**Collaborative Testing Services, Inc**
# FORENSIC TESTING PROGRAM

# DNA Parentage
# Test No. 16-5871 Summary Report

This proficiency test was sent to 45 participants. Each participant received a sample pack consisting of the standard paternity trio, collected from a mother, daughter, and a potential father. Participants were requested to analyze the samples using their existing protocols. Data were returned from 39 participants (87% response rate) and are compiled into the following tables:

# Manufacturer's Information

Each sample set was a collection of known blood samples, provided on FTA Micro cards, from three individuals (Items 1-3), a mother, daughter and a potential father. Participants were requested to analyze these items using their existing protocols. Also included in the data sheet was a kinship exercise that consisted of autosomal DNA profiles of two individuals for comparison. Participants were requested to determine if a sibling relationship claim was supported following the review of these profiles.

SAMPLE PREPARATION: All stains were prepared from human whole blood which was drawn into EDTA tubes. Item 1 (75 $\mu$l) was blood from a female (mother) donor, Item 2 (75 $\mu$l) was from a female (daughter) donor and Item 3 (75 $\mu$l) was created using blood collected from a male donor who was not the biological father of the daughter (Item 2). Each different Item was prepared at separate times and were packaged once they were thoroughly dried. Completed sample sets were stored at -20°C until shipment on May 9, 2016.

SAMPLE SET ASSEMBLY: For each sample set, all three Items (1-3) were placed in a pre-labeled sample pack envelope. The sealed sample pack envelopes were then packaged in pre-labeled Heat Seal envelopes and sealed. This process was repeated until all of the sample sets were prepared.

KINSHIP EXERCISE: This exercise included allelic results representing a sibling relationship.

VERIFICATION: Laboratories that conducted predistribution analysis of the samples reported consistent results and associations.

# Manufacturer's Information, continued

## Amelogenin and STR Results

*Results compiled by predistribution laboratories and a consensus of at least 10 participants.*

| Item | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| | **D8S1179** | **D10S1248** | **D12S391** | **D13S317** | **D16S539** | **D18S51** |
| | **D19S433** | **D21S11** | **D22S1045** | **Amelogenin** | **CSF1PO** | **FGA** |
| | **Penta D** | **Penta E** | **SE33** | **TH01** | **TPOX** | **vWA** |
| 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | 13,13 | 9,9 |
| | 12,13 | 13,14 | 18,20 | 11,13 | 11,12 | 14,18 |
| | 14,14 | 28,29 | 16,16 | X,X | 11,12 | 19,22 |
| | 12,13 | 12,16 | * | 9,9.3 | 11,11 | 15,17 |
| 2 | 12,16 | 22,25 | 10,11 | 14,15 | 12,13 | 9,12 |
| | 10,12 | 14,16 | 18,22 | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | 16,16 | X,X | 11,12 | 22,23 |
| | 12,13 | 7,16 | * | 6,9.3 | 10,11 | 17,17 |
| 3 | 15,16.3 | 21,24 | 10,14 | 14,16 | 12,13 | 10,11 |
| | 10,10 | 13,14 | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | 11,15 | X,Y | 11,12 | 19,23 |
| | 12,13 | 7,9 | * | 7,9 | 8,9 | 16,17 |

## YSTR Results

*Results compiled from predistribution laboratories and a consensus of at least 10 participants.*

| Item | DYS19 | DYS385 | DYS389-I | DYS389-II | DYS390 | DYS391 | DYS392 | DYS393 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | **DYS437** | **DYS438** | **DYS439** | **DYS448** | **DYS456** | **DYS458** | **DYS481** | **DYS533** |
| | **DYS549** | **DYS570** | **DYS576** | **DYS635** | **DYS643** | **Y GATA H4** | **Y Indel** | |
| 3 | 14 | 12,15 | 13 | 30 | 24 | 11 | 13 | 13 |
| | 15 | 12 | 12 | 19 | 18 | 17 | * | * |
| | * | * | * | 23 | * | 11 | * | |

* Results were not received by a minimum of 10 participants for STR and YSTR loci indicated.

## Paternity Indices

*Median Paternity Index results compiled from predistribution laboratories and a consensus of at least 10 participants.*

| Database | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| | **D8S1179** | **D10S1248** | **D12S391** | **D13S317** | **D16S539** | **D18S51** |
| | **D19S433** | **D21S11** | **D22S1045** | **Amelogenin** | **CSF1PO** | **FGA** |
| | **Penta D** | **Penta E** | **SE33** | **TH01** | **TPOX** | **vWA** |
| 3PI- FBI PopStats | ∅ | ∅ | ∅ | * | * | ∅ |
| | * | ∅ | ∅ | * | ∅ | ∅ |
| | ∅ | ∅ | ∅ | ∅ | * | * |
| | ∅ | ∅ | ∅ | ∅ | ∅ | * |
| 3PI- NIST-STRBASE | ∅ | * | * | 4.69 | 1.29 | * |
| | 9.76 | ∅ | ∅ | 1.54 | * | * |
| | * | * | ∅ | * | 1.49 | 3.28 |
| | * | * | ∅ | ∅ | * | 1.76 |

* PI data was not received from a minimum of 10 participants for the loci indicated.
∅ No results were received for the loci indicated with this symbol.

# Summary Comments

The 16-5871 DNA Parentage test was designed to allow participants to assess their proficiency in the analysis and interpretation of a standard trio of blood stains on FTA Micro cards. Item 1 was blood collected from a female donor (mother), Item 2 was blood collected from a female donor (daughter of Item 1) and Item 3 was blood collected from a male donor (potential father of Item 2). Participants were requested to analyze the samples and provide allelic and statistical results and relationship conclusions regarding the potential father. Sample sets also included a kinship exercise provided on the data sheets where participants were requested to evaluate the provided DNA profiles and report the kinship index and relationship conclusions (Refer to the Manufacturer's Information for preparation details).

Paternity DNA Statistics (Table 5):
For the population database used, 30 participants responded. Fourteen used NIST-STRBASE, ten used the FBI POPSTATS database and six participants reported the use of a laboratory specific database.

Of the 39 participants returning results, six reported a CPI value ranging between 2.33E-47 and 746. Other participants stated that the combined paternity index was not calculated for exclusions.

For the Probability of Paternity, 29 participants reported either a value of "0" , or did not report a probability value.  Two participants reported values greater than or equal to 99.87%.

For the Paternity Conclusions (Table 6), all 39 participants reported that the potential father (Item 3) was excluded as the potential biological parent of the daughter (Item 2).

