FOR THE RECORD

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Genetic Data of Eight Y-Chromosome STRs in Males from Santa Catarina, Brazil

POPULATION: 113 unrelated, autochthonous healthy males from Santa Catarina, Brazil

KEYWORDS: forensic science, DNA typing, Y-chromosome, population genetics, short tandem repeats, haplotype, DYS460 (GATA-A7.1), DYS461 (GATA-A7.2), GATA-A10, GATA-C4, GATA-H4, DYS437, DYS438, DYS439, Santa Catarina, Brazil

Extraction—DNA was extracted from blood stains using the Chelex® method (1). PCR: The co-amplification of DYS460 (GATA-A7.1), DYS461 (GATA-A7.2), GATA-A10, GATA-C4, GATA-H4, DYS437, DYS438, DYS439, Y-chromosome STRs was performed using an octoplex reaction, obtained by the modification of the protocol established for GEP-ISFG collaborative study on two Y-STRs tetraplexes (2). About 5–50 ng of genomic DNA was used in a 25 μL reaction volume containing 2 mM MgCl$_2$, 200 μM of dNTPs, 1 × ImmoBuffer (Bioline) and 0.5 U of Immolase™ DNA polymerase (Bioline). Primers concentrations and cycling

conditions were the same as described in (2) and carried out using a thermocycler GeneAmp® PCR System 9700 (Applied Biosystems).

Typing—The amplified products were detected and separated by capillary electrophoresis using an ABI PRISM® 310 Genetic Analyzer (Applied Biosystems). Fragment sizes were determined automatically using the Genescan® Analysis Software v.3.7 and by comparison with allelic ladders. Allele nomenclature was proposed by (3).

Results and analysis—Allele frequencies for the eight Y-chromosome STRs were estimated by the direct counting method (Table 1); haplotype (Table 2) and gene diversities (Table 1) were calculated according to Nei (4) using the Arlequin software package (5).

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TABLE 1—*Allele frequencies and gene diversity value at the eight Y-chromosome STRs in the Santa Catarina population (n + 113).*

Allele	DYS461 (GATA-A7.2)	DYS437	DYS438	GATA-C4	DYS460 (GATA-A7.1)	GATA-A10	DYS439	GATA-H4
9	...	...	0.0796	...	0.0708	...	0.0088	...
10	0.0354	...	0.3540	...	0.3717	...	0.0531	...
11	0.3009	...	0.0708	...	0.5487	...	0.2920	...
12	0.5398	0.0088	0.4690	...	0.0088	...	0.5221	...
13	0.1239	...	0.0088	...	...	0.0973	0.1150	...
14	...	0.3717	0.0088	...	...	0.2301	...	...
15	...	0.4602	0.0088	...	...	0.6106	0.0088	...
16	...	0.1416	...	...	...	0.0619	...	...
17	...	0.0177	...	...	...	...	...	...
20	...	...	...	0.0796	...	...	...	...
21	...	...	...	0.2035	...	...	...	...
22	...	...	...	0.0973	...	...	...	...
23	...	...	...	0.5664	...	...	...	...
24	...	...	...	0.0442	...	...	...	...
25	...	...	...	...	...	...	...	0.0088
26	...	...	...	0.0088	...	...	...	0.0796
27	...	...	...	...	...	...	...	0.3097
28	...	...	...	...	...	...	...	0.5487
29	...	...	..	...	...	...	...	0.0531
h[a]	0.6068	0.6353	0.6489	0.6255	0.5607	0.5659	0.6315	0.5991

h[a]: gene diversity value.

TABLE 2—*Distribution of the Y-chromosome STRs haplotypes in the Santa Catarina population (*n = *113).*

