

Population Genetics of STRs D12S391, HUMFIBRA/FGA and HUMACTBP2 (SE33) in Maputo (Mocambique)

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INTRODUCTION

Variable Number of Tandem Repeat loci (VNTRs) amplified by PCR represent a rich source of polymorphisms and Short Tandem Repeats (STRs) are the markers of choice in paternity testing and forensic investigations, specially in cases of partly degraded or limited quantity available of DNA. The PCR amplification of STR loci allows genotyping in a short period of time, the detection of alleles classified into discrete classes and the identification of DNA from degraded or tiny amounts of sample.

The interpretation of the results from the analysis of genetic markers requires the existence of databases for the appropriate populations. In this communication we present allele frequencies of unrelated individual samples from Maputo (Mocambique) for D12S391, HUMFIBRA/FGA and HUMACTBP2 (SE33) markers.

MATERIALS AND METHODS

Blood stains were obtained from unrelated individuals from Maputo (Mocambique). DNA was extracted using the Chelex procedure. Primer sequences (Oswel DNA Service):

D12S391: Larcu MV *et al.* (1996) *Int. J. Leg. Med.* **109**: 134-138.
 HUMFIBRA/FGA: Gill P *et al.* (1997). *Forensic Sci. Int.* **86**: 25-33.
 HUMACTBP2 (SE33): Wiegand *et al.* (1995). *Int. J. Leg. Med.* **105**: 315-320.

PCR cycling conditions (individual reaction) were:

D12S391 and HUMFIBRA/FGA: 35 cycles of 95°C-1', 57°C-1', 72°C-2'.
 HUMACTBP2 (SE33): 30 cycles of 94°C-45", 60°C-30", 72°C-30".

Detection employed polyacrylamide denaturing gel electrophoresis on an ABI 377 DNA Sequencer with Genescan Software.

Results:

D12S391 (n=103)		HUMFIBRA/FGA (n=99)		HUMACTBP2 (n=98)	
Allele	Frequency	Allele	Frequency	Allele	Frequency
15	0.1456	16.2	0.0101	11	0.0051
16	0.0777	18	0.0051	12	0.0102
17	0.1262	18.2	0.0051	13	0.0051
18	0.2913	19	0.0808	14	0.0255
19	0.1311	19.2	0.0152	14-2	0.0204
20	0.0971	20	0.0606	15	0.0357
21	0.0437	21	0.0808	16	0.0612
22	0.0194	22	0.1212	16-2	0.0051

Abstracts

23	0.0437	23	0.1869	17	0.0918
24	0.0146	24	0.1970	17-2	0.0051
25	0.0049	25	0.1212	18	0.1122
26	0.0049	26	0.0758	19	0.1225
		27	0.0354	19-2	0.0051
		28	0.0051	20	0.1020
				21	0.0918
				22	0.0306
				24	0.0102
				25	0.0204
				26	0.0357
				27	0.0969
				28	0.0663
				29	0.0510
				32	0.0051

	D12S391	HUMFIBRA/FGA	HUMACTBP2
Exact test (H.W.)	P=0.9726±0.0014	P=0.4794±0.0083	P=0.8812±0.0074
Chance of exclusion Dis-	C.E.=0.3910	C.E.=0.7452	C.E.=0.8532
crimination power	D.P.= 0.9520	D.P.=0.9640	D.P.=0.9813
Heterozygosity	h=0.8835±0.0316	h=0.8889±0.0316	h=0.9082±0.0292