For Kinship DNA Statistics (Table 7), fifteen participants indicated that the claim of kinship was supported between the siblings, one participant reported that the claim was not supported, and the remaining participant reported "N/A".

Only on participant reported an allelic results that differed from the consensus. This participant reported an inconsistent allele at D2S1338 for Item 2.

# Amelogenin & STR Results

## TABLE 1

| WebCode Item | | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|---|
| | | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
| | | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
| | | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |

### Item 1

| WebCode Item | | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|---|
| 28QJR4 | | *PowerPlex® 16 HS, Power Plex ESX 17* | | | | | |
| | 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | 13,13 | 9,9 |
| | | 12,13 | 13,14 | 18,20 | 11,13 | 11,12 | 14,18 |
| | | 14,14 | 28,29 | 16,16 | X,X | 11,12 | 19,22 |
| | | 12,13 | 12,16 | 18,18 | 9,9.3 | 11,11 | 15,17 |
| 29L2T6 | | *PowerPlex® Fusion System* | | | | | |
| | 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | 13,13 | 9,9 |
| | | 12,13 | 13,14 | 18,20 | 11,13 | 11,12 | 14,18 |
| | | 14,14 | 28,29 | 16,16 | X,X | 11,12 | 19,22 |
| | | 12,13 | 12,16 | | 9,9.3 | 11,11 | 15,17 |
| 2QNMTE | | *PowerPlex® 21* | | | | | |
| | 1 | 12,17.3 | 20,25 | | 15,16 | 13,13 | 9,9 |
| | | 12,13 | | 18,20 | 11,13 | 11,12 | 14,18 |
| | | 14,14 | 28,29 | | X,X | 11,12 | 19,22 |
| | | 12,13 | 12,16 | | 9,9.3 | 11,11 | 15,17 |
| 2U64N6 | | *PowerPlex® Fusion Direct* | | | | | |
| | 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | 13 | 9 |
| | | 12,13 | 13,14 | 18,20 | 11,13 | 11,12 | 14,18 |
| | | 14 | 28,29 | 16 | X | 11,12 | 19,22 |
| | | 12,13 | 12,16 | | 9,9.3 | 11 | 15,17 |
| 99Y4F7 | | *PowerPlex® 21* | | | | | |
| | 1 | 12,17.3 | 20,25 | | 15,16 | 13,13 | 9,9 |
| | | 12,13 | | 18,20 | 11,13 | 11,12 | 14,18 |
| | | 14,14 | 28,29 | | X,X | 11,12 | 19,22 |
| | | 12,13 | 12,16 | | 9,9.3 | 11,11 | 15,17 |
| AAPPL2 | | *COfiler® and Profiler Plus®* | | | | | |
| | 1 | | | | 15,16 | 13,13 | 9,9 |
| | | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | | | 28,29 | | X,X | 11,12 | 19,22 |
| | | | | | 9,9.3 | 11,11 | 15,17 |
| C2U7KY | | *PowerPlex® Fusion* | | | | | |
| | 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | 13 | 9 |
| | | 12,13 | 13,14 | 18,20 | 11,13 | 11,12 | 14,18 |
| | | 14 | 28,29 | 16 | X | 11,12 | 19,22 |
| | | 12,13 | 12,16 | | 9,9.3 | 11 | 15,17 |
| C694QZ | | *COfiler® and Profiler Plus®* | | | | | |
| | 1 | | | | 15,16 | 13,13 | 9,9 |
| | | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | | | 28,29 | | X,X | 11,12 | 19,22 |
| | | | | | 9,9.3 | 11,11 | 15,17 |

## TABLE 1

| WebCode Item | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
| | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
| | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |
|---|---|---|---|---|---|---|

### Item 1

**CZDATY** — *Identifiler® Plus, GlobalFiler Express*

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | 13 | 9 |
| | 12,13 | 13,14 | 18,20 | 11,13 | 11,12 | 14,18 |
| | 14 | 28,29 | 16 | X | 11,12 | 19,22 |
| | | | 18 | 9,9.3 | 11 | 15,17 |

**D3YBBR** — *Identifiler® PLUS*

| | | 20,25 | | 15,16 | 13,13 | 9,9 |
|---|---|---|---|---|---|---|
| 1 | | 20,25 | | 15,16 | 13,13 | 9,9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | 14,14 | 28,29 | | X,X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11,11 | 15,17 |

**D4CKNY** — *Identifiler® Plus*

| | | 20,25 | | 15,16 | 13 | 9 |
|---|---|---|---|---|---|---|
| 1 | | 20,25 | | 15,16 | 13 | 9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | 14 | 28,29 | | X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11 | 15,17 |

**ENXYFT** — *AmpFISTR NGM SElect*

| | 12,17.3 | 20,25 | 11,14 | 15,16 | | |
|---|---|---|---|---|---|---|
| 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | | |
| | 12,13 | 13,14 | 18,20 | | 11,12 | 14,18 |
| | 14,14 | 28,29 | 16,16 | X,X | | 19,22 |
| | | | 18,18 | 9,9.3 | | 15,17 |

**FE2J4U** — *PowerPlex® Fusion*

| | 12,17.3 | 20,25 | 11,14 | 15,16 | 13 | 9 |
|---|---|---|---|---|---|---|
| 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | 13 | 9 |
| | 12,13 | 13,14 | 18,20 | 11,13 | 11,12 | 14,18 |
| | 14 | 28,29 | 16 | X | 11,12 | 19,22 |
| | 12,13 | 12,16 | | 9,9.3 | 11 | 15,17 |

**FT4VYT** — *PowerPlex® Fusion*

| | 12,17.3 | 20,25 | 11,14 | 15,16 | 13 | 9 |
|---|---|---|---|---|---|---|
| 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | 13 | 9 |
| | 12,13 | 13,14 | 18,20 | 11,13 | 11,12 | 14,18 |
| | 14 | 28,29 | 16 | X | 11,12 | 19,22 |
| | 12,13 | 12,16 | | 9,9.3 | 11 | 15,17 |

**GH2UYU** — *PowerPlex® Fusion*

| | 12,17.3 | 20,25 | 11,14 | 15,16 | 13 | 9 |
|---|---|---|---|---|---|---|
| 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | 13 | 9 |
| | 12,13 | 13,14 | 18,20 | 11,13 | 11,12 | 14,18 |
| | 14 | 28,29 | 16 | X | 11,12 | 19,22 |
| | 12,13 | 12,16 | | 9,9.3 | 11 | 15,17 |

