

**Supplementary Materials:**

Table S 1: SNPs Genotype Profiles

Sample	rs12913832	rs1800407	rs12896399	rs16891982	rs1393350	rs12203592
DNA1	CT	GG	CC	GC	GG	CC
DNA2	TT	GA	AA	GC	GG	CC
DNA3	CT	GG	AA	GC	AA	CC
DNA4	TT	GG	CA	CC	GA	CC
DNA5	CC	GG	CC	GG	GG	CC
DNA6	TT	GA	CA	CC	GG	CC
DNA7	CC	GG	CA	GC	GG	CC
DNA8	CC	GG	CC	GC	GG	CC
DNA9	CC	GG	CC	GC	GG	CC
DNA10	TT	GG	CA	GG	GG	CC
DNA11	CC	GG	AA	CC	GA	CC
DNA12	CC	GG	CA	CC	GG	CC
DNA13	CC	GG	CA	CC	GG	CC
DNA14	TT	GG	CC	GG	GG	CC
DNA15	CC	GG	CA	CC	GG	CC
DNA16	CC	GG	AA	GC	GG	CC
DNA17	CC	GG	CC	GC	GG	CC
DNA18	TT	GG	CA	GG	GG	CC
DNA19	CC	GG	CC	GG	GG	CC
DNA20	CC	GG	CC	GC	GG	CC
DNA21	TT	GG	CC	GG	GG	CC
DNA22	CT	GG	CA	GG	GG	CC
DNA23	CT	GG	CA	GC	GG	CC
DNA24	TT	GA	CC	GG	GG	CC
DNA25	TT	GG	CA	GC	GG	CC
DNA26	TT	GG	CA	GG	GG	CC
DNA27	CC	GG	CC	GG	GG	CC
DNA28	CT	GG	CC	GC	GA	CC
DNA29	TT	GG	CC	GG	GA	CC
DNA30	TT	GG	CC	GG	GG	CC
DNA31	CT	GG	CC	GG	GG	CC
DNA32	CT	GG	CC	GG	GG	CC
DNA33	CT	GG	CA	GC	GG	CC
DNA34	CT	GG	CA	GG	GG	CC

DNA35	CT	GG	CC	GG	GG	CC
DNA36	CT	GG	CC	GG	GG	CC
DNA37	CT	GG	CC	GG	GG	CC
DNA38	CT	GG	CC	GC	GG	CC
DNA39	CT	GG	CA	GG	GG	CC
DNA40	CT	GG	CC	GC	GG	CC
DNA41	TT	GA	CC	GG	GA	CC
DNA42	CT	GG	CC	GG	GG	CC
DNA43	TT	GG	CA	GG	GG	CC
DNA44	TT	GG	CC	GG	GG	CC
DNA45	CT	GG	AA	GG	GG	CC
DNA46	CC	GG	CC	GG	GG	CC
DNA47	CT	GA	CC	GC	GG	CC
DNA48	CT	GG	CC	GC	GA	CC
DNA49	CT	GG	CC	GC	GG	CC
DNA50	TT	GG	CA	GC	GA	CC
DNA51	CT	GG	CA	GG	GG	CC
DNA52	CT	GA	CC	GC	GG	CC
DNA53	TT	GG	CC	GG	GG	CC
DNA54	CT	GA	CC	GC	GA	CC
DNA55	TT	GG	CA	GG	GG	CC
DNA56	CT	GG	CA	GG	GG	CC
DNA57	TT	GA	CA	GG	GG	CC
DNA58	CT	GG	CA	GG	GG	CC
DNA59	0	0	0	0	0	0
DNA60	CT	GG	CC	GG	GG	CC
DNA61	CT	GG	CA	GC	GG	CC
DNA62	TT	GA	CC	GG	GG	CC
DNA63	CT	GG	CA	GC	GG	CT
DNA64	CT	GG	CC	CC	GG	CC
DNA65	CT	GA	CA	CC	GG	CC
DNA66	CT	GA	CC	CC	GG	CC
DNA67	TT	GA	CC	CC	GG	CC
DNA68	CT	GG	CC	GG	GG	CC
DNA69	TT	GA	CA	GC	GG	CC
DNA70	CC	GG	CC	GG	GG	CC
DNA71	TT	GA	CA	GG	GA	CC
DNA72	TT	GG	CC	GG	GG	CC

