

FOR THE RECORD

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DYS19, DYS385, DYS389 (I and II), DYS390, DYS391, DYS392, DYS393 Haplotypes in a Population Sample from Catalonia (North-East Spain)

POPULATION: 224 Caucasians from Catalonia (North-East Spain)

KEYWORDS: forensic science, Y chromosome, STR, Haplotype, DYS19, DYS385, DYS389 (I and II), DYS390, DYS391, DYS392, DYS393, population genetics, Catalonia, Spain

Blood samples ($n = 224$) from healthy unrelated individuals (males) were collected. DNA was extracted by using the phenol-chloroform-isoamyl alcohol method (1). Hot-start PCR triplex (Triplex I: DYS19 and DYS389 I/II; Triplex II: DYS390, DYS391 and DYS393) and singleplex (DYS392) amplifications were accomplished with fluorescein labelled primers by the method published by Gené et al. (2). The primers used were those described by Kayser et al. (3) and de Knijff et al. (4). DYS385 locus was analyzed following the method and primers described by EDNAP group (5). Genotypes were analyzed in denaturing 6% polyacrilamide gel electrophoresis, using a monochrome automated laser fluorescence sequencer. The alleles from all loci reported were typed according to the published nomenclatures and the ISFG guidelines for STR analyses. Our group have received the certify of excellence in the Y-STR Haplotyping Quality Assurance Exercise 2000–2001 (<http://www.ystr.org>).

As shown in Table 1, complete eight Y-chromosomal STR haplotypes could be obtained for 224 individuals, among which 167 different haplotypes were observed, being the haplotype number 48

the more frequent (18 individuals). The discrimination capacity was 74.55%. The gene diversity was 99.05%.

The complete data are available by accessing to <http://www.ub.es/spublica/database.html>.

References

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TABLE 1—Haplotypes of the *DYS19*, *DYS385*, *DYS389 I*, and *II*, *DYS390*, *DYS391*, *DYS392*, and *DYS393* in population from Catalonia (North-East Spain).