**GPHPFN** — *Identifiler® Plus*

| | | 20,25 | | 15,16 | 13,13 | 9,9 |
|---|---|---|---|---|---|---|
| 1 | | 20,25 | | 15,16 | 13,13 | 9,9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | 14,14 | 28,29 | | X,X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11,11 | 15,17 |

## TABLE 1

| WebCode Item | D1S1656 D8S1179 D19S433 Penta D | D2S1338 D10S1248 D21S11 Penta E | D2S441 D12S391 D22S1045 SE33 | D3S1358 D13S317 Amelogenin TH01 | D5S818 D16S539 CSF1PO TPOX | D7S820 D18S51 FGA vWA |
|---|---|---|---|---|---|---|

### Item 1

**HD6PJU** — COfiler® and Profiler Plus®

| WebCode Item | D1S1656 / D8S1179 / D19S433 / Penta D | D2S1338 / D10S1248 / D21S11 / Penta E | D2S441 / D12S391 / D22S1045 / SE33 | D3S1358 / D13S317 / Amelogenin / TH01 | D5S818 / D16S539 / CSF1PO / TPOX | D7S820 / D18S51 / FGA / vWA |
|---|---|---|---|---|---|---|
| 1 | | | | 15,16 | 13,13 | 9,9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | | 28,29 | | X,X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11,11 | 15,17 |

**HKNTQX** — Identifiler® Plus

| WebCode Item | D1S1656 / D8S1179 / D19S433 / Penta D | D2S1338 / D10S1248 / D21S11 / Penta E | D2S441 / D12S391 / D22S1045 / SE33 | D3S1358 / D13S317 / Amelogenin / TH01 | D5S818 / D16S539 / CSF1PO / TPOX | D7S820 / D18S51 / FGA / vWA |
|---|---|---|---|---|---|---|
| 1 | | 20,25 | | 15,16 | 13 | 9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | 14 | 28,29 | | X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11 | 15,17 |

**J9PE7Q** — Identifiler® plus

| WebCode Item | D1S1656 / D8S1179 / D19S433 / Penta D | D2S1338 / D10S1248 / D21S11 / Penta E | D2S441 / D12S391 / D22S1045 / SE33 | D3S1358 / D13S317 / Amelogenin / TH01 | D5S818 / D16S539 / CSF1PO / TPOX | D7S820 / D18S51 / FGA / vWA |
|---|---|---|---|---|---|---|
| 1 | | 20,25 | | 15,16 | 13,13 | 9,9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | 14,14 | 28,29 | | X,X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11,11 | 15,17 |

**JGJJYR** — COfiler® and Profiler Plus®

| WebCode Item | D1S1656 / D8S1179 / D19S433 / Penta D | D2S1338 / D10S1248 / D21S11 / Penta E | D2S441 / D12S391 / D22S1045 / SE33 | D3S1358 / D13S317 / Amelogenin / TH01 | D5S818 / D16S539 / CSF1PO / TPOX | D7S820 / D18S51 / FGA / vWA |
|---|---|---|---|---|---|---|
| 1 | | | | 15,16 | 13,13 | 9,9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | | 28,29 | | X,X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11,11 | 15,17 |

**JJQ2XN** — Identifiler® Plus

| WebCode Item | D1S1656 / D8S1179 / D19S433 / Penta D | D2S1338 / D10S1248 / D21S11 / Penta E | D2S441 / D12S391 / D22S1045 / SE33 | D3S1358 / D13S317 / Amelogenin / TH01 | D5S818 / D16S539 / CSF1PO / TPOX | D7S820 / D18S51 / FGA / vWA |
|---|---|---|---|---|---|---|
| 1 | | 20,25 | | 15,16 | 13,13 | 9,9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | 14,14 | 28,29 | | X,X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11,11 | 15,17 |

**JNVXGN** — PowerPlex® Fusion 6 C

| WebCode Item | D1S1656 / D8S1179 / D19S433 / Penta D | D2S1338 / D10S1248 / D21S11 / Penta E | D2S441 / D12S391 / D22S1045 / SE33 | D3S1358 / D13S317 / Amelogenin / TH01 | D5S818 / D16S539 / CSF1PO / TPOX | D7S820 / D18S51 / FGA / vWA |
|---|---|---|---|---|---|---|
| 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | 13 | 9 |
| | 12,13 | 13,14 | 18,20 | 11,13 | 11,12 | 14,18 |
| | 14 | 28,29 | 16 | X | 11,12 | 19,22 |
| | 12,13 | 12,16 | 18 | 9,9.3 | 11 | 15,17 |

**KAULLN** — Identifiler® Direct

| WebCode Item | D1S1656 / D8S1179 / D19S433 / Penta D | D2S1338 / D10S1248 / D21S11 / Penta E | D2S441 / D12S391 / D22S1045 / SE33 | D3S1358 / D13S317 / Amelogenin / TH01 | D5S818 / D16S539 / CSF1PO / TPOX | D7S820 / D18S51 / FGA / vWA |
|---|---|---|---|---|---|---|
| 1 | - | 20,25 | - | 15,16 | 13 | 9 |
| | 12,13 | - | - | 11,13 | 11,12 | 14,18 |
| | 14 | 28,29 | - | X,X | 11,12 | 19,22 |
| | - | - | - | 9,9.3 | 11 | 15,17 |

**KEPDUL** — Identifiler® ID-DIRECT

| WebCode Item | D1S1656 / D8S1179 / D19S433 / Penta D | D2S1338 / D10S1248 / D21S11 / Penta E | D2S441 / D12S391 / D22S1045 / SE33 | D3S1358 / D13S317 / Amelogenin / TH01 | D5S818 / D16S539 / CSF1PO / TPOX | D7S820 / D18S51 / FGA / vWA |
|---|---|---|---|---|---|---|
| 1 | | 20,25 | | 15,16 | 13 | 9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | 14,14 | 28,29 | | X,X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11,11 | 15,17 |

## TABLE 1

| WebCode Item | D1S1656 D8S1179 D19S433 Penta D | D2S1338 D10S1248 D21S11 Penta E | D2S441 D12S391 D22S1045 SE33 | D3S1358 D13S317 Amelogenin TH01 | D5S818 D16S539 CSF1PO TPOX | D7S820 D18S51 FGA vWA |
|---|---|---|---|---|---|---|

