

D1S80 POPULATION DATA IN NORTH-EAST OF SPAIN

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System and locus: D1S80

Population and sample: Catalonia (N.E. of Spain). N=183.

Methods:

Primers and PCR conditions: D1S80 Forensic DNA Amplification Reagent Set (Perkin Elmer) in a Linus DualCycler thermocycler.

Electrophoretic method: vertical electrophoresis on 0.75 mm thick native polyacrylamide gels (GeneAmp Detection Gel, Perkin Elmer) and silver staining [1]. The electrophoresis ran for one hour at a constant voltage of 500 V. To size the PCR products, a 27-allelic ladder supplied by the manufacturer was used. ISFH recommendations were followed [2,3].

To estimate Hardy-Weimberg equilibrium, the chi square test was made pooling alleles into five groups.

Table 1. Observed genotypes

Gen.	Obs.	Gen.	Obs.	Gen.	Obs.	Gen.	Obs.	Gen.	Obs.
16 -31	1	18 -29	2	21 -29	2	24 -27	4	26 -31	1
17 -24	1	18 -31	1	21 -31	1	24 -28	8	27 -28	1
18 -18	9	18 -32	2	22 -23	1	24 -29	2	27 -31	1
18 -19	4	18 -40	1	22 -24	12	24 -30	1	28 -31	2
18 -20	2	19 -24	1	22 -25	1	24 -31	10	28 -37	1
18 -21	3	20 -20	1	22 -26	1	24 -32	1	29 -29	1
18 -22	6	20 -24	2	22 -31	1	25 -25	2	29 -31	3
18 -23	2	20 -25	1	23 -24	1	25 -30	1	29 -35	1
18 -24	28	20 -34	2	24 -24	18	25 -31	1	29 -37	1
18 -25	6	20 -36	1	24 -25	7	26 -28	1	30 -31	1
18 -26	1	21 -24	6	24 -26	2	26 -29	1	31 -31	1
18 -28	7								

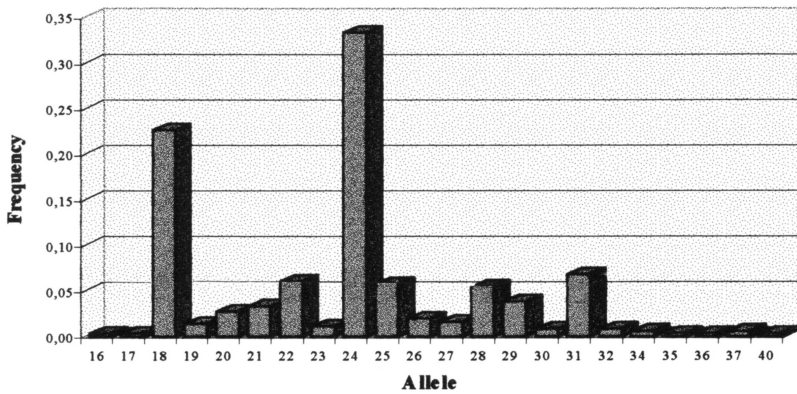


Figure 1. Distribution of D1S80 alleles in north-east of Spain

Table 2. Allele frequencies.

Allele	Frequency	Allele	Frequency	Allele	Frequency
16	0.00273	24	0.33333	31	0.06831
17	0.00273	25	0.05738	32	0.00820
18	0.22678	26	0.01913	34	0.00546
19	0.01366	27	0.01639	35	0.00273
20	0.02732	28	0.05464	36	0.00273
21	0.03279	29	0.03825	37	0.00546
22	0.06011	30	0.00820	40	0.00273
23	0.01093				

Table 3. Evaluation

Pooled alleles					
Group	I	II	III	IV	V
Alleles	14-18	19-23	24	25-28	29-40
$\text{Chi}^2=15.57; \text{d.f.}=10; \text{P}=0.11$					
Observed heterozygosity			0.825		
Allelic diversity ($h \pm \text{s.e.}$) [4]			0.821 \pm 0.028		
Power of exclusion (PE) [5]			0.664		
Power of discrimination (PD) [6]			0.949		

Comments:

The D1S80 genotype frequencies do not deviate from Hardy-Weimberg expectations, and show a bimodal distribution with two main peaks at the 18 and 24 alleles, as in others Caucasian populations.

In our study twenty-two different alleles and fifty-six different genotypes were identified, showing that the D1S80 locus is highly polymorphic and therefore the D1S80 locus provides a useful system for forensic applications and paternity testing.

References:

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4. Nei M, Roychoudhury AK (1974) Sampling variances of heterozygosity and genetic distance. *Genetics* 76:379-390
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