Characteristics of Y-STR Loci in Commercial Kits

Markers in bold font are the 11 recommended by SWGDAM and present in all kits. DYS391 is present in PowerPlex Fusion and GlobalFiler to aid sex-typing. The Y-chromosome positions were determined using the February 2009 human reference sequence and BLAT (http://genome.ucsc.edu/cgi-bin/hgBlat). *Allele range listed is for PowerPlex Y23 allelic ladders. †Range of Yfiler Plus bins.

| 4.27 DYS456 AGAT 11 to 23 Yfiler, PPY23, Yfiler Plus 6.74 AMEL Y +AAAGTG Fusion, GlobalFiler, etc. 6.86 DYS570 TTTC 10 to 25 PPY23, Yfiler Plus 7.05 DYS576 AAAG 11 to 23 PPY23, Yfiler Plus 7.87 DYS458 GAAA 10 to 24 Yfiler, PPY23, Yfiler Plus 8.22 DYS449 TTTC 22 to 42† Yfiler Plus 8.43 DYS481 CTT 17 to 32 PPY23, Yfiler Plus 8.65 DYS627 AAAG 10 to 28† Yfiler, PPY23, Yfiler Plus 9.52 DYS19 TAGA 9 to 19 PPY, Yfiler, PPY23, Yfiler P 14.38 DYS391 TCTA 5 to 16 PPY, Yfiler, PPY23, Yfiler P 14.47 DYS437 TCTR 11 to 18 PPY, Yfiler, PPY23, Yfiler P 14.51 DYS439 AGAT 6 to 17 PPY, Yfiler, PPY23, Yfiler P 14.61 DYS389 I/II TCTR 9 to 17/ 24 to 35 PPY, Yfiler, PPY23, Yfiler P 15.51 < | ChrY Position (Mb) | Y-STR Marker | Repeat Motif | Allele Range* | Present in Y-STR Kit |
|---|-----------------------|-----------------|-----------------|-----------------------|---------------------------------|
| 6.74 | 3.13 | DYS393 | AGAT | 7 to 18 | PPY, Yfiler, PPY23, Yfiler Plus |
| 6.86 DYS570 TTTC 10 to 25 PPY23, Yfiler Plus 7.05 DYS576 AAAG 11 to 23 PPY23, Yfiler Plus 7.87 DYS458 GAAA 10 to 24 Yfiler, PPY23, Yfiler Plus 8.22 DYS449 TTTC 22 to 42 [†] Yfiler Plus 8.43 DYS481 CTT 17 to 32 PPY23, Yfiler Plus 8.65 DYS627 AAAG 10 to 28 [†] Yfiler Plus 9.52 DYS19 TAGA 9 to 19 PPY, Yfiler, PPY23, Yfiler P 14.10 DYS391 TCTA 5 to 16 PPY, Yfiler, PPY23, Yfiler P 14.38 DYS635 TSTA 15 to 28 Yfiler, PPY23, Yfiler Plus 14.47 DYS437 TCTR 11 to 18 PPY, Yfiler, PPY23, Yfiler P 14.51 DYS439 AGAT 6 to 17 PPY, Yfiler, PPY23, Yfiler P 14.94 DYS389 I/II TCTR 9 to 17/24 to 35 PPY, Yfiler, PPY23, Yfiler P 15.51 M175 [TTCTC-] "1" or "2" GlobalFiler Y-InDel (Y±) 17.2 | 4.27 | DYS456 | AGAT | 11 to 23 | Yfiler, PPY23, Yfiler Plus |