### Item 1

**KNZFFL** — *PowerPlex® Fusion, NGM*

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | 13,13 | 9,9 |
| | 12,13 | 13,14 | 18,20 | 11,13 | 11,12 | 14,18 |
| | 14,14 | 28,29 | 16,16 | X,X | 11,12 | 19,22 |
| | 12,13 | 12,16 | | 9,9.3 | 11,11 | 15,17 |

**L6UWHM** — *COfiler® and Profiler Plus®*

| | | | | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| 1 | | | | 15,16 | 13,13 | 9,9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | | 28,29 | | X,X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11,11 | 15,17 |

**MV9TBM** — *Identifiler® Direct*

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| 1 | - | 20,25 | - | 15,16 | 13 | 9 |
| | 12,13 | - | - | 11,13 | 11,12 | 14,18 |
| | 14 | 28,29 | - | X,X | 11,12 | 19,22 |
| | - | - | - | 9,9.3 | 11 | 15,17 |

**N693UH** — *Identifiler® Direct*

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| 1 | - | 20,25 | - | 15,16 | 13 | 9 |
| | 12,13 | - | - | 11,13 | 11,12 | 14,18 |
| | 14 | 28,29 | - | X,X | 11,12 | 19,22 |
| | - | - | - | 9,9.3 | 11 | 15,17 |

**P7V2LK** — *COfiler® and Profiler Plus®*

| | | | | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| 1 | | | | 15,16 | 13,13 | 9,9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | | 28,29 | | X,X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11,11 | 15,17 |

**PKFGPK** — *Identifiler® Plus*

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| 1 | | 20,25 | | 15,16 | 13 | 9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | 14 | 28,29 | | X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11 | 15,17 |

**RGUDUK** — *COfiler® and Profiler Plus®*

| | | | | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| 1 | | | | 15,16 | 13,13 | 9,9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | | 28,29 | | X,X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11,11 | 15,17 |

**TLJBWF** — *Identifiler® Direct*

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| 1 | - | 20,25 | - | 15,16 | 13 | 9 |
| | 12,13 | - | - | 11,13 | 11,12 | 14,18 |
| | 14 | 28,29 | - | X,X | 11,12 | 19,22 |
| | - | - | - | 9,9.3 | 11 | 15,17 |

## TABLE 1

| WebCode Item | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
| | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
| | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |

### Item 1

**TW2UGC** — *Identifiler® plus*

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | | 20,25 | | 15,16 | 13,13 | 9,9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | 14,14 | 28,29 | | X,X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11,11 | 15,17 |

**UEWKAK** — *PowerPlex® PowerPlex 21*

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 12,17.3 | 20,25 | | 15,16 | 13,13 | 9,9 |
| | 12,13 | | 18,20 | 11,13 | 11,12 | 14,18 |
| | 14,14 | 28,29 | | X,X | 11,12 | 19,22 |
| | 12,13 | 12,16 | | 9,9.3 | 11,11 | 15,17 |

**UJBK8C** — *PowerPlex® Fusion System, NGMSElect*

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | 13 | 9 |
| | 12,13 | 13,14 | 18,20 | 11,13 | 11,12 | 14,18 |
| | 14 | 28,29 | 16 | X | 11,12 | 19,22 |
| | 12,13 | 12,16 | 18 | 9,9.3 | 11 | 15,17 |

**VKXJXF** — *Identifiler® Plus*

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | | 20,25 | | 15,16 | 13,13 | 9,9 |
| | 12,13 | | | 11,13 | 11,12 | 14,18 |
| | 14,14 | 28,29 | | X,X | 11,12 | 19,22 |
| | | | | 9,9.3 | 11,11 | 15,17 |

**X2FYEG** — *PowerPlex® 21*

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 12,17.3 | 20,25 | | 15,16 | Not reported | 9,9 |
| | 12,13 | | 18,20 | 11,13 | 11,12 | 14,18 |
| | 14,14 | 28,29 | | X,X | 11,12 | 19,22 |
| | 12,13 | 12,16 | | 9,9.3 | 11,11 | 15,17 |

**X9H9LA** — *PowerPlex® ESI17 Pro, GlobalFiler*

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | 13 | 9 |
| | 12,13 | 13,14 | 18,20 | 11,13 | 11,12 | 14,18 |
| | 14 | 28,29 | 16 | X | 11,12 | 19,22 |
| | | | 18 | 9,9.3 | 11 | 15,17 |

**ZZXNEF**

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 12,17.3 | 20,25 | 11,14 | 15,16 | 13,13 | 9,9 |
| | 12,13 | 13,14 | 18,20 | 11,13 | 11,12 | 14,18 |
| | 14,14 | 28,29 | 16,16 | X,X | 11,12 | 19,22 |
| | | | 18,18 | 9,9.3 | 11,11 | 15,17 |

## TABLE 1

| WebCode Item | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
| | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
| | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |

### Item 2

| WebCode Item | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 28QJR4 | PowerPlex® 16 HS, Power Plex ESX 17 | | | | | |
| 2 | 12,16 | 22,25 | 10,11 | 14,15 | 12,13 | 9,12 |
| | 10,12 | 14,16 | 18,22 | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | 16,16 | X,X | 11,12 | 22,23 |
| | 12,13 | 7,16 | 18,27.2 | 6,9.3 | 10,11 | 17,17 |
| 29L2T6 | PowerPlex® Fusion System | | | | | |
| 2 | 12,16 | 22,25 | 10,11 | 14,15 | 12,13 | 9,12 |
| | 10,12 | 14,16 | 18,22 | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | 16,16 | X,X | 11,12 | 22,23 |
| | 12,13 | 7,16 | | 6,9.3 | 10,11 | 17,17 |
| 2QNMTE | PowerPlex® 21 | | | | | |
| 2 | 12,16 | 22,25 | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | 18,22 | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | | X,X | 11,12 | 22,23 |
| | 12,13 | 7,16 | | 6,9.3 | 10,11 | 17,17 |
| 2U64N6 | PowerPlex® Fusion Direct | | | | | |
| 2 | 12,16 | 22,25 | 10,11 | 14,15 | 12,13 | 9,12 |
| | 10,12 | 14,16 | 18,22 | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | 16 | X | 11,12 | 22,23 |
| | 12,13 | 7,16 | | 6,9.3 | 10,11 | 17 |
| 99Y4F7 | PowerPlex® 21 | | | | | |
| 2 | 12,16 | 22,25 | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | 18,22 | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | | X,X | 11,12 | 22,23 |
| | 12,13 | 7,16 | | 6,9.3 | 10,11 | 17,17 |
| AAPPL2 | COfiler® and Profiler Plus® | | | | | |
| 2 | | | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11,11 | 12,12 | 18,18 |
| | | 29,32.2 | | X,X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17,17 |
| C2U7KY | PowerPlex® Fusion | | | | | |
| 2 | 12,16 | 22,25 | 10,11 | 14,15 | 12,13 | 9,12 |
| | 10,12 | 14,16 | 18,22 | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | 16 | X | 11,12 | 22,23 |
| | 12,13 | 7,16 | | 6,9.3 | 10,11 | 17 |
| C694QZ | COfiler® and Profiler Plus® | | | | | |
| 2 | | | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11,11 | 12,12 | 18,18 |
| | | 29,32.2 | | X,X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17,17 |

