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Announcement of population data

Allele frequencies for 15 short tandem repeat loci in a representative sample of Bosnians and Herzegovinians

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Abstract

Allele frequencies for the 15 STR loci (D3S1358, TH01, D21S11, D18S51, Penta E, D5S818, D13S317, D7S820, D16S539, CSF1PO, Penta D, vWA, D8S1179, TPOX, FGA) included in the PowerPlex 16 kit were obtained from a multiethnic sample of 100 unrelated individuals born in Bosnia and Herzegovina.

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Keywords: Short tandem repeats; Representative sample; B&H population data; PowerPlex 16 kit

Population: Unrelated healthy individuals born in the Bosnia and Herzegovina, from three main ethnical groups (Bosniacs: 44%; Serbs: 31%; Croats: 17%) and others (8%).

Extraction: Qiagen extraction from buccal swabs and blood spots.

PCR: Approximately 2 ng targeted DNA following manufacturer's protocol (PowerPlex 16 kit, Promega Corp., Madison, WI).

Results: Explained in Table 1.

Analysis of data: Deviation from Hardy–Weinberg equilibrium, observed and expected heterozygosity [1] were calculated within Powermarker [2], power of discrimination and power of exclusion within Microsoft[®] Excel workbook

template—PowerStats [3], exact test of population differentiation within Arlequin version 2000 [4].

Access to the data: <http://www.ingeb.ba/edut/str/strbase.html>.

Other remarks: We have compared B&H data with data obtained from geographically closer (neighboring) European populations, as well with PP16 examined Caucasian populations (data kindly provided by Rita Weispfening—Promega company). Bonferroni's correction was used before each comparative analysis. In comparison of B&H and southern Croatian data [5] no significant difference was found at any individual locus. The same statistical parameters were obtained in comparison with pooled Slovenian data¹ [6–9]. Significant differences ($P < 0.05$ with Bonferroni's correction) were found at FGA locus in comparative analysis of B&H and pooled Austrian data¹ [10–22] as well

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¹ Pooled data for each loci are available on <http://www.uni-duesseldorf.de/WWW/Medfek/Serology>.

TABLE 1—Allele frequency distribution and gene diversity for the PowerPlex[®] Y System STR loci in B&H population sample.

Locus	Allele	Num	%	Locus	Allele	Num	%	Locus	Allele	Num
DYS437	13			DYS438	8			DYS389I	10	
	14	44	44		9	7	7		11	
	15	48	48		10	72	72		12	8
	16	7	7		11	18	18		13	79
	17	1	1		12	3	3		14	13
DYS439	8			DYS393	8			DYS391	6	
	9				9				8	
	10	8	8		10				9	
	11	20	20		11				10	54
	12	38	38		12	11	11		11	45
	13	27	27		13	82	82		12	1
	14	7	7		14	7	7		13	
DYS390	18			DYS19	10			DYS389II	24	
	19				11				25	
	20				12				26	
	21				13	15	15		27	
	22	3	3		14	17	17		28	5
	23	9	9		15	27	27		29	21
	24	61	61		16	37	37		30	27
	25	25	25		17	3	3		31	40
	26	2	2		18	1	1		32	6
	27				19				33	1
	DYS385 (a and b)	7				DYS392	7			
8				8						
9				9						
10		2	1	10						
11		20	10	11	90		90			
12		2	1	12	3		3			
13		12	6	13	5		5			
14		65	32.5	14	2		2			
15		49	24.5	15						
16		25	12.5	16						
17		7	3.5	17						
18		15	7.5	18						
19		3	1.5							
20										
21										
22										
23										
24										
25										

TABLE 2—PowerPlex[®] Y haplotypes that have detected more than once in B&H population sample and observed haplotype diversity.

PowerPlex [®] Y Haplotypes	Number
10-13-12-30-10-14-13-11-13-24-16;18	5
10-13-11-29-11-14-16-11-13-25-11;14	3
11-13-13-30-10-15-16-11-13-24-14;15	3
11-13-13-31-10-15-16-11-13-24-14;15	3
11-13-14-31-10-15-15-11-13-24-14;15	3
10-12-12-29-10-16-15-11-13-22-14;14	2
10-14-11-31-10-14-13-11-13-24-16;18	2
11-13-11-29-11-14-15-11-13-25-11;14	2
11-13-12-31-10-15-16-11-13-24-13;15	2
11-13-12-31-10-15-16-11-13-24-14;15	2
11-13-13-31-10-15-14-11-13-24-14;15	2
11-13-14-31-10-15-16-11-13-24-14;15	2
Haplotype diversity (h)	0.9941 ± 0.0027

TABLE 3—Major allele frequency and gene diversity for the PowerPlex[®] Y loci in examined sample of B&H population.

Locus	Major Allele Frequency	Gene Dive
DYS391	0.5400	0.5058
DYS389I	0.7900	0.3528
DYS439	0.3800	0.7310
DYS389II	0.4000	0.7168
DYS438	0.7200	0.4430
DYS437	0.4800	0.5710
DYS19	0.3700	0.7378
DYS392	0.9000	0.1860
DYS393	0.8200	0.3100
DYS390	0.6100	0.5560
DYS385	0.3300	0.8490
		Average 0.

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