| 7.05 DYS576 AAAG 11 to 23 PPY23, Yfiler Plus 7.87 DYS458 GAAA 10 to 24 Yfiler, PPY23, Yfiler Plus 8.22 DYS449 TTTC 22 to 42 [†] Yfiler Plus 8.43 DYS481 CTT 17 to 32 PPY23, Yfiler Plus 8.65 DYS627 AAAG 10 to 28 [†] Yfiler Plus 9.52 DYS19 TAGA 9 to 19 PPY, Yfiler, PPY23, Yfiler Plus 14.10 DYS391 TCTA 5 to 16 PPY, Yfiler, PPY23, Yfiler Plus 14.38 DYS635 TSTA 15 to 28 Yfiler, PPY23, Yfiler Plus 14.47 DYS437 TCTR 11 to 18 PPY, Yfiler, PPY23, Yfiler Plus 14.51 DYS439 AGAT 6 to 17 PPY, Yfiler, PPY23, Yfiler Plus 14.61 DYS389 I/II TCTR 9 to 17 / 24 to 35 PPY, Yfiler, PPY23, Yfiler Plus 14.94 DYS438 TTTC 6 to 16 PPY, Yfiler, PPY23, Yfiler Plus 15.51 M175 [TTCTC/-] "1" or "2" GlobalFiler Y-InDel (Y±) 17.27 DYS390 TCTR 17 to 29 PPY, Yfiler, PPY23, Yfiler Plus 17.32 DYS518 AAAG 31 to 49 [†] Yfiler Plus 17.43 DYS643 CTTTT 6 to 17 PPY23, Yfiler Plus 17.43 DYS643 CTTTT 6 to 17 PPY23, Yfiler Plus 18.39 DYS533 ATCT 7 to 17 PPY23, Yfiler Plus 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler Plus 20.80, 20.84 DYS385 a/b GAAA 7 to 28 PPY, Yfiler, PPY23, Yfiler P | 6.74 | AMEL Y | +AAAGTG | | Fusion, GlobalFiler, etc. |
| 7.87 DYS458 GAAA 10 to 24 Yfiler, PPY23, Yfiler Plus 8.22 DYS449 TTTC 22 to 42 [†] Yfiler Plus 8.43 DYS481 CTT 17 to 32 PPY23, Yfiler Plus 8.65 DYS627 AAAG 10 to 28 [†] Yfiler Plus 9.52 DYS19 TAGA 9 to 19 PPY, Yfiler, PPY23, Yfiler P 14.10 DYS391 TCTA 5 to 16 PPY, Yfiler, PPY23, Yfiler P 14.38 DYS635 TSTA 15 to 28 Yfiler, PPY23, Yfiler Plus 14.47 DYS437 TCTR 11 to 18 PPY, Yfiler, PPY23, Yfiler P 14.51 DYS439 AGAT 6 to 17 PPY, Yfiler, PPY23, Yfiler P 14.61 DYS389 I/II TCTR 9 to 17 / 24 to 35 PPY, Yfiler, PPY23, Yfiler P 14.94 DYS438 TTTC 6 to 16 PPY, Yfiler, PPY23, Yfiler P 15.51 M175 [TTCTC/-] "1" or "2" GlobalFiler Y-InDel (Y±) 17.27 DYS390 TCTR 17 to 29 PPY, Yfiler, PPY23, Yfiler P | 6.86 | DYS570 | TTTC | 10 to 25 | PPY23, Yfiler Plus |
| 8.22 DYS449 TTTC 22 to 42 [†] Yfiler Plus 8.43 DYS481 CTT 17 to 32 PPY23, Yfiler Plus 8.65 DYS627 AAAG 10 to 28 [†] Yfiler Plus 9.52 DYS19 TAGA 9 to 19 PPY, Yfiler, PPY23, Yfiler P 14.10 DYS391 TCTA 5 to 16 PPY, Yfiler, PPY23, Yfiler P 14.38 DYS635 TSTA 15 to 28 Yfiler, PPY23, Yfiler Plus 14.47 DYS437 TCTR 11 to 18 PPY, Yfiler, PPY23, Yfiler P 14.51 DYS439 AGAT 6 to 17 PPY, Yfiler, PPY23, Yfiler P 14.61 DYS389 I/II TCTR 9 to 17 / 24 to 35 PPY, Yfiler, PPY23, Yfiler P 14.94 DYS438 TTTC 6 to 16 PPY, Yfiler, PPY23, Yfiler P 15.51 M175 [TTCTC/-] "1" or "2" GlobalFiler Y-InDel (Y±) 17.27 DYS390 TCTR 17 to 29 PPY, Yfiler, PPY23, Yfiler P 17.43 DYS643 CTTT 6 to 17 PPY23 Yfiler Plus | 7.05 | DYS576 | AAAG | 11 to 23 | PPY23, Yfiler Plus |