## TABLE 1

| WebCode Item | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
| | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
| --- | --- | --- | --- | --- | --- | --- |
| | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |

### Item 2

| CZDATY | Identifiler® Plus, GlobalFiler Express | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| 2 | 12,16 | 22,25 | 10,11 | 14,15 | 12,13 | 9,12 |
| | 10,12 | 14,16 | 18,22 | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | 16 | X | 11,12 | 22,23 |
| | | | 18,27.2 | 6,9.3 | 10,11 | 17 |

| D3YBBR | Identifiler® PLUS | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| 2 | | 22,25 | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | | X,X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17,17 |

| D4CKNY | Identifiler® Plus | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| 2 | | 22,25 | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | | X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17 |

| ENXYFT | AmpFISTR NGM SElect | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| 2 | 12,16 | 22,25 | 10,11 | 14,15 | | |
| | 10,12 | 14,16 | 18,22 | | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | 16,16 | X,X | | 22,23 |
| | | | 18,27.2 | 6,9.3 | | 17,17 |

| FE2J4U | PowerPlex® Fusion | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| 2 | 12,16 | 22,25 | 10,11 | 14,15 | 12,13 | 9,12 |
| | 10,12 | 14,16 | 18,22 | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | 16 | X | 11,12 | 22,23 |
| | 12,13 | 7,16 | | 6,9.3 | 10,11 | 17 |

| FT4VYT | PowerPlex® Fusion | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| 2 | 12,16 | 22,25 | 10,11 | 14,15 | 12,13 | 9,12 |
| | 10,12 | 14,16 | 18,22 | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | 16 | X | 11,12 | 22,23 |
| | 12,13 | 7,16 | | 6,9.3 | 10,11 | 17 |

| GH2UYU | PowerPlex® Fusion | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| 2 | 12,16 | 22,25 | 10,11 | 14,15 | 12,13 | 9,12 |
| | 10,12 | 14,16 | 18,22 | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | 16 | X | 11,12 | 22,23 |
| | 12,13 | 7,16 | | 6,9.3 | 10,11 | 17 |

| GPHPFN | Identifiler® Plus | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| 2 | | 22,25 | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | | X,X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17,17 |

## TABLE 1

| WebCode Item | D1S1656<br>D8S1179<br>D19S433<br>Penta D | D2S1338<br>D10S1248<br>D21S11<br>Penta E | D2S441<br>D12S391<br>D22S1045<br>SE33 | D3S1358<br>D13S317<br>Amelogenin<br>TH01 | D5S818<br>D16S539<br>CSF1PO<br>TPOX | D7S820<br>D18S51<br>FGA<br>vWA |
|---|---|---|---|---|---|---|

### Item 2

| WebCode Item | D1S1656 / D8S1179 / D19S433 / Penta D | D2S1338 / D10S1248 / D21S11 / Penta E | D2S441 / D12S391 / D22S1045 / SE33 | D3S1358 / D13S317 / Amelogenin / TH01 | D5S818 / D16S539 / CSF1PO / TPOX | D7S820 / D18S51 / FGA / vWA |
|---|---|---|---|---|---|---|
| **HD6PJU** *COfiler® and Profiler Plus®* | | | | | | |
| 2 | | | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11,11 | 12,12 | 18,18 |
| | | 29,32.2 | | X,X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17,17 |
| **HKNTQX** *Identifiler® Plus* | | | | | | |
| 2 | | 22,25 | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | | X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17 |
| **J9PE7Q** *Identifiler® plus* | | | | | | |
| 2 | | 22,25 | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | | X,X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17,17 |
| **JGJJYR** *COfiler® and Profiler Plus®* | | | | | | |
| 2 | | | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11,11 | 12,12 | 18,18 |
| | | 29,32.2 | | X,X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17,17 |
| **JJQ2XN** *Identifiler® Plus* | | | | | | |
| 2 | | 22,25 | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | | X,X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17,17 |
| **JNVXGN** *PowerPlex® Fusion 6 C* | | | | | | |
| 2 | 12,16 | 22,25 | 10,11 | 14,15 | 12,13 | 9,12 |
| | 10,12 | 14,16 | 18,22 | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | 16 | X | 11,12 | 22,23 |
| | 12,13 | 7,16 | 18,27.2 | 6,9.3 | 10,11 | 17 |
| **KAULLN** *Identifiler® Direct* | | | | | | |
| 2 | - | 20,25 | - | 14,15 | 12,13 | 9,12 |
| | 10,12 | - | - | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | - | X,X | 11,12 | 22,23 |
| | - | - | - | 6,9.3 | 10,11 | 17 |
| **KEPDUL** *Identifiler® ID-DIRECT* | | | | | | |
| 2 | | 22,25 | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | | X,X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17 |

## TABLE 1

| WebCode Item | D1S1656 / D8S1179 / D19S433 / Penta D | D2S1338 / D10S1248 / D21S11 / Penta E | D2S441 / D12S391 / D22S1045 / SE33 | D3S1358 / D13S317 / Amelogenin / TH01 | D5S818 / D16S539 / CSF1PO / TPOX | D7S820 / D18S51 / FGA / vWA |
|---|---|---|---|---|---|---|

### Item 2

**KNZFFL** — *PowerPlex® Fusion, NGM*

| | D1S1656/D8S1179/D19S433/Penta D | D2S1338/D10S1248/D21S11/Penta E | D2S441/D12S391/D22S1045/SE33 | D3S1358/D13S317/Amelogenin/TH01 | D5S818/D16S539/CSF1PO/TPOX | D7S820/D18S51/FGA/vWA |
|---|---|---|---|---|---|---|
| 2 | 12,16 | 22,25 | 10,11 | 14,15 | 12,13 | 9,12 |
| | 10,12 | 14,16 | 18,22 | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | 16,16 | X,X | 11,12 | 22,23 |
| | 12,13 | 7,16 | | 6,9.3 | 10,11 | 17,17 |