DNA73	CT	GG	CC	GG	GG	CC
DNA74	TT	GG	CC	GC	GG	CC
DNA75	CT	GG	CA	CC	GG	CC
DNA76	CT	GG	CC	GC	GG	CC
DNA77	TT	GG	CC	GG	GG	CC
DNA78	CT	GG	CC	GG	GG	CC
DNA79	CT	GG	CC	GG	GG	CC
DNA80	CT	GG	CC	CC	GG	CC
DNA81	TT	GG	CC	GG	GG	CC
DNA82	TT	GG	CC	GG	GG	CC
DNA83	CT	GG	CC	GG	GG	CC
DNA84	CC	GG	CC	GC	GG	CC
DNA85	CT	GG	CC	GG	GG	CC
DNA86	CT	GG	AA	GC	AA	CC
DNA87	TT	GG	CC	GG	GG	CC
DNA88	CT	GG	AA	GC	AA	CC
DNA89	CC	GG	CC	GG	GG	CC
DNA90	CT	GG	AA	GC	AA	CC
DNA91	CT	GG	CC	GG	GG	CC
DNA92	CT	GG	CC	GG	GG	CC
DNA93	TT	GG	CC	GG	GG	CC
DNA94	TT	GG	CA	GG	GG	CC
DNA95	CC	GG	CC	GG	GG	CC
DNA96	CT	GG	CC	GG	GG	CC
DNA97	TT	GG	CA	GG	GG	CC
DNA98	TT	GG	CC	GG	GG	CC
DNA99	TT	GG	CA	GG	GG	CC
DNA100	CC	GG	CA	CC	GG	CC
DNA101	CT	GG	CC	GG	GG	CC
DNA102	CT	GG	AA	GC	AA	CC
DNA103	TT	GG	CC	GG	GG	CC
DNA104	TT	GG	CA	GG	GG	CC
DNA105	CT	GG	CC	GG	GG	CC
DNA106	TT	GG	CC	GG	GG	CC
DNA107	CT	GG	AA	GC	AA	CC
DNA108	CT	GG	CC	GG	GG	CC
DNA109	TT	GG	CC	GG	GG	CC
DNA110	TT	GG	CC	GG	GG	CC

DNA111	CT	GG	AA	GC	AA	CC
DNA112	TT	GG	CC	GG	GG	CC
DNA113	CT	GG	CC	GG	GG	CC
DNA114	TT	GG	CC	GG	GG	CC
DNA115	TT	GG	CC	GG	GG	CC
DNA116	CT	GG	CC	GG	GG	CC
DNA117	TT	GG	CC	GG	GG	CC
DNA118	CT	GG	AA	GC	AA	CC
DNA119	CC	GG	CA	CC	GG	CC
DNA120	CT	GG	CC	GG	GG	CC
DNA121	TT	GG	CC	GG	GG	CC
DNA122	TT	GG	CA	GG	GG	CC
DNA123	TT	GG	CC	GG	GG	CC
DNA124	TT	GG	CA	GG	GG	CC
DNA125	TT	GG	CC	GG	GG	CC
DNA126	TT	GG	CC	GG	GG	CC
DNA127	TT	GG	CC	GG	GG	CC
DNA128	TT	GG	CC	GG	GG	CC
DNA129	CC	GG	CC	GG	GG	CC
DNA130	TT	GG	CC	GG	GG	CC
DNA131	CT	GG	CC	GG	GG	CC
DNA132	TT	GG	CC	GG	GG	CC
DNA133	CT	GG	CC	GG	GG	CC
DNA134	CC	GG	CC	GG	GG	CC
DNA135	CC	GG	CA	CC	GG	CC
DNA136	CT	GG	CC	GG	GG	CC
DNA137	CC	GG	CC	GG	GG	CC
DNA138	CC	GG	CA	CC	GG	CC
DNA139	TT	GG	CC	GG	GG	CC
DNA140	TT	GG	CC	GG	GG	CC
DNA141	CT	GG	CC	GG	GG	CC
DNA142	CT	GG	AA	GC	AA	CC
DNA143	TT	GG	CC	GG	GG	CC
DNA144	CT	GG	AA	GC	AA	CC
DNA145	TT	GG	CC	GG	GG	CC
DNA146	TT	GG	CC	GG	GG	CC
DNA147	CT	GG	CC	GG	GG	CC
DNA148	TT	GG	CC	GG	GG	CC

DNA149	CC	GG	CC	GG	GG	CC
DNA150	CC	GG	CC	GG	GG	CC

Table S 2: Irisplex 6 SNP genotypes colour prediction probabilities together with samples details of Pakhtoon population.

