Allelic Frequency Distribution of Three STR Loci (D12S1090, D3S1744, D18S849) in Argentina

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INTRODUCTION

DNA typing by means of STRs is a very useful tool in forensic casework and paternity testing. When a match between two forensic samples exits, the analyst must be able to determine the probability that a man, randomly chosen from the population where the crime has occurred, has the same genetic pattern as the analyzed evidence. In a similar way, in cases of disputed paternity, the analyst must be able to report how much more probability a man that shares alleles with a child has of being the biological father of that child than a randomly chosen man from the population the alleged father belongs to. Knowing the allelic frequency distribution of each analyzed locus is necessary to give weight to both, a match between forensic samples and non-exclusion paternity cases. Since the frequency distribution differs among different populations for each locus, it is important for the laboratory to have its own databases with allelic frequencies for the local population of different loci. We report her the frequency distribution of three STR loci in the Buenos Aires population.

MATERIALS AND METHODS

283 unrelated individuals from the metropolitan area of the city of Buenos Aires were studied. DNA was extracted from whole blood by non-organic procedure. DNA amplification was performed using a Gene Amp 9600 PCR System (Perkin Elmer) for D12S1090, D3S1744 and D18S849 loci. Amplification products were separated by electrophoresis in 4% acrylamide gels in a 0.5X TBE buffer and the detection was accomplished through silver staining. Alleles were determined by direct comparison with an allelic ladder. Frequency distribution and & of heterozygosis of each locus were calculated.

Results:

Loci/ allele D3S1744s	14 0.00353	15 0.08657	16 0.09011	17 0.14841	18 0.31625	19 0.16961
D18S849	9 0.00177	10 0.00000	11 0.00000	12 0.00000	13 0.00530	14 0.05830
D12S1090	8 0.00177	9 0.06007	10 0.01060	11 0.05300	12 0.07244	13 0.02473
D12S1090	21 0.06537	22 0.10601	23 0.05124	24 0.06184	25 0.06537	26 0.08481

Loci/ allele D3S1744s	20 0.13251	21 0.04770	22 0.00530				
D18S849	15 0.21555	16 0.36749	17 0.22438	18 0.10071	19 0.02650	20 0.00000	
D12S1090	14 0.02473	15 0.00883	16 0.00883	17 0.01060	18 0.01767	19 0.06890	20 0.09894
D12S1090	27 0.06360	28 0.01413	29 0.01943	30 0.00530	31 0.00177	32 0.00000	

% of heterozygosis:	D3S17744	D18S849	D12S10909
	85%	75%	95%