**L6UWHM** — *COfiler® and Profiler Plus®*

| | D1S1656/D8S1179/D19S433/Penta D | D2S1338/D10S1248/D21S11/Penta E | D2S441/D12S391/D22S1045/SE33 | D3S1358/D13S317/Amelogenin/TH01 | D5S818/D16S539/CSF1PO/TPOX | D7S820/D18S51/FGA/vWA |
|---|---|---|---|---|---|---|
| 2 | | | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11,11 | 12,12 | 18,18 |
| | | 29,32.2 | | X,X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17,17 |

**MV9TBM** — *Identifiler® Direct*

| | D1S1656/D8S1179/D19S433/Penta D | D2S1338/D10S1248/D21S11/Penta E | D2S441/D12S391/D22S1045/SE33 | D3S1358/D13S317/Amelogenin/TH01 | D5S818/D16S539/CSF1PO/TPOX | D7S820/D18S51/FGA/vWA |
|---|---|---|---|---|---|---|
| 2 | - | 22,25 | - | 14,15 | 12,13 | 9,12 |
| | 10,12 | - | - | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | - | X,X | 11,12 | 22,23 |
| | - | - | - | 6,9.3 | 10,11 | 17 |

**N693UH** — *Identifiler® Direct*

| | D1S1656/D8S1179/D19S433/Penta D | D2S1338/D10S1248/D21S11/Penta E | D2S441/D12S391/D22S1045/SE33 | D3S1358/D13S317/Amelogenin/TH01 | D5S818/D16S539/CSF1PO/TPOX | D7S820/D18S51/FGA/vWA |
|---|---|---|---|---|---|---|
| 2 | - | 22,25 | - | 14,15 | 12,13 | 9,12 |
| | 10,12 | - | - | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | - | X,X | 11,12 | 22,23 |
| | - | - | - | 6,9.3 | 10,11 | 17 |

**P7V2LK** — *COfiler® and Profiler Plus®*

| | D1S1656/D8S1179/D19S433/Penta D | D2S1338/D10S1248/D21S11/Penta E | D2S441/D12S391/D22S1045/SE33 | D3S1358/D13S317/Amelogenin/TH01 | D5S818/D16S539/CSF1PO/TPOX | D7S820/D18S51/FGA/vWA |
|---|---|---|---|---|---|---|
| 2 | | | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11,11 | 12,12 | 18,18 |
| | | 29,32.2 | | X,X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17,17 |

**PKFGPK** — *Identifiler® Plus*

| | D1S1656/D8S1179/D19S433/Penta D | D2S1338/D10S1248/D21S11/Penta E | D2S441/D12S391/D22S1045/SE33 | D3S1358/D13S317/Amelogenin/TH01 | D5S818/D16S539/CSF1PO/TPOX | D7S820/D18S51/FGA/vWA |
|---|---|---|---|---|---|---|
| 2 | | 22,25 | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | | X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17 |

**RGUDUK** — *COfiler® and Profiler Plus®*

| | D1S1656/D8S1179/D19S433/Penta D | D2S1338/D10S1248/D21S11/Penta E | D2S441/D12S391/D22S1045/SE33 | D3S1358/D13S317/Amelogenin/TH01 | D5S818/D16S539/CSF1PO/TPOX | D7S820/D18S51/FGA/vWA |
|---|---|---|---|---|---|---|
| 2 | | | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11,11 | 12,12 | 18,18 |
| | | 29,32.2 | | X,X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17,17 |

**TLJBWF** — *Identifiler® Direct*

| | D1S1656/D8S1179/D19S433/Penta D | D2S1338/D10S1248/D21S11/Penta E | D2S441/D12S391/D22S1045/SE33 | D3S1358/D13S317/Amelogenin/TH01 | D5S818/D16S539/CSF1PO/TPOX | D7S820/D18S51/FGA/vWA |
|---|---|---|---|---|---|---|
| 2 | - | 22,25 | - | 14,15 | 12,13 | 9,12 |
| | 10,12 | - | - | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | - | X,X | 11,12 | 22,23 |
| | - | - | - | 6,9.3 | 10,11 | 17 |

## TABLE 1

| WebCode Item | D1S1656 D8S1179 D19S433 Penta D | D2S1338 D10S1248 D21S11 Penta E | D2S441 D12S391 D22S1045 SE33 | D3S1358 D13S317 Amelogenin TH01 | D5S818 D16S539 CSF1PO TPOX | D7S820 D18S51 FGA vWA |
|---|---|---|---|---|---|---|

### Item 2

| WebCode Item | D1S1656 / D8S1179 / D19S433 / Penta D | D2S1338 / D10S1248 / D21S11 / Penta E | D2S441 / D12S391 / D22S1045 / SE33 | D3S1358 / D13S317 / Amelogenin / TH01 | D5S818 / D16S539 / CSF1PO / TPOX | D7S820 / D18S51 / FGA / vWA |
|---|---|---|---|---|---|---|
| TW2UGC *Identifiler® plus* 2 | | 22,25 | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | | X,X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17,17 |
| UEWKAK *PowerPlex® PowerPlex 21* 2 | 12,16 | 22,25 | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | 18,22 | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | | X,X | 11,12 | 22,23 |
| | 12,13 | 7,16 | | 6,9.3 | 10,11 | 17,17 |
| UJBK8C *PowerPlex® Fusion System, NGMSElect* 2 | 12,16 | 22,25 | 10,11 | 14,15 | 12,13 | 9,12 |
| | 10,12 | 14,16 | 18,22 | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | 16 | X | 11,12 | 22,23 |
| | 12,13 | 7,16 | 18,27.2 | 6,9.3 | 10,11 | 17 |
| VKXJXF *Identifiler® Plus* 2 | | 22,25 | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | | X,X | 11,12 | 22,23 |
| | | | | 6,9.3 | 10,11 | 17,17 |
| X2FYEG *PowerPlex® 21* 2 | 12,16 | 22,25 | | 14,15 | 12,13 | 9,12 |
| | 10,12 | | 18,22 | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | | X,X | 11,12 | 22,23 |
| | 12,13 | 7,16 | | 6,9.3 | 10,11 | 17,17 |
| X9H9LA *PowerPlex® ESI17 Pro, GlobalFiler* 2 | 12,16 | 22,25 | 10,11 | 14,15 | 12,13 | 9,12 |
| | 10,12 | 14,16 | 18,22 | 11 | 12 | 18 |
| | 12,14 | 29,32.2 | 16 | X | 11,12 | 22,23 |
| | | | 18,27.2 | 6,9.3 | 10,11 | 17 |
| ZZXNEF 2 | 12,16 | 22,25 | 10,11 | 14,15 | 12,13 | 9,12 |
| | 10,12 | 14,16 | 18,22 | 11,11 | 12,12 | 18,18 |
| | 12,14 | 29,32.2 | 16,16 | X,X | 11,12 | 22,23 |
| | | | 18,27.2 | 6,9.3 | 10,11 | 17,17 |