| | <i>n</i> | | Haplotypes | | | | | | |
|----|----------|----|------------|----|----|----|----|----|----|
| 1 | 1 | 13 | 11-14 | 13 | 29 | 24 | 10 | 13 | 13 |
| 2 | 2 | 13 | 11-14 | 13 | 29 | 24 | 11 | 13 | 13 |
| 3 | 1 | 13 | 11-14 | 13 | 29 | 25 | 9 | 14 | 13 |
| 4 | 1 | 13 | 11-14 | 14 | 30 | 25 | 11 | 13 | 13 |
| 5 | 1 | 13 | 11-16 | 14 | 30 | 25 | 10 | 13 | 13 |
| 6 | 2 | 13 | 12-14 | 13 | 29 | 24 | 11 | 13 | 13 |
| 7 | 1 | 13 | 13-14 | 13 | 29 | 24 | 9 | 11 | 13 |
| 8 | 1 | 13 | 13-14 | 14 | 30 | 23 | 9 | 12 | 13 |
| 9 | 2 | 13 | 13-14 | 14 | 30 | 24 | 9 | 11 | 13 |
| 10 | 1 | 13 | 13-14 | 14 | 30 | 25 | 9 | 11 | 13 |
| 11 | 1 | 13 | 13-14 | 15 | 32 | 25 | 9 | 11 | 13 |
| 12 | 1 | 13 | 13-15 | 14 | 30 | 24 | 9 | 11 | 13 |
| 13 | 1 | 13 | 15-15 | 13 | 31 | 24 | 10 | 11 | 13 |
| 14 | 1 | 13 | 16-16 | 13 | 30 | 23 | 10 | 11 | 13 |
| 15 | 1 | 13 | 16-16 | 13 | 31 | 24 | 10 | 11 | 13 |
| 16 | 1 | 13 | 16-16 | 13 | 33 | 26 | 10 | 11 | 13 |
| 17 | 1 | 13 | 16-17 | 13 | 31 | 24 | 10 | 11 | 13 |
| 18 | 1 | 13 | 16-18 | 13 | 30 | 24 | 11 | 11 | 13 |
| 19 | 1 | 13 | 16-18 | 13 | 32 | 23 | 10 | 11 | 13 |
| 20 | 1 | 13 | 16-18 | 14 | 31 | 25 | 10 | 11 | 13 |
| 21 | 1 | 13 | 17-17 | 13 | 31 | 24 | 10 | 11 | 13 |
| 22 | 1 | 13 | 17-18 | 12 | 30 | 25 | 10 | 11 | 13 |
| 23 | 1 | 13 | 17-20 | 12 | 29 | 24 | 10 | 14 | 13 |
| 24 | 1 | 13 | 18-19 | 13 | 30 | 22 | 10 | 13 | 13 |
| 25 | 1 | 14 | 9-14 | 13 | 29 | 26 | 11 | 13 | 13 |
| 26 | 1 | 14 | 10-13 | 14 | 30 | 23 | 11 | 13 | 13 |
| 27 | 1 | 14 | 10-14 | 13 | 29 | 21 | 11 | 13 | 13 |
| 28 | 1 | 14 | 10-14 | 13 | 29 | 24 | 10 | 13 | 13 |
| 29 | 1 | 14 | 11-11 | 13 | 28 | 24 | 11 | 13 | 13 |
| 30 | 2 | 14 | 11-11 | 13 | 29 | 24 | 11 | 13 | 13 |
| 31 | 1 | 14 | 11-11 | 14 | 29 | 23 | 10 | 13 | 13 |
| 32 | 2 | 14 | 11-11 | 14 | 30 | 23 | 10 | 13 | 13 |
| 33 | 1 | 14 | 11-13 | 15 | 31 | 24 | 10 | 13 | 13 |
| 34 | 1 | 14 | 11-14 | 12 | 28 | 24 | 11 | 13 | 13 |
| 35 | 1 | 14 | 11-14 | 12 | 28 | 25 | 11 | 13 | 13 |
| 36 | 1 | 14 | 11-14 | 12 | 29 | 24 | 10 | 13 | 13 |
| 37 | 1 | 14 | 11-14 | 13 | 27 | 23 | 11 | 13 | 13 |
| 38 | 1 | 14 | 11-14 | 13 | 27 | 24 | 11 | 13 | 13 |
| 39 | 2 | 14 | 11-14 | 13 | 29 | 23 | 10 | 13 | 13 |
| 40 | 3 | 14 | 11-14 | 13 | 29 | 23 | 11 | 13 | 13 |
| 41 | 1 | 14 | 11-14 | 13 | 29 | 23 | 11 | 14 | 13 |
| 42 | 7 | 14 | 11-14 | 13 | 29 | 24 | 10 | 13 | 13 |
| 43 | 1 | 14 | 11-14 | 13 | 29 | 24 | 10 | 13 | 14 |
| 44 | 1 | 14 | 11-14 | 13 | 29 | 24 | 10 | 14 | 13 |
| 45 | 1 | 14 | 11-14 | 13 | 29 | 24 | 11 | 12 | 13 |
| 46 | 1 | 14 | 11-14 | 13 | 29 | 24 | 11 | 13 | 10 |
| 47 | 1 | 14 | 11-14 | 13 | 29 | 24 | 11 | 13 | 12 |
| 48 | 18 | 14 | 11-14 | 13 | 29 | 24 | 11 | 13 | 13 |
| 49 | 1 | 14 | 11-14 | 13 | 29 | 24 | 11 | 14 | 13 |
| 50 | 1 | 14 | 11-14 | 13 | 29 | 24 | 12 | 13 | 13 |
| 51 | 1 | 14 | 11-14 | 13 | 29 | 25 | 11 | 13 | 13 |
| 52 | 4 | 14 | 11-14 | 13 | 30 | 24 | 11 | 13 | 13 |
| 53 | 1 | 14 | 11-14 | 13 | 30 | 24 | 11 | 14 | 13 |
| 54 | 1 | 14 | 11-14 | 14 | 29 | 23 | 10 | 13 | 13 |
| 55 | 2 | 14 | 11-14 | 14 | 29 | 24 | 11 | 13 | 13 |
| 56 | 1 | 14 | 11-14 | 14 | 30 | 23 | 10 | 13 | 13 |
| 57 | 2 | 14 | 11-14 | 14 | 30 | 24 | 10 | 13 | 13 |
| 58 | 8 | 14 | 11-14 | 14 | 30 | 24 | 11 | 13 | 13 |
| 59 | 1 | 14 | 11-14 | 14 | 31 | 23 | 10 | 13 | 13 |
| 60 | 1 | 14 | 11-14 | 14 | 31 | 23 | 10 | 13 | 14 |
| 61 | 1 | 14 | 11-14 | 14 | 31 | 24 | 10 | 13 | 13 |
| 62 | 1 | 14 | 11-14 | 14 | 31 | 24 | 11 | 11 | 13 |
| 63 | 2 | 14 | 11-14 | 14 | 31 | 24 | 11 | 13 | 13 |
| 64 | 1 | 14 | 11-14 | 14 | 32 | 24 | 10 | 13 | 13 |
| 65 | 1 | 14 | 11-14 | 14 | 32 | 24 | 11 | 13 | 13 |
| 66 | 1 | 14 | 11-15 | 12 | 28 | 24 | 10 | 13 | 13 |
| 67 | 1 | 14 | 11-15 | 13 | 28 | 24 | 11 | 13 | 13 |
| 68 | 1 | 14 | 11-15 | 13 | 28 | 25 | 11 | 13 | 13 |