Sam ple	rs129 13832	rs180 0407	rs128 96399	rs168 91982	rs139 3350	rs122 03592	P Blue Eye	P Inter Eye	P Brown Eye	Gen der	Irisplex Result	Pheno Eye Colour
Swat 1	CT	GG	CC	GC	GG	CC	0.012 23	0.0500 34	0.93773 6	M	Brown	Brown
2	TT	GA	AA	GC	GG	CC	0.000 223	0.0139 89	0.98578 8	M	Brown	Brown
3	CT	GG	AA	GC	AA	CC	0.012 23	0.0500 34	0.93773 6	F	Brown	Brown
4	TT	GG	CA	CC	GA	CC	1.29E- 05	0.0020 91	0.99789 6	F	Brown	Brown
5	CC	GG	CC	GG	GG	CC	0.847 81	0.0876 63	0.06452 7	F	Blue	Blue
6	TT	GA	CA	CC	GG	CC	4.87E- 05	0.0055 44	0.99440 7	F	Brown	Brown
7	CC	GG	CA	GC	GG	CC	0.649 894	0.1218 39	0.22826 7	M	Blue	Blue
8	CC	GG	CC	GC	GG	CC	0.649 894	0.1218 39	0.22826 7	F	Blue	INTER
9	CC	GG	CC	GC	GG	CC	0.649 894	0.1218 39	0.22826 7	M	Blue	INTER
10	TT	GG	CA	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	Brown	Brown
11	CC	GG	AA	CC	GA	CC	0.337 744	0.1148 04	0.54745 2	F	Brown	INTER
12	CC	GG	CA	CC	GG	CC	0.337 744	0.1148 04	0.54745 2	M	Brown	INTER
13	CC	GG	CA	CC	GG	CC	0.337 744	0.1148 04	0.54745 2	F	Brown	INTER
14	TT	GG	CC	GG	GG	CC	0.000	0.0133	0.98633	M	Brown	Brown

							272	9	8			
15	CC	GG	CA	CC	GG	CC	0.337 744	0.1148 04	0.54745 2	F	Brown	INTER
16	CC	GG	AA	GC	GG	CC	0.649 894	0.1218 39	0.22826 7	M	Blue	INTER
17	CC	GG	CC	GC	GG	CC	0.649 894	0.1218 39	0.22826 7	M	Blue	INTER
18	TT	GG	CA	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	Brown	Brown
19	CC	GG	CC	GG	GG	CC	0.847 81	0.0876 63	0.06452 7	F	Blue	Blue
20	CC	GG	CC	GC	GG	CC	0.649 894	0.1218 39	0.22826 7	M	Blue	INTER
Mala kan d21	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
22	CT	GG	CA	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	M	BROW N	BROWN
23	CT	GG	CA	GC	GG	CC	0.012 23	0.0500 34	0.93773 6	M	BROW N	BROWN
24	TT	GA	CC	GG	GG	CC	0.001 006	0.0348 25	0.96416 9	M	BROW N	BROWN
25	TT	GG	CA	GC	GG	CC	5.94E- 05	0.0053 05	0.99463 5	M	BROW N	BROWN
26	TT	GG	CA	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
27	CC	GG	CC	GG	GG	CC	0.847 81	0.0876 63	0.06452 7	M	BLUE	BLUE
28	CT	GG	CC	GC	GA	CC	0.012 23	0.0500 34	0.93773 6	F	BROW N	BROWN
29	TT	GG	CC	GG	GA	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
30	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BROWN
31	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	F	BROW N	BROWN
32	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	F	BROW N	BROWN