| 8.43 DYS481 CTT 17 to 32 PPY23, Yfiler Plus 8.65 DYS627 AAAG 10 to 28 [†] Yfiler Plus 9.52 DYS19 TAGA 9 to 19 PPY, Yfiler, PPY23, Yfiler P 14.10 DYS391 TCTA 5 to 16 PPY, Yfiler, PPY23, Yfiler P 14.38 DYS635 TSTA 15 to 28 Yfiler, PPY23, Yfiler Plus 14.47 DYS437 TCTR 11 to 18 PPY, Yfiler, PPY23, Yfiler P 14.51 DYS439 AGAT 6 to 17 PPY, Yfiler, PPY23, Yfiler P 14.61 DYS389 I/II TCTR 9 to 17/24 to 35 PPY, Yfiler, PPY23, Yfiler P 14.94 DYS438 TTTC 6 to 16 PPY, Yfiler, PPY23, Yfiler P 15.51 M175 [TTCTC/-] "1" or "2" GlobalFiler Y-InDel (Y±) 17.27 DYS390 TCTR 17 to 29 PPY, Yfiler, PPY23, Yfiler P 17.43 DYS518 AAAG 31 to 49 [†] Yfiler Plus 17.43 DYS643 CTTTT 6 to 17 PPY23, Yfiler Plus | 7.87 | DYS458 | GAAA | 10 to 24 | Yfiler, PPY23, Yfiler Plus |
| 8.65 DYS627 AAAG 10 to 28 [†] Yfiler Plus 9.52 DYS19 TAGA 9 to 19 PPY, Yfiler, PPY23, Yfiler P 14.10 DYS391 TCTA 5 to 16 PPY, Yfiler, PPY23, Yfiler P 14.38 DYS635 TSTA 15 to 28 Yfiler, PPY23, Yfiler Plus 14.47 DYS437 TCTR 11 to 18 PPY, Yfiler, PPY23, Yfiler P 14.51 DYS439 AGAT 6 to 17 PPY, Yfiler, PPY23, Yfiler P 14.61 DYS389 I/II TCTR 9 to 17 / 24 to 35 PPY, Yfiler, PPY23, Yfiler P 14.94 DYS438 TTTC 6 to 16 PPY, Yfiler, PPY23, Yfiler P 15.51 M175 [TTCTC/-] "1" or "2" GlobalFiler Y-InDel (Y±) 17.27 DYS390 TCTR 17 to 29 PPY, Yfiler, PPY23, Yfiler P 17.43 DYS518 AAAG 31 to 49 [†] Yfiler Plus 17.43 DYS643 CTTTT 6 to 17 PPY23, Yfiler Plus 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler Plus <td>8.22</td> <td>DYS449</td> <td>TTTC</td> <td>22 to 42[†]</td> <td>Yfiler Plus</td> | 8.22 | DYS449 | TTTC | 22 to 42 [†] | Yfiler Plus |
| 9.52 DYS19 TAGA 9 to 19 PPY, Yfiler, PPY23, Yfiler P 14.10 DYS391 TCTA 5 to 16 PPY, Yfiler, PPY23, Yfiler P 14.38 DYS635 TSTA 15 to 28 Yfiler, PPY23, Yfiler Plus 14.47 DYS437 TCTR 11 to 18 PPY, Yfiler, PPY23, Yfiler P 14.51 DYS439 AGAT 6 to 17 PPY, Yfiler, PPY23, Yfiler P 14.61 DYS389 I/II TCTR 9 to 17 / 24 to 35 PPY, Yfiler, PPY23, Yfiler P 14.94 DYS438 TTTC 6 to 16 PPY, Yfiler, PPY23, Yfiler P 15.51 M175 [TTCTC/-] "1" or "2" GlobalFiler Y-InDel (Y±) 17.27 DYS390 TCTR 17 to 29 PPY, Yfiler, PPY23, Yfiler