TABLE 1—(Continued).

| | <i>n</i> | | Haplotypes | | | | | | |
|-----|----------|----|------------|----|----|----|----|----|----|
| 69 | 1 | 14 | 11-15 | 13 | 29 | 23 | 11 | 13 | 13 |
| 70 | 2 | 14 | 11-15 | 13 | 29 | 24 | 10 | 13 | 13 |
| 71 | 4 | 14 | 11-15 | 13 | 29 | 24 | 11 | 13 | 13 |
| 72 | 1 | 14 | 11-15 | 13 | 29 | 24 | 11 | 13 | 14 |
| 73 | 1 | 14 | 11-15 | 13 | 29 | 24 | 12 | 13 | 13 |
| 74 | 1 | 14 | 11-15 | 13 | 29 | 24 | 13 | 13 | 13 |
| 75 | 1 | 14 | 11-15 | 13 | 30 | 23 | 11 | 13 | 13 |
| 76 | 1 | 14 | 11-15 | 13 | 30 | 24 | 10 | 11 | 12 |
| 77 | 1 | 14 | 11-15 | 14 | 30 | 23 | 11 | 13 | 13 |
| 78 | 3 | 14 | 11-15 | 14 | 30 | 24 | 11 | 13 | 13 |
| 79 | 1 | 14 | 11-15 | 14 | 31 | 24 | 10 | 13 | 14 |
| 80 | 1 | 14 | 11-15 | 14 | 32 | 24 | 10 | 13 | 14 |
| 81 | 1 | 14 | 12-13 | 13 | 29 | 24 | 11 | 13 | 13 |
| 82 | 1 | 14 | 12-14 | 12 | 28 | 23 | 11 | 14 | 13 |
| 83 | 2 | 14 | 12-14 | 13 | 29 | 24 | 11 | 13 | 13 |
| 84 | 1 | 14 | 12-14 | 13 | 29 | 24 | 11 | 14 | 13 |
| 85 | 2 | 14 | 12-14 | 13 | 30 | 23 | 11 | 13 | 13 |
| 86 | 1 | 14 | 12-14 | 14 | 30 | 23 | 11 | 13 | 13 |
| 87 | 1 | 14 | 12-14 | 14 | 30 | 24 | 10 | 13 | 13 |
| 88 | 1 | 14 | 12-14 | 14 | 30 | 25 | 11 | 13 | 13 |
| 89 | 1 | 14 | 12-15 | 12 | 29 | 24 | 11 | 13 | 13 |
| 90 | 1 | 14 | 12-15 | 13 | 29 | 24 | 10 | 13 | 13 |
| 91 | 1 | 14 | 12-15 | 14 | 30 | 24 | 11 | 14 | 13 |
| 92 | 1 | 14 | 12-18 | 13 | 31 | 24 | 10 | 11 | 12 |
| 93 | 1 | 14 | 13-14 | 13 | 29 | 24 | 11 | 13 | 13 |
| 94 | 1 | 14 | 13-15 | 12 | 28 | 24 | 10 | 11 | 13 |
| 95 | 1 | 14 | 13-16 | 13 | 29 | 23 | 10 | 11 | 12 |
| 96 | 1 | 14 | 13-17 | 12 | 29 | 24 | 10 | 11 | 13 |
| 97 | 1 | 14 | 13-17 | 13 | 29 | 23 | 10 | 11 | 12 |
| 98 | 1 | 14 | 13-18 | 12 | 28 | 23 | 10 | 11 | 12 |
| 99 | 1 | 14 | 13-18 | 13 | 30 | 24 | 10 | 11 | 12 |
| 100 | 1 | 14 | 13-18 | 13 | 31 | 23 | 10 | 11 | 12 |
| 101 | 1 | 14 | 13-18 | 14 | 31 | 23 | 11 | 11 | 12 |