33	CT	GG	CA	GC	GG	CC	0.012 23	0.0500 34	0.93773 6	F	BROW N	BROWN
34	CT	GG	CA	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	M	BROW N	BROWN
35	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	F	BROW N	BROWN
36	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	M	BROW N	INTER
37	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	F	BROW N	BROWN
38	CT	GG	CC	GC	GG	CC	0.012 23	0.0500 34	0.93773 6	F	BROW N	BROWN
39	CT	GG	CA	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	F	BROW N	BROWN
40	CT	GG	CC	GC	GG	CC	0.012 23	0.0500 34	0.93773 6	F	BROW N	INTER
Bun er 41	TT	GA	CC	GG	GA	CC	0.001 006	0.0348 25	0.96416 9	F	BROW N	BROWN
42	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	F	BROW N	BROWN
43	TT	GG	CA	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BROWN
44	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BROWN
45	CT	GG	AA	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	F	BROW N	INTER
46	CC	GG	CC	GG	GG	CC	0.847 81	0.0876 63	0.06452 7	M	BLUE	BLUE
47	CT	GA	CC	GC	GG	CC	0.041 43	0.1191 62	0.83940 8	F	BROW N	BROWN
48	CT	GG	CC	GC	GA	CC	0.012 23	0.0500 34	0.93773 6	M	BROW N	BROWN
49	CT	GG	CC	GC	GG	CC	0.012 23	0.0500 34	0.93773 6	M	BROW N	INTER
50	TT	GG	CA	GC	GA	CC	5.94E- 05	0.0053 05	0.99463 5	M	BROW N	BROWN
51	CT	GG	CA	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	M	BROW N	BROWN

52	CT	GA	CC	GC	GG	CC	0.041 43	0.1191 62	0.83940 8	M	BROW N	INTER
53	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BROWN
54	CT	GA	CC	GC	GA	CC	0.041 43	0.1191 62	0.83940 8	M	BROW N	INTER
55	TT	GG	CA	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BROWN
56	CT	GG	CA	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	M	BROW N	INTER
57	CT	GA	CA	GG	GG	CC	0.001 006	0.0348 25	0.96416 9	M	BROW N	INTER
58	CT	GG	CA	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	M	BROW N	BROWN
59	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BROWN
60	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	F	BROW N	INTER
Shan gla 61	CT	GG	CA	GC	GG	CC	0.012 23	0.0500 34	0.93773 6	F	BROW N	INTER
62	TT	GA	CC	GG	GG	CC	0.001 006	0.0348 25	0.96416 9	F	BROW N	BROWN
63	CT	GG	CA	GC	GG	CT	0.022 247	0.0903 19	0.88743 4	M	BROW N	BROWN
64	CT	GG	CC	CC	GG	CC	0.002 76	0.0204 76	0.97676 4	F	BROW N	BROWN
65	CT	GA	CA	CC	GG	CC	0.010 029	0.0522 98	0.93767 4	F	BROW N	BROWN
66	CT	GA	CC	CC	GG	CC	0.010 029	0.0522 98	0.93767 4	M	BROW N	BROWN
67	TT	GA	CC	CC	GG	CC	4.87E- 05	0.0055 44	0.99440 7	M	BROW N	BROWN
68	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	F	BROW N	BROWN
69	TT	GA	CA	GC	GG	CC	0.000 223	0.0139 89	0.98578 8	F	BROW N	BROWN
70	CC	GG	CC	GG	GG	CC	0.847	0.0876	0.06452	M	BLUE	BLUE



							81	63	7			
71	TT	GA	CA	GG	GA	CC	0.001006	0.034825	0.964169	F	BROWN	BROWN
72	TT	GG	CC	GG	GG	CC	0.000272	0.01339	0.986338	F	BROWN	BROWN
73	CT	GG	CC	GG	GG	CC	0.050323	0.113551	0.836126	F	BROWN	BROWN
74	TT	GG	CC	GC	GG	CC	5.94E-05	0.005305	0.994635	F	BROWN	BROWN
75	CT	GG	CA	CC	GG	CC	0.00276	0.020476	0.976764	F	BROWN	BROWN
76	CT	GG	CC	GC	GG	CC	0.01223	0.050034	0.937736	F	BROWN	BROWN
77	TT	GG	CC	GG	GG	CC	0.000272	0.01339	0.986338	F	BROWN	BROWN
78	CT	GG	CC	GG	GG	CC	0.050323	0.113551	0.836126	F	BROWN	BROWN
79	CT	GG	CC	GG	GG	CC	0.050323	0.113551	0.836126	F	BROWN	INTER
80	CT	GG	CC	CC	GG	CC	0.050323	0.113551	0.836126	F	BROWN	BROWN
L Dir 81	TT	GG	CC	GG	GG	CC	0.000272	0.01339	0.986338	M	BROWN	BROWN
82	TT	GG	CC	GG	GG	CC	0.000272	0.01339	0.986338	M	BROWN	BROWN
83	CT	GG	CC	GG	GG	CC	0.050323	0.113551	0.836126	F	BROWN	BROWN
84	CC	GG	CC	GC	GG	CC	0.649894	0.121839	0.228267	M	BLUE	INTER
85	CT	GG	CC	GG	GG	CC	0.050323	0.113551	0.836126	M	BROWN	BROWN
86	CT	GG	AA	GC	AA	CC	0.01223	0.050034	0.937736	F	BROWN	BROWN
87	TT	GG	CC	GG	GG	CC	0.000272	0.01339	0.986338	M	BROWN	BROWN
88	CT	GG	AA	GC	AA	CC	0.01223	0.050034	0.937736	M	BROWN	BROWN