P 17.32 DYS518 AAAG 31 to 49 [†] Yfiler Plus 17.43 DYS643 CTTTT 6 to 17 PPY23, Yfiler Plus 18.39 DYS533 ATCT 7 to 17 PPY23, Yfiler Plus 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler P </td <td>8.43</td> <td>DYS481</td> <td>CTT</td> <td>17 to 32</td> <td>PPY23, Yfiler Plus</td> | 8.43 | DYS481 | CTT | 17 to 32 | PPY23, Yfiler Plus |
| 14.10 DYS391 TCTA 5 to 16 PPY, Yfiler, PPY23, Yfiler P 14.38 DYS635 TSTA 15 to 28 Yfiler, PPY23, Yfiler Plus 14.47 DYS437 TCTR 11 to 18 PPY, Yfiler, PPY23, Yfiler P 14.51 DYS439 AGAT 6 to 17 PPY, Yfiler, PPY23, Yfiler P 14.61 DYS389 I/II TCTR 9 to 17 / 24 to 35 PPY, Yfiler, PPY23, Yfiler P 14.94 DYS438 TTTC 6 to 16 PPY, Yfiler, PPY23, Yfiler P 15.51 M175 [TTCTC/-] "1" or "2" GlobalFiler Y-InDel (Y±) 17.27 DYS390 TCTR 17 to 29 PPY, Yfiler, PPY23, Yfiler P 17.32 DYS518 AAAG 31 to 49 [†] Yfiler Plus 17.43 DYS643 CTTTT 6 to 17 PPY23 18.39 DYS533 ATCT 7 to 17 PPY23, Yfiler Plus 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler Plus 20.80, 20.84 DYS385 a/b GAAA 7 to 28 PPY, Yfiler, PPY23, Yfiler P | 8.65 | DYS627 | AAAG | 10 to 28 [†] | Yfiler Plus |
| 14.38 DYS635 TSTA 15 to 28 Yfiler, PPY23, Yfiler Plus 14.47 DYS437 TCTR 11 to 18 PPY, Yfiler, PPY23, Yfiler P 14.51 DYS439 AGAT 6 to 17 PPY, Yfiler, PPY23, Yfiler P 14.61 DYS389 I/II TCTR 9 to 17 / 24 to 35 PPY, Yfiler, PPY23, Yfiler P 14.94 DYS438 TTTTC 6 to 16 PPY, Yfiler, PPY23, Yfiler P 15.51 M175 [TTCTC/-] "1" or "2" GlobalFiler Y-InDel (Y±) 17.27 DYS390 TCTR 17 to 29 PPY, Yfiler, PPY23, Yfiler P 17.32 DYS518 AAAG 31 to 49 [†] Yfiler Plus 17.43 DYS643 CTTTT 6 to 17 PPY23 18.39 DYS533 ATCT 7 to 17 PPY23, Yfiler Plus 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler Plus 20.80, 20.84 DYS385 a/b GAAA 7 to 28 PPY, Yfiler, PPY23, Yfiler P | 9.52 | DYS19 | TAGA | 9 to 19 | PPY, Yfiler, PPY23, Yfiler Plus |
| 14.47 DYS437 TCTR 11 to 18 PPY, Yfiler, PPY23, Yfiler P 14.51 DYS439 AGAT 6 to 17 PPY, Yfiler, PPY23, Yfiler P 14.61 DYS389 I/II TCTR 9 to 17 / 24 to 35 PPY, Yfiler, PPY23, Yfiler P 14.94 DYS438 TTTTC 6 to 16 PPY, Yfiler, PPY23, Yfiler P 15.51 M175 [TTCTC/-] "1" or "2" GlobalFiler Y-InDel (Y±) 17.27 DYS390 TCTR 17 to 29 PPY, Yfiler, PPY23, Yfiler P 17.32 DYS518 AAAG 31 to 49 [†] Yfiler Plus 17.43 DYS643 CTTTT 6 to 17 PPY23 18.39 DYS533 ATCT 7 to 17 PPY23, Yfiler Plus 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler Plus 20.80, 20.84 DYS385 a/b GAAA 7 to 28 PPY, Yfiler, PPY23, Yfiler P | 14.10 | DYS391 | TCTA | 5 to 16 | PPY, Yfiler, PPY23, Yfiler Plus |