| 102 | 1 | 14 | 14-14 | 12 | 28 | 22 | 10 | 11 | 13 |
| 103 | 1 | 14 | 14-15 | 12 | 28 | 22 | 10 | 11 | 13 |
| 104 | 1 | 14 | 14-15 | 12 | 28 | 23 | 10 | 11 | 13 |
| 105 | 1 | 14 | 14-15 | 12 | 28 | 24 | 11 | 13 | 13 |
| 106 | 2 | 14 | 14-16 | 13 | 29 | 23 | 10 | 11 | 12 |
| 107 | 1 | 14 | 14-16 | 13 | 31 | 24 | 10 | 12 | 14 |
| 108 | 1 | 14 | 14-16 | 14 | 31 | 23 | 10 | 13 | 13 |
| 109 | 1 | 14 | 14-18 | 13 | 32 | 23 | 10 | 13 | 12 |
| 110 | 1 | 14 | 15-15 | 13 | 28 | 24 | 11 | 13 | 13 |
| 111 | 1 | 14 | 15-16 | 12 | 30 | 22 | 10 | 14 | 14 |
| 112 | 1 | 14 | 16-18 | 13 | 30 | 24 | 10 | 11 | 13 |
| 113 | 1 | 14 | 17-18 | 14 | 30 | 23 | 10 | 14 | 13 |
| 114 | 1 | 14 | 17-19 | 13 | 30 | 24 | 10 | 11 | 13 |
| 115 | 1 | 15 | 9-16 | 13 | 29 | 22 | 10 | 14 | 12 |
| 116 | 1 | 15 | 10-12 | 13 | 29 | 22 | 11 | 11 | 13 |
| 117 | 1 | 15 | 10-14 | 13 | 29 | 25 | 11 | 13 | 13 |
| 118 | 1 | 15 | 11-11 | 13 | 29 | 23 | 11 | 13 | 13 |
| 119 | 1 | 15 | 11-12 | 13 | 29 | 24 | 11 | 13 | 12 |
| 120 | 1 | 15 | 11-13 | 13 | 28 | 25 | 11 | 13 | 13 |
| 121 | 1 | 15 | 11-14 | 13 | 29 | 24 | 11 | 13 | 13 |
| 122 | 2 | 15 | 11-14 | 13 | 30 | 24 | 11 | 13 | 13 |
| 123 | 1 | 15 | 11-14 | 13 | 31 | 25 | 11 | 11 | 13 |
| 124 | 1 | 15 | 11-14 | 14 | 30 | 24 | 11 | 13 | 13 |
| 125 | 1 | 15 | 11-14 | 14 | 30 | 25 | 11 | 13 | 13 |
| 126 | 1 | 15 | 11-15 | 13 | 28 | 24 | 11 | 13 | 13 |
| 127 | 1 | 15 | 11-15 | 13 | 29 | 23 | 11 | 13 | 13 |
| 128 | 1 | 15 | 11-15 | 14 | 30 | 24 | 10 | 13 | 13 |
| 129 | 1 | 15 | 11-15 | 14 | 31 | 24 | 11 | 13 | 13 |
| 130 | 1 | 15 | 12-12 | 13 | 28 | 23 | 10 | 11 | 13 |
| 131 | 1 | 15 | 12-13 | 13 | 29 | 24 | 11 | 13 | 13 |
| 132 | 1 | 15 | 12-14 | 13 | 29 | 22 | 10 | 11 | 12 |
| 133 | 1 | 15 | 12-15 | 12 | 29 | 22 | 10 | 11 | 12 |
| 134 | 2 | 15 | 13-14 | 12 | 28 | 22 | 10 | 11 | 13 |
| 135 | 1 | 15 | 13-15 | 12 | 30 | 23 | 10 | 11 | 14 |
| 136 | 1 | 15 | 13-16 | 13 | 29 | 23 | 10 | 11 | 12 |