89	CC	GG	CC	GG	GG	CC	0.847 81	0.0876 63	0.06452 7	M	BLUE	BLUE
90	CT	GG	AA	GC	AA	CC	0.012 23	0.0500 34	0.93773 6	F	BROW N	BROWN
91	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	F	BROW N	BROWN
92	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	M	BROW N	INTER
93	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
94	TT	GG	CA	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BROWN
95	CC	GG	CC	GG	GG	CC	0.847 81	0.0876 63	0.06452 7	M	BLUE	BLUE
96	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	M	BROW N	BROWN
97	TT	GG	CA	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
98	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BROWN
99	TT	GG	CA	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BROWN
100	CC	GG	CA	CC	GG	CC	0.337 744	0.1148 04	0.54745 2	M	BROW N	INTER
Chitral 101	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	M	BROW N	BROWN
102	CT	GG	AA	GC	AA	CC	0.012 23	0.0500 34	0.93773 6	F	BROW N	BROWN
103	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
104	TT	GG	CA	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BROWN
105	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	F	BROW N	BROWN
106	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BROWN
107	CT	GG	AA	GC	AA	CC	0.012	0.0500	0.93773	F	BROW	BROWN

							23	34	6		N	
108	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	F	BROW N	BROWN
109	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BROWN
110	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BROWN
111	CT	GG	AA	GC	AA	CC	0.012 23	0.0500 34	0.93773 6	M	BROW N	BROWN
112	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
113	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	M	BROW N	BROWN
114	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
115	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
116	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	M	BROW N	BROWN
117	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
118	CT	GG	AA	GC	AA	CC	0.012 23	0.0500 34	0.93773 6	M	BROW N	BROWN
119	CC	GG	CA	CC	GG	CC	0.337 744	0.1148 04	0.54745 2	M	BROW N	INTER
120	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	M	BROW N	BROWN
U.Di r121	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BRWON
122	TT	GG	CA	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
123	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
124	TT	GG	CA	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
125	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
126	TT	GG	CC	GG	GG	CC	0.000	0.0133	0.98633	F	BROW	BROWN

							272	9	8		N	
127	TT	GG	CC	GG	GG	CC	0.000	0.0133	0.98633	M	BROW	BROWN
							272	9	8		N	
128	TT	GG	CC	GG	GG	CC	0.000	0.0133	0.98633	M	BROW	BROWN
							272	9	8		N	
129	CC	GG	CC	GG	GG	CC	0.847	0.0876	0.06452	F	BLUE	BLUE
							81	63	7			
130	TT	GG	CC	GG	GG	CC	0.000	0.0133	0.98633	M	BROW	BROWN
							272	9	8		N	
131	CT	GG	CC	GG	GG	CC	0.050	0.1135	0.83612	M	BROW	BROWN
							323	51	6		N	
132	TT	GG	CC	GG	GG	CC	0.000	0.0133	0.98633	M	BROW	BROWN
							272	9	8		N	
133	CT	GG	CC	GG	GG	CC	0.050	0.1135	0.83612	M	BROW	BROWN
							323	51	6		N	
134	CC	GG	CC	GG	GG	CC	0.847	0.0876	0.06452	M	BLUE	BLUE
							81	63	7			
135	CC	GG	CA	CC	GG	CC	0.337	0.1148	0.54745	M	BROW	INTER
							744	04	2		N	
136	CT	GG	CC	GG	GG	CC	0.050	0.1135	0.83612	M	BROW	Brown
							323	51	6		N	
137	CC	GG	CC	GG	GG	CC	0.847	0.0876	0.06452	M	BLUE	BLUE
							81	63	7			
138	CC	GG	CA	CC	GG	CC	0.337	0.1148	0.54745	M	BROW	INTER
							744	04	2		N	
139	TT	GG	CC	GG	GG	CC	0.000	0.0133	0.98633	M	BROW	BROWN
							272	9	8		N	
140	TT	GG	CC	GG	GG	CC	0.000	0.0133	0.98633	M	BROW	BROWN
							272	9	8		N	
141	CT	GG	CC	GG	GG	CC	0.050	0.1135	0.83612	M	BROW	BROWN
							323	51	6		N	
142	CT	GG	AA	GC	AA	CC	0.012	0.0500	0.93773	M	BROW	BROWN
							23	34	6		N	
143	TT	GG	CC	GG	GG	CC	0.000	0.0133	0.98633	F	BROW	BROWN
							272	9	8		N	
144	CT	GG	AA	GC	AA	CC	0.012	0.0500	0.93773	F	BROW	BROWN
							23	34	6		N	
Swat	TT	GG	CC	GG	GG	CC	0.000	0.0133	0.98633	F	BROW	BROWN