| 14.51 DYS439 AGAT 6 to 17 PPY, Yfiler, PPY23, Yfiler P 14.61 DYS389 I/II TCTR 9 to 17 / 24 to 35 PPY, Yfiler, PPY23, Yfiler P 14.94 DYS438 TTTTC 6 to 16 PPY, Yfiler, PPY23, Yfiler P 15.51 M175 [TTCTC/-] "1" or "2" GlobalFiler Y-InDel (Y±) 17.27 DYS390 TCTR 17 to 29 PPY, Yfiler, PPY23, Yfiler P 17.32 DYS518 AAAG 31 to 49 [†] Yfiler Plus 17.43 DYS643 CTTTT 6 to 17 PPY23 18.39 DYS533 ATCT 7 to 17 PPY23, Yfiler Plus 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler Plus 20.80, 20.84 DYS385 a/b GAAA 7 to 28 PPY, Yfiler, PPY23, Yfiler Plus | 14.38 | DYS635 | TSTA | 15 to 28 | Yfiler, PPY23, Yfiler Plus |
| 14.61 DYS389 I/II TCTR 9 to 17 / 24 to 35 PPY, Yfiler, PPY23, Yfiler P 14.94 DYS438 TTTC 6 to 16 PPY, Yfiler, PPY23, Yfiler P 15.51 M175 [TTCTC/-] "1" or "2" GlobalFiler Y-InDel (Y±) 17.27 DYS390 TCTR 17 to 29 PPY, Yfiler, PPY23, Yfiler P 17.32 DYS518 AAAG 31 to 49 [†] Yfiler Plus 17.43 DYS643 CTTTT 6 to 17 PPY23 18.39 DYS533 ATCT 7 to 17 PPY23, Yfiler Plus 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler Plus 20.80, 20.84 DYS385 a/b GAAA 7 to 28 PPY, Yfiler, PPY23, Yfiler P | 14.47 | DYS437 | TCTR | 11 to 18 | PPY, Yfiler, PPY23, Yfiler Plus |
| 14.61 DYS389 I/II TCTR 24 to 35 PPY, Yfiler, PPY23, Yfiler P 14.94 DYS438 TTTC 6 to 16 PPY, Yfiler, PPY23, Yfiler P 15.51 M175 [TTCTC/-] "1" or "2" GlobalFiler Y-InDel (Y±) 17.27 DYS390 TCTR 17 to 29 PPY, Yfiler, PPY23, Yfiler P 17.32 DYS518 AAAG 31 to 49 [†] Yfiler Plus 17.43 DYS643 CTTTT 6 to 17 PPY23 18.39 DYS533 ATCT 7 to 17 PPY23, Yfiler Plus 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler Plus 20.80, 20.84 DYS385 a/b GAAA 7 to 28 PPY, Yfiler, PPY23, Yfiler P | 14.51 | DYS439 | AGAT | 6 to 17 | PPY, Yfiler, PPY23, Yfiler Plus |
| 15.51 M175 [TTCTC/-] "1" or "2" GlobalFiler Y-InDel (Y±) 17.27 DYS390 TCTR 17 to 29 PPY, Yfiler, PPY23, Yfiler P 17.32 DYS518 AAAG 31 to 49 [†] Yfiler Plus 17.43 DYS643 CTTTT 6 to 17 PPY23 18.39 DYS533 ATCT 7 to 17 PPY23, Yfiler Plus 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler Plus 20.80, 20.84 DYS385 a/b GAAA 7 to 28 PPY, Yfiler, PPY23, Yfiler P | 14.61 | DYS389 I/II | TCTR | | PPY, Yfiler, PPY23, Yfiler Plus |
