</i> (Population Group IIIb)
88	ICC14199	<i>Cicer arietinum Kabuli</i> landrace	Mexico	<i>Kabuli</i> (Population Group IIIb)
89	ICC12824	<i>Cicer arietinum Desi</i> landrace	Ethiopia	<i>Kabuli</i> (Population Group IIIb)
90	ICC12537	<i>Cicer arietinum Desi</i> landrace	Ethiopia	<i>Kabuli</i> (Population Group IIIb)
91	ICC9643	<i>Cicer arietinum Desi</i> landrace	Afghanistan	<i>Kabuli</i> (Population Group IIIb)
92	ICC8621	<i>Cicer arietinum Desi</i> landrace	Ethiopia	<i>Kabuli</i> (Population Group IIIb)
93	ICC9895	<i>Cicer arietinum Desi</i> landrace	Afghanistan	<i>Kabuli</i> (Population Group IIIb)
94	ICCV95332	<i>Cicer arietinum Kabuli</i> variety	Central India	<i>Kabuli</i> (Population Group IIIb)
95	ICCV95333	<i>Cicer arietinum Kabuli</i> variety	Central India	<i>Kabuli</i> (Population Group IIIb)
96	ICCV92337	<i>Cicer arietinum Kabuli</i> variety	Central India	<i>Kabuli</i> (Population Group IIIb)