145							272	9	8		N	
146	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	M	BROW N	BROWN
147	CT	GG	CC	GG	GG	CC	0.050 323	0.1135 51	0.83612 6	M	BROW N	Brown
148	TT	GG	CC	GG	GG	CC	0.000 272	0.0133 9	0.98633 8	F	BROW N	BROWN
149	CC	GG	CC	GG	GG	CC	0.847 81	0.0876 63	0.06452 7	M	BLUE	BLUE
150	CC	GG	CC	GG	GG	CC	0.847 81	0.0876 63	0.06452 7	M	BLUE	BLUE

Table S 3: FROG- kb 6 SNP genotypes and colour prediction probabilities together with samples details of Pakhtoon population. Blue colour indicated Blue eye colour, green indicated Intermediate and brown colour indicated brown eye colour

Sam ple ID	rs1800 407	rs168 918	rs1393 350	rs1291 3832	rs1289 6399	rs1220 3592	P- Blue	P- Interme diate	P- Brow n	Predic ted eye	Actu al Eye Colo ur
1	CT	G	CC	GC	GG	CC	0.024 17	0.08345	0.892 4	Brow n	Brow n
2	TT	A	AA	GC	GG	CC	0.001 808	0.03577	0.962 4	Brow n	Brow n
3	CT	GG	AA	GC	AA	CC	0.918 9	0.04365	0.037 43	Blue	Brow n
4	TT	GG	CA	CC	GA	CC	1.17E -04	0.007928	0.992	Brow n	Brow n
5	CC	GG	CC	GG	GG	CC	0.870 2	0.07638	0.053 47	Blue	Blue
6	TT	GA	CA	CC	GG	CC	2.37E -04	0.01735	0.982 4	Brow n	Brow n
7	CC	GG	CA	GC	GG	CC	0.779 9	0.08983	0.130 3	Blue	Blue
8	CC	GG	CC	GC	GG	CC	0.677 6	0.131	0.191 5	Blue	INTE R
9	CC	GG	CC	GC	GG	CC	0.677 6	0.131	0.191 5	Blue	INTE R
10	TT	GG	CA	GG	GG	CC	2.37E -04	0.01735	0.982 4	Brow n	Brow n
11	CC	GG	AA	CC	GA	CC	0.705 5	0.08871	0.205 8	Blue	INTE R
12	CC	GG	CA	CC	GG	CC	0.494 6	0.1254	0.38	Blue	INTE R
13	CC	GG	CA	CC	GG	CC	0.367	0.1562	0.476 8	Brow n	INTE R
14	TT	GG	CC	GG	GG	CC	2.37E -04	0.01735	0.982 4	Brow n	Brow n
15	CC	GG	CA	CC	GG	CC	0.494 6	0.1254	0.38	Blue	INTE R
16	CC	GG	AA	GC	GG	CC	0.856 6	0.0588	0.084 64	Blue	INTE R
17	CC	GG	CC	GC	GG	CC	0.677 6	0.131	0.191 5	Blue	INTE R
18	TT	GG	CA	GG	GG	CC	7.17E -04	0.00613	0.993 8	Brow n	Brow n
19	CC	GG	CC	GG	GG	CC	0.870 2	0.07638	0.053 447	Blue	Blue
20	CC	GG	CC	GC	GG	CC	0.677 6	0.131	0.191 5	Blue	INTE R
21	TT	GG	CC	GG	GG	CC	7.17E -04	0.00613	0.993 8	Brow n	BRO WN