(continues)

TABLE 1—(Continued).

| <i>n</i> | | Haplotypes | | | | | | | |
|----------|---|------------|-------|----|----|----|----|----|----|
| 137 | 1 | 15 | 13-16 | 14 | 30 | 23 | 9 | 11 | 12 |
| 138 | 1 | 15 | 13-17 | 13 | 32 | 23 | 10 | 12 | 14 |
| 139 | 1 | 15 | 14-14 | 13 | 29 | 22 | 10 | 11 | 15 |
| 140 | 1 | 15 | 14-15 | 12 | 29 | 22 | 10 | 11 | 14 |
| 141 | 1 | 15 | 14-16 | 12 | 29 | 23 | 10 | 14 | 13 |
| 142 | 1 | 15 | 14-16 | 13 | 30 | 23 | 10 | 13 | 13 |
| 143 | 1 | 15 | 14-16 | 13 | 30 | 23 | 10 | 15 | 13 |
| 144 | 1 | 15 | 14-17 | 13 | 29 | 23 | 10 | 13 | 13 |
| 145 | 1 | 15 | 15-16 | 13 | 30 | 23 | 11 | 13 | 13 |
| 146 | 1 | 15 | 15-17 | 12 | 30 | 22 | 9 | 12 | 13 |
| 147 | 1 | 15 | 15-17 | 13 | 29 | 22 | 10 | 12 | 14 |
| 148 | 1 | 15 | 15-17 | 14 | 30 | 22 | 10 | 12 | 12 |
| 149 | 1 | 15 | 15-17 | 14 | 30 | 23 | 10 | 11 | 12 |
| 150 | 1 | 15 | 16-17 | 13 | 30 | 22 | 10 | 12 | 14 |
| 151 | 1 | 16 | 11-14 | 13 | 29 | 24 | 10 | 13 | 13 |
| 152 | 1 | 16 | 11-14 | 14 | 31 | 25 | 10 | 11 | 13 |
| 153 | 1 | 16 | 12-12 | 13 | 28 | 23 | 10 | 11 | 13 |
| 154 | 1 | 16 | 12-12 | 14 | 29 | 22 | 11 | 11 | 13 |
| 155 | 1 | 16 | 12-12 | 15 | 30 | 23 | 9 | 11 | 13 |
| 156 | 1 | 16 | 13-16 | 13 | 29 | 24 | 11 | 11 | 13 |
| 157 | 1 | 16 | 13-17 | 12 | 28 | 26 | 10 | 11 | 13 |
| 158 | 2 | 16 | 14-14 | 12 | 29 | 22 | 10 | 11 | 14 |
| 159 | 1 | 16 | 15-16 | 14 | 31 | 23 | 10 | 13 | 13 |
| 160 | 1 | 17 | 11-12 | 13 | 28 | 23 | 10 | 11 | 13 |
| 161 | 1 | 17 | 12-12 | 13 | 28 | 23 | 10 | 11 | 13 |
| 162 | 1 | 17 | 12-12 | 13 | 28 | 23 | 11 | 11 | 13 |
| 163 | 1 | 17 | 12-12 | 14 | 29 | 25 | 9 | 11 | 12 |
| 164 | 1 | 17 | 12-12 | 14 | 30 | 23 | 10 | 11 | 13 |
| 165 | 2 | 17 | 12-13 | 14 | 29 | 24 | 9 | 11 | 13 |
| 166 | 1 | 17 | 12-14 | 14 | 31 | 25 | 10 | 12 | 14 |
| 167 | 1 | 17 | 15-17 | 13 | 29 | 23 | 10 | 13 | 14 |