## TABLE 1

| WebCode Item | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
| | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
| | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |

### Item 3STR

**28QJR4** — *PowerPlex® 16 HS, Power Plex ESX 17*

| 3STR | 15,16.3 | 21,24 | 10,14 | 14,16 | 12,13 | 10,11 |
|---|---|---|---|---|---|---|
| | 10,10 | 13,14 | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | 11,15 | X,Y | 11,12 | 19,23 |
| | 12,13 | 7,9 | 19,30.2 | 7,9 | 8,9 | 16,17 |

**29L2T6** — *PowerPlex® Fusion System*

| 3STR | 15,16.3 | 21,24 | 10,14 | 14,16 | 12,13 | 10,11 |
|---|---|---|---|---|---|---|
| | 10,10 | 13,14 | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | 11,15 | X,Y | 11,12 | 19,23 |
| | 12,13 | 7,9 | | 7,9 | 8,9 | 16,17 |

**2QNMTE** — *PowerPlex® 21*

| 3STR | 15,16.3 | 21,24 | | 14,16 | 12,13 | 10,11 |
|---|---|---|---|---|---|---|
| | 10,10 | | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | | X,Y | 11,12 | 19,23 |
| | 12,13 | 7,9 | | 7,9 | 8,9 | 16,17 |

**2U64N6** — *PowerPlex® Fusion Direct*

| 3STR | 15,16.3 | 21,24 | 10,14 | 14,16 | 12,13 | 10,11 |
|---|---|---|---|---|---|---|
| | 10 | 13,14 | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | 11,15 | X,Y | 11,12 | 19,23 |
| | 12,13 | 7,9 | | 7,9 | 8,9 | 16,17 |

**99Y4F7** — *PowerPlex® 21*

| 3STR | 15,16.3 | 21,24 | | 14,16 | 12,13 | 10,11 |
|---|---|---|---|---|---|---|
| | 10,10 | | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | | X,Y | 11,12 | 19,23 |
| | 12,13 | 7,9 | | 7,9 | 8,9 | 16,17 |

**AAPPL2** — *COfiler® and Profiler Plus®*

| 3STR | | | | 14,16 | 12,13 | 10,11 |
|---|---|---|---|---|---|---|
| | 10,10 | | | 8,11 | 9,13 | 13,19 |
| | | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | 7,9 | 8,9 | 16,17 |

**C2U7KY** — *PowerPlex® Fusion*

| 3STR | 15,16.3 | 21,24 | 10,14 | 14,16 | 12,13 | 10,11 |
|---|---|---|---|---|---|---|
| | 10 | 13,14 | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | 11,15 | X,Y | 11,12 | 19,23 |
| | 12,13 | 7,9 | | 7,9 | 8,9 | 16,17 |

**C694QZ** — *COfiler® and Profiler Plus®*

| 3STR | | | | 14,16 | 12,13 | 10,11 |
|---|---|---|---|---|---|---|
| | 10,10 | | | 8,11 | 9,13 | 13,19 |
| | | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | 7,9 | 8,9 | 16,17 |

## TABLE 1

| WebCode Item | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
| | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
| | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |

### Item 3STR

| CZDATY | Identifiler® Plus, GlobalFiler Express | | | | | |
|---|---|---|---|---|---|---|
| 3STR | 15,16.3 | 21,24 | 10,14 | 14,16 | 12,13 | 10,11 |
| | 10 | 13,14 | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | 11,15 | X,Y | 11,12 | 19,23 |
| | | | 19,30.2 | 7,9 | 8,9 | 16,17 |

| D3YBBR | Identifiler® PLUS | | | | | |
|---|---|---|---|---|---|---|
| 3STR | | 21,24 | | 14,16 | 12,13 | 10,11 |
| | 10,10 | | | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | 7,9 | 8,9 | 16,17 |

| D4CKNY | Identifiler® Plus | | | | | |
|---|---|---|---|---|---|---|
| 3STR | | 21,24 | | 14,16 | 12,13 | 10,11 |
| | 10 | | | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | 7,9 | 8,9 | 16,17 |

| ENXYFT | AmpFlSTR NGM SElect | | | | | |
|---|---|---|---|---|---|---|
| 3STR | 15,16.3 | 21,24 | 10,14 | 14,16 | | |
| | 10,10 | 13,14 | 17.3,21 | | 9,13 | 13,19 |
| | 16,17 | 28,30 | 11,15 | X,Y | | 19,23 |
| | | | 19,30.2 | 7,9 | | 16,17 |

| FE2J4U | PowerPlex® Fusion | | | | | |
|---|---|---|---|---|---|---|
| 3STR | 15,16.3 | 21,24 | 10,14 | 14,16 | 12,13 | 10,11 |
| | 10 | 13,14 | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | 11,15 | X,Y | 11,12 | 19,23 |
| | 12,13 | 7,9 | | 7,9 | 8,9 | 16,17 |

| FT4VYT | PowerPlex® Fusion | | | | | |
|---|---|---|---|---|---|---|
| 3STR | 15,16.3 | 21,24 | 10,14 | 14,16 | 12,13 | 10,11 |
| | 10 | 13,14 | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | 11,15 | X,Y | 11,12 | 19,23 |
| | 12,13 | 7,9 | | 7,9 | 8,9 | 16,17 |

| GH2UYU | PowerPlex® Fusion | | | | | |
|---|---|---|---|---|---|---|
| 3STR | 15,16.3 | 21,24 | 10,14 | 14,16 | 12,13 | 10,11 |
| | 10 | 13,14 | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | 11,15 | X,Y | 11,12 | 19,23 |
| | 12,13 | 7,9 | | 7,9 | 8,9 | 16,17 |

| GPHPFN | Identifiler® Plus | | | | | |
|---|---|---|---|---|---|---|
| 3STR | | 21,24 | | 14,16 | 12,13 | 10,11 |
| | 10,10 | | | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | 7,9 | 8,9 | 16,17 |