| 17.27 DYS390 TCTR 17 to 29 PPY, Yfiler, PPY23, Yfiler P 17.32 DYS518 AAAG 31 to 49 [†] Yfiler Plus 17.43 DYS643 CTTTT 6 to 17 PPY23 18.39 DYS533 ATCT 7 to 17 PPY23, Yfiler Plus 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler Plus 20.80, 20.84 DYS385 a/b GAAA 7 to 28 PPY, Yfiler, PPY23, Yfiler P | 14.94 | DYS438 | TTTTC | 6 to 16 | PPY, Yfiler, PPY23, Yfiler Plus |
| 17.32 DYS518 AAAG 31 to 49 [†] Yfiler Plus 17.43 DYS643 CTTTT 6 to 17 PPY23 18.39 DYS533 ATCT 7 to 17 PPY23, Yfiler Plus 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler Plus 20.80, 20.84 DYS385 a/b GAAA 7 to 28 PPY, Yfiler, PPY23, Yfiler P | 15.51 | M175 | [TTCTC/-] | "1" or "2" | GlobalFiler Y-InDel (Y±) |
| 17.43 DYS643 CTTTT 6 to 17 PPY23 18.39 DYS533 ATCT 7 to 17 PPY23, Yfiler Plus 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler Plus 20.80, 20.84 DYS385 a/b GAAA 7 to 28 PPY, Yfiler, PPY23, Yfiler P | 17.27 | DYS390 | TCTR | 17 to 29 | PPY, Yfiler, PPY23, Yfiler Plus |
| 18.39 DYS533 ATCT 7 to 17 PPY23, Yfiler Plus 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler Plus 20.80, 20.84 DYS385 a/b GAAA 7 to 28 PPY, Yfiler, PPY23, Yfiler P | 17.32 | DYS518 | AAAG | 31 to 49 [†] | Yfiler Plus |
| 18.74 GATA-H4 TAGA 8 to 18 Yfiler, PPY23, Yfiler Plus 20.80, 20.84 DYS385 a/b GAAA 7 to 28 PPY, Yfiler, PPY23, Yfiler P | 17.43 | DYS643 | CTTTT | 6 to 17 | PPY23 |
| 20.80, 20.84 DYS385 a/b GAAA 7 to 28 PPY, Yfiler, PPY23, Yfiler P | 18.39 | DYS533 | ATCT | 7 to 17 | PPY23, Yfiler Plus |
| | 18.74 | GATA-H4 | TAGA | 8 to 18 | Yfiler, PPY23, Yfiler Plus |
| 21.05 DYS460 ATAG 6 to 15 [†] Yfiler Plus | 20.80, 20.84 | DYS385 a/b | GAAA | 7 to 28 | PPY, Yfiler, PPY23, Yfiler Plus |
| | 21.05 | DYS460 | ATAG | 6 to 15 [†] | Yfiler Plus |
| 21.52 DYS549 GATA 7 to 17 PPY23 | 21.52 | DYS549 | GATA | 7 to 17 | PPY23 |
| 22.63 DYS392 TAT 4 to 20 PPY, Yfiler, PPY23, Yfiler P | 22.63 | DYS392 | TAT | 4 to 20 | PPY, Yfiler, PPY23, Yfiler Plus |
| 24.36 DYS448 AGAGAT 14 to 24 Yfiler, PPY23, Yfiler Plus | 24.36 | DYS448 | AGAGAT | 14 to 24 | Yfiler, PPY23, Yfiler Plus |
| 25.93, 28.03? DYF387S1 a/b RAAG 29 to 45 [†] Yfiler Plus | 25.93, 28.03? | DYF387S1 a/b | RAAG | 29 to 45 [†] | Yfiler Plus |