

## FOR THE RECORD

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# Genotype Profile for Thirteen Tetranucleotide Repeat Loci and Two Pentanucleotide Repeat Loci in Four Endogamous Tamil Population Groups of India\*

**POPULATION:** Four endogamous populations: Tanjore Kallar (Population size: 3 million approximately), Vanniyar (Population size: 3.5 million approximately), Pallar (Population size: 1 million approximately) and Paraiyar (Population size: 1 million approximately) residing in Tamil Nadu, India.

**KEYWORDS:** forensic science, human identification, DNA profiling, short tandem repeats, D3S1358, TH01, D21S11, D18S51, Penta E, D5S818, D13S317, D7S820, D16S539, CSF1P0, Penta D, vWA, D8S1179, TPOX, FGA, population genetics, India, Tamil Nadu, Tanjore Kallar, Vanniyar, Pallar, Paraiyar

Blood samples were obtained by venipuncture from random individuals of the populations: Tanjore Kallar (101), Vanniyar (87), Pallar (33) and Paraiyar (21). DNA was isolated using standard phenol/chloroform procedure (1). The 13 tetranucleotide repeat loci and two pentanucleotide repeat loci were amplified using the PowerPlex<sup>®</sup> 16 system (Promega Corporation, Madison) according to manufacturer's recommendations (2). The amplified products were separated and detected using the ABI Prism<sup>™</sup> 377 DNA Sequencer (PE Applied Biosystems, Foster City). The data were analyzed using DNATYPE program (3). The genotype frequencies of the 15 loci studied in the four endogamous Tamil populations are given in Tables 1–4. Statistical results for G-square test, exact test, observed and expected homozygosity are presented in Tables 5–8. The data are consistent with that generated on other studied Indian population groups (4–7).

The complete data set is available to any interested researcher upon request.

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TABLE 5—Statistical results of G-square test, exact test, observed and expected homozygosity for 13 tetranucleotide repeat loci and two pentanucleotide repeat loci in Tanjore Kallars.

Parameters	D3S1358	TH01	D21S11	D18S51	Penta E	D5S818	D13S317	D7S820	D16S539	CSFIPO	Penta D	vWa	D8S1179	TPOX	FGA
Obs. homozygosity	0.337	0.287	0.168	0.149	0.079	0.238	0.267	0.248	0.208	0.372	0.267	0.158	0.149	0.317	0.109
Exp. homozygosity	0.255	0.207	0.161	0.128	0.095	0.219	0.209	0.225	0.211	0.328	0.215	0.164	0.160	0.312	0.130
Exact test (p)	0.166	0.151	0.064	0.632	0.345	0.337	0.044	0.494	0.211	0.776	0.484	0.465	0.940	0.054	0.343
G-square test (p)	0.254	0.252	0.136	0.489	0.232	0.367	0.028	0.588	0.222	0.778	0.658	0.533	0.991	0.041	0.471

TABLE 6—Statistical results of G-square test, exact test, observed and expected homozygosity for 13 tetranucleotide repeat loci and two pentanucleotide repeat loci in Vanniars.

Parameters	D3S1358	TH01	D21S11	D18S51	Penta E	D5S818	D13S317	D7S820	D16S539	CSFIPO	Penta D	vWa	D8S1179	TPOX	FGA
Obs. homozygosity	0.195	0.184	0.149	0.161	0.092	0.253	0.207	0.240	0.218	0.322	0.195	0.253	0.207	0.322	0.103
Exp. homozygosity	0.220	0.220	0.145	0.156	0.100	0.289	0.213	0.176	0.185	0.310	0.179	0.200	0.153	0.304	0.128
Exact test (p)	0.732	0.715	0.914	0.207	0.467	0.558	0.721	0.038	0.914	0.399	0.382	0.161	0.144	0.246	0.506
G-square test (p)	0.636	0.641	0.910	0.296	0.355	0.371	0.578	0.025	0.954	0.595	0.405	0.233	0.214	0.407	0.400

TABLE 7—Statistical results of G-square test, exact test, observed and expected homozygosity for 13 tetranucleotide repeat loci and two pentanucleotide repeat loci in Pallars.

Parameters	D3S1358	TH01	D21S11	D18S51	Penta E	D5S818	D13S317	D7S820	D16S539	CSFIPO	Penta D	vWa	D8S1179	TPOX	FGA
Obs. homozygosity	0.152	0.212	0.121	0.099	0.061	0.303	0.242	0.152	0.212	0.394	0.152	0.182	0.182	0.182	0.212
Exp. homozygosity	0.255	0.207	0.169	0.126	0.104	0.260	0.159	0.176	0.258	0.401	0.224	0.131	0.152	0.233	0.115
Exact test (p)	0.974	0.360	0.916	0.113	0.647	0.677	0.708	0.539	0.401	0.910	0.860	0.099	0.333	0.339	0.219
G-square test (p)	0.926	0.432	0.807	0.110	0.590	0.634	0.845	0.444	0.222	0.823	0.805	0.119	0.367	0.193	0.383

TABLE 8—Statistical results of G-square test, exact test, observed and expected homozygosity for 13 tetranucleotide repeat loci and two pentanucleotide repeat loci in Paraiyars.

Parameters	D3S1358	TH01	D21S11	D18S51	Penta E	D5S818	D13S317	D7S820	D16S539	CSFIPO	Penta D	vWa	D8S1179	TPOX	FGA
Obs. homozygosity	0.381	0.286	0.191	0.048	0.143	0.238	0.143	0.048	0.143	0.381	0.143	0.191	0.143	0.429	0.095
Exp. homozygosity	0.325	0.211	0.117	0.138	0.074	0.324	0.155	0.185	0.151	0.303	0.160	0.166	0.130	0.270	0.127
Exact test (p)	0.512	0.007	0.561	0.814	0.501	0.725	0.261	0.536	0.172	0.127	0.500	0.942	0.851	0.112	0.469
G-square test (p)	0.664	0.008	0.682	0.611	0.540	0.641	0.166	0.352	0.147	0.267	0.427	0.943	0.874	0.148	0.418