22	CT	GG	CA	GG	GG	CC	0.1496	0.1398	0.7105	Brown	BROWN
23	CT	GG	CA	GC	GG	CC	0.04017	0.08266	0.8772	Brown	BROWN
24	TT	GA	CC	GG	GG	CC	0.0027	0.0708	0.9264	Brown	BROWN
25	TT	GG	CA	GC	GG	CC	3.46E-04	0.01271	0.9869	Brown	BROWN
26	TT	GG	CA	GG	GG	CC	2.75E-05	0.02597	0.9731	Brown	BROWN
27	CC	GG	CC	GG	GG	CC	0.367	0.1562	0.4768	Brown	BLUE
28	CT	GG	CC	GC	GA	CC	0.03626	0.1041	0.8596	Brown	BROWN
29	TT	GG	CC	GG	GA	CC	0.001433	0.03338	0.9652	Brown	BROWN
30	TT	GG	CC	GG	GG	CC	0.001433	0.03338	0.9652	Brown	BROWN
31	CT	GG	CC	GG	GG	CC	4.48E-05	0.006084	0.9939	Brown	BROWN
32	CT	GG	CC	GG	GG	CC	0.005606	0.04262	0.9518	Brown	BROWN
33	CT	GG	CA	GC	GG	CC	0.02417	0.08345	0.8924	Brown	BROWN
34	CT	GG	CA	GG	GG	CC	0.1496	0.1398	0.7105	Brown	BROWN
35	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
36	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	INTER
37	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
38	CT	GG	CC	GC	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
39	CT	GG	CA	GG	GG	CC	0.00944	0.04277	0.9478	Brown	BROWN
40	CT	GG	CC	GC	GG	CC	0.09436	0.1479	0.7577	Brown	INTER
41	TT	GA	CC	GG	GA	CC	0.004263	0.08972	0.906	Brown	BROWN
42	CT	GG	CC	GG	GG	CC	0.005606	0.04262	0.9518	Brown	BROWN
43	TT	GG	CA	GG	GG	CC	0.001567	0.02615	0.9723	Brown	BROWN
44	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
45	CT	GG	AA	GG	GG	CC	0.2291	0.1276	0.6433	Brown	INTER
46	CC	GG	CC	GG	GG	CC	0.8702	0.07638	0.05347	Blue	BLUE
47	CT	GA	CC	GC	GG	CC	0.063	0.1978	0.738	Brown	BRO

							42		8	n	WN
48	CT	GG	CC	GC	GA	CC	0.03626	0.1041	0.8596	Brown	BROWN
49	CT	GG	CC	GC	GG	CC	0.02417	0.08345	0.8924	Brown	INTER
50	TT	GG	CA	GC	GA	CC	5.37E-04	0.01641	0.9831	Brown	BROWN
51	CT	GG	CA	GG	GG	CC	0.1496	0.1398	0.7105	Brown	BROWN
52	CT	GA	CC	GC	GG	CC	0.06342	0.1978	0.7388	Brown	INTER
53	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
54	CT	GA	CC	GC	GA	CC	0.09031	0.2343	0.6754	Brown	INTER
55	TT	GG	CA	GG	GG	CC	0.001567	0.02615	0.9723	Brown	BROWN
56	CT	GG	CA	GG	GG	CC	0.001567	0.02615	0.9723	Brown	INTER
57	CT	GA	CA	GG	GG	CC	0.2992	0.2526	0.4482	Brown	INTER
58	CT	GG	CA	GG	GG	CC	0.745	0.1198	0.1352	Blue	BROWN
59	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
60	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	INTER
61	CT	GG	CA	GC	GG	CC	0.09436	0.1479	0.7577	Brown	INTER
62	TT	GA	CC	GG	GG	CC	0.002799	0.0708	0.9264	Brown	BROWN
63	CT	GG	CA	GC	GG	CT	0.04017	0.08266	0.8772	Brown	BROWN
64	CT	GG	CC	CC	GG	CC	0.005606	0.04262	0.9518	Brown	BROWN
65	CT	GA	CA	CC	GG	CC	0.0272	0.1113	0.8615	Brown	BROWN
66	CT	GA	CC	CC	GG	CC	0.01628	0.1118	0.8719	Brown	BROWN
67	TT	GA	CC	CC	GG	CC	1.40E-04	0.01722	0.9826	Brown	BROWN
68	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
69	TT	GA	CA	GC	GG	CC	0.00107	0.03553	0.9634	Brown	BROWN
70	CC	GG	CC	GG	GG	CC	0.6776	0.131	0.1915	Blue	BLUE
71	TT	GA	CA	GG	GA	CC	0.007182	0.09008	0.9027	Brown	BROWN
72	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN



73	CT	GG	CC	GG	GG	CC	9436	0.1479	0.7577	Brown	BROWN
74	TT	GG	CC	GC	GG	CC	2.05E-04	0.01262	0.9872	Brown	BROWN
75	CT	GG	CA	CC	GG	CC	0.00944	0.04277	0.9478	Brown	BROWN
76	CT	GG	CC	GC	GG	CC	0.02417	0.08345	0.8924	Brown	BROWN
77	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
78	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
79	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	INTER
80	CT	GG	CC	CC	GG	CC	0.005606	0.04262	0.9518	Brown	BROWN
81	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
82	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
83	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
84	CC	GG	CC	GC	GG	CC	0.6776	0.131	0.1915	Blue	INTER
85	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
86	CT	GG	AA	GC	AA	CC	0.1394	0.1183	0.7422	Brown	BROWN
87	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
88	CT	GG	AA	GC	AA	CC	0.1394	0.1183	0.7422	Brown	BROWN
89	CC	GG	CC	GG	GG	CC	0.8702	0.07638	0.05347	Blue	BLUE
90	CT	GG	AA	GC	AA	CC	0.1394	0.1183	0.7422	Brown	BROWN
91	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
92	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	INTER
93	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
94	TT	GG	CA	GG	GG	CC	0.001567	0.02615	0.9723	Brown	BROWN
95	CC	GG	CC	GG	GG	CC	0.8702	0.07638	0.05347	Blue	BLUE
96	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
97	TT	GG	CA	GG	GG	CC	0.001567	0.02615	0.9723	Brown	BROWN
98	TT	GG	CC	GG	GG	CC	9.28E	0.02597	0.973	Brown	BRO

							-04		1	n	WN
99	TT	GG	CA	GG	GG	CC	0.001567	0.02615	0.9723	Brown	BROWN
100	CC	GG	CA	CC	GG	CC	0.4946	0.1254	0.38	Blue	INTER
101	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
102	CT	GG	AA	GC	AA	CC	0.1394	0.1183	0.7422	Brown	BROWN
103	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
104	TT	GG	CA	GG	GG	CC	0.001567	0.02615	0.9723	Brown	BROWN
105	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
106	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
107	CT	GG	AA	GC	AA	CC	0.1394	0.1183	0.7422	Brown	BROWN
108	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
109	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
110	TT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
111	CT	GG	AA	GC	AA	CC	0.1394	0.1183	0.7422	Brown	BROWN
112	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
113	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
114	TT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
115	TT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
116	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
117	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
118	CT	GG	AA	GC	AA	CC	0.1394	0.1183	0.7422	Brown	BROWN
119	CC	GG	CA	CC	GG	CC	0.4946	0.1254	0.38	Blue	INTER
120	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
121	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BRWON
122	TT	GG	CA	GG	GG	CC	0.001567	0.02615	0.9723	Brown	BROWN
123	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN

124	TT	GG	CA	GG	GG	CC	0.001567	0.02615	0.9723	Brown	BROWN
125	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
126	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
127	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
128	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
129	CC	GG	CC	GG	GG	CC	0.8702	0.07638	0.05347	Blue	BLUE
130	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
131	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
132	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
133	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
134	CC	GG	CC	GG	GG	CC	0.8702	0.07638	0.05347	Blue	BLUE
135	CC	GG	CA	CC	GG	CC	0.4946	0.1254	0.38	Blue	INTER
136	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	Brown
137	CC	GG	CC	GG	GG	CC	0.8702	0.07638	0.05347	Blue	BLUE
138	CC	GG	CA	CC	GG	CC	0.4946	0.1254	0.38	Blue	INTER
139	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
140	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
141	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
142	CT	GG	AA	GC	AA	CC	0.001808	0.03577	0.9624	Brown	BROWN
143	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
144	CT	GG	AA	GC	AA	CC	0.001808	0.03577	0.9624	Brown	BROWN
145	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
146	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
147	CT	GG	CC	GG	GG	CC	0.09436	0.1479	0.7577	Brown	BROWN
148	TT	GG	CC	GG	GG	CC	9.28E-04	0.02597	0.9731	Brown	BROWN
149	CC	GG	CC	GG	GG	CC	0.870	0.07638	0.053	Blue	BLUE

							2		47		
150	CC	GG	CC	GG	GG	CC	0.870 2	0.07638	0.053 47	Blue	BLUE