Ha	DYS461 (GATA-A7.2)	DYS437	DYS438	GATA-C4	DYS460 (GATA-A7.1)	GATA-A10	DYS439	GATA-H4	n[b]
1	10	14	10	21	10	13	11	26	2
2	10	15	12	23	11	16	11	28	1
3	10	16	10	21	11	15	13	28	1
4	11	14	9	21	10	15	12	27	1
5	11	14	10	21	10	14	12	26	1
6	11	14	10	23	9	15	12	28	1
7	11	14	10	21	10	15	11	27	1
8	11	14	10	23	10	15	11	27	1
9	11	14	10	23	10	15	11	28	1
10	11	14	10	21	11	13	12	28	1
11	11	14	10	23	11	15	12	28	1
12	11	14	10	22	11	14	11	27	1
13	11	14	10	23	11	15	11	28	1
14	11	14	11	22	10	15	11	27	2
15	11	14	11	23	11	15	11	27	1
16	11	14	11	23	10	15	10	28	1
17	11	14	11	23	11	13	13	27	1
18	11	14	12	23	10	15	12	28	1
19	11	14	14	20	10	14	11	28	1
20	11	15	9	22	9	14	11	28	1
21	11	15	9	22	11	15	12	27	1
22	11	15	10	22	10	13	12	27	1
23	11	15	12	23	9	15	12	27	1
24	11	15	12	24	10	14	12	28	1
25	11	15	12	23	11	14	15	27	1
26	11	15	12	23	11	15	13	27	1
27	11	15	12	23	11	15	12	28	1
28	11	15	12	24	11	15	12	29	1
29	11	15	12	23	11	14	12	28	1
30	11	15	12	23	11	15	11	28	1
31	11	16	10	23	10	13	11	27	1
32	11	16	10	20	10	14	11	28	1
33	11	16	10	20	10	14	11	29	1
34	11	16	10	23	11	13	11	26	1
35	11	16	12	23	11	15	12	28	1
36	11	17	10	21	11	13	11	28	1
37	12	12	15	23	11	16	12	27	1
38	12	14	9	23	10	15	12	27	1
39	12	14	9	22	10	16	12	29	1
40	12	14	9	21	10	16	12	29	1
41	12	14	10	21	11	14	11	26	1
42	12	14	10	22	11	13	10	28	1
43	12	14	10	20	11	15	11	28	1
44	12	14	10	21	9	15	12	28	1
45	12	14	10	21	9	16	12	28	1
46	12	14	10	23	11	15	11	28	1
47	12	14	10	22	11	15	12	28	1
48	12	14	11	23	11	16	10	29	1
49	12	14	11	23	9	15	9	28	1
50	12	14	12	23	11	15	12	28	1
51	12	14	12	23	11	15	12	27	1
52	12	14	12	23	10	15	12	27	1
53	12	15	10	23	10	15	13	28	1
54	12	15	10	24	10	14	12	28	1
55	12	15	12	23	11	15	12	28	13
56	12	15	12	23	12	15	12	28	1
57	12	15	12	24	10	15	10	27	1
58	12	15	12	23	11	15	13	28	2
59	12	15	12	23	11	15	12	26	1
60	12	15	12	23	10	14	12	27	1
61	12	15	12	23	10	15	13	28	1
62	12	15	12	23	11	16	12	28	1
63	12	15	12	23	11	15	12	27	1
64	12	15	12	23	10	14	12	29	1
65	12	15	12	23	11	15	10	28	1
66	12	15	12	20	11	15	12	28	2
67	12	15	12	23	11	14	12	28	2
68	12	15	12	23	10	15	12	27	1
69	12	15	12	23	11	14	11	28	1
70	13	15	12	23	11	15	12	28	1
71	12	15	12	23	10	15	12	28	1

TABLE 2—*Continued.*

Ha	DYS461 (GATA-A7.2)	DYS437	DYS438	GATA-C4	DYS460 (GATA-A7.1)	GATA-A10	DYS439	GATA-H4	n[b]
72	12	15	12	23	11	15	13	27	1
73	12	15	13	23	10	15	11	28	1
74	12	16	10	23	10	15	12	28	1
75	12	16	10	20	10	13	11	27	1
76	12	16	10	20	10	14	11	27	1
77	12	16	10	21	10	15	13	27	1
78	12	16	10	21	10	14	11	27	1
79	12	16	10	21	10	15	11	28	1
80	12	16	10	21	10	15	11	27	1
81	12	16	12	23	11	15	13	28	2
82	12	16	12	26	11	15	13	27	1
83	13	15	12	23	11	15	12	25	1
84	13	14	9	22	9	14	12	27	2
85	13	14	9	21	10	14	12	28	1
86	13	17	10	21	10	14	12	27	1
87	13	14	10	21	10	14	11	27	1
88	13	14	10	21	11	13	10	28	1
89	13	14	10	21	10	14	11	26	1
90	13	14	10	21	10	15	11	26	1
91	13	14	11	21	11	15	12	27	1
92	13	15	10	20	11	14	11	27	1
93	13	15	12	24	11	14	13	28	1
94	13	15	12	23	11	15	12	26	1

H[a]: haplotype; n[b]: number of individuals observed for each haplotype.

A total of 94 different haplotypes were observed, 86 of them being unique. The most common haplotype was 12, 15, 12, 23, 11, 15, 12, 28 (DYS461 (GATA-A7.2), DYS437, DYS438, GATA-C4, DYS460 (GATA-A7.1), GATA-A10, DYS439, GATA-H4). The haplotype diversity for all eight Y-chromosome STRs was 0.9866 ± 0.0066. The data generated show that the eight Y-chromosome haplotype (DYS461 (GATA-A7.2), DYS437, DYS438, GATA-C4, DYS460 (GATA-A7.1), GATA-A10, DYS439, GATA-H4) is highly polymorphic and discriminative in Santa Catarina, Brazil population.

The complete dataset is available upon request at biologia@dpinml.mj.pt.

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