## TABLE 1

| WebCode Item | | D1S1656 / D8S1179 / D19S433 / Penta D | D2S1338 / D10S1248 / D21S11 / Penta E | D2S441 / D12S391 / D22S1045 / SE33 | D3S1358 / D13S317 / Amelogenin / TH01 | D5S818 / D16S539 / CSF1PO / TPOX | D7S820 / D18S51 / FGA / vWA |
|---|---|---|---|---|---|---|---|

### Item 3STR

| WebCode Item | Item | Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 |
|---|---|---|---|---|---|---|---|
| HD6PJU | *COfiler® and Profiler Plus®* | | | | | | |
| | 3STR | | | | 14,16 | 12,13 | 10,11 |
| | | 10,10 | | | 8,11 | 9,13 | 13,19 |
| | | | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | | 7,9 | 8,9 | 16,17 |
| HKNTQX | *Identifiler® Plus* | | | | | | |
| | 3STR | | 21,24 | | 14,16 | 12,13 | 10,11 |
| | | 10 | | | 8,11 | 9,13 | 13,19 |
| | | 16,17 | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | | 7,9 | 8,9 | 16,17 |
| J9PE7Q | *Identifiler® plus* | | | | | | |
| | 3STR | | 21,24 | | 14,16 | 12,13 | 10,11 |
| | | 10,10 | | | 8,11 | 9,13 | 13,19 |
| | | 16,17 | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | | 7,9 | 8,9 | 16,17 |
| JGJJYR | *COfiler® and Profiler Plus®* | | | | | | |
| | 3STR | | | | 14,16 | 12,13 | 10,11 |
| | | 10,10 | | | 8,11 | 9,13 | 13,19 |
| | | | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | | 7,9 | 8,9 | 16,17 |
| JJQ2XN | *Identifiler® Plus* | | | | | | |
| | 3STR | | 21,24 | | 14,16 | 12,13 | 10,11 |
| | | 10,10 | | | 8,11 | 9,13 | 13,19 |
| | | 16,17 | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | | 7,9 | 8,9 | 16,17 |
| JNVXGN | *PowerPlex® Fusion 6 C* | | | | | | |
| | 3STR | 15,16.3 | 21,24 | 10,14 | 14,16 | 12,13 | 10,11 |
| | | 10 | 13,14 | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | | 16,17 | 28,30 | 11,15 | X,Y | 11,12 | 19,23 |
| | | 12,13 | 7,9 | 19,30.2 | 7,9 | 8,9 | 16,17 |
| KAULLN | *Identifiler® Direct* | | | | | | |
| | 3STR | - | 21,24 | - | 14,16 | 12,13 | 10,11 |
| | | 10 | - | - | 8,11 | 9,13 | 13,19 |
| | | 16,17 | 28,30 | - | X,Y | 11,12 | 19,23 |
| | | - | - | - | 7,9 | 8,9 | 16,17 |
| KEPDUL | *Identifiler® ID-DIRECT* | | | | | | |
| | 3STR | | 21,24 | | 14,16 | 12,13 | 10,11 |
| | | 10 | | | 8,11 | 9,13 | 13,19 |
| | | 16,17 | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | | 7,9 | 8,9 | 16,17 |

## TABLE 1

| WebCode Item | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
| | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
| | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |

### Item 3STR

**KNZFFL** — *PowerPlex® Fusion, NGM*

| | D1/D8/D19/PentaD | D2S1338/D10/D21/PentaE | D2S441/D12/D22/SE33 | D3/D13/Amel/TH01 | D5/D16/CSF1PO/TPOX | D7/D18/FGA/vWA |
|---|---|---|---|---|---|---|
| 3STR | 15,16.3 | 21,24 | 10,14 | 14,16 | 12,13 | 10,11 |
| | 10,10 | 13,14 | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | 11,15 | X,Y | 11,12 | 19,23 |
| | 12,13 | 7,9 | | 7,9 | 8,9 | 16,17 |

**L6UWHM** — *COfiler® and Profiler Plus®*

| | | | | | | |
|---|---|---|---|---|---|---|
| 3STR | | | | 14,16 | 12,13 | 10,11 |
| | 10,10 | | | 8,11 | 9,13 | 13,19 |
| | | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | 7,9 | 8,9 | 16,17 |

**MV9TBM** — *Identifiler® Direct*

| | | | | | | |
|---|---|---|---|---|---|---|
| 3STR | - | 21,24 | - | 14,16 | 12,13 | 10,11 |
| | 10 | - | - | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | - | X,Y | 11,12 | 19,23 |
| | - | - | - | 7,9 | 8,9 | 16,17 |

**N693UH** — *Identifiler® Direct*

| | | | | | | |
|---|---|---|---|---|---|---|
| 3STR | - | 21,24 | - | 14,16 | 12,13 | 10,11 |
| | 10 | - | - | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | - | X,Y | 11,12 | 19,23 |
| | - | - | - | 7,9 | 8,9 | 16,17 |

**P7V2LK** — *COfiler® and Profiler Plus®*

| | | | | | | |
|---|---|---|---|---|---|---|
| 3STR | | | | 14,16 | 12,13 | 10,11 |
| | 10,10 | | | 8,11 | 9,13 | 13,19 |
| | | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | 7,9 | 8,9 | 16,17 |

**PKFGPK** — *Identifiler® Plus*

| | | | | | | |
|---|---|---|---|---|---|---|
| 3STR | | 21,24 | | 14,16 | 12,13 | 10,11 |
| | 10 | | | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | 7,9 | 8,9 | 16,17 |

**RGUDUK** — *COfiler® and Profiler Plus®*

| | | | | | | |
|---|---|---|---|---|---|---|
| 3STR | | | | 14,16 | 12,13 | 10,11 |
| | 10,10 | | | 8,11 | 9,13 | 13,19 |
| | | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | 7,9 | 8,9 | 16,17 |

**TLJBWF** — *Identifiler® Direct*

| | | | | | | |
|---|---|---|---|---|---|---|
| 3STR | - | 21,24 | - | 14,16 | 12,13 | 10,11 |
| | 10 | - | - | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | - | X,Y | 11,12 | 19,23 |
| | - | - | - | 7,9 | 8,9 | 16,17 |

## TABLE 1

| WebCode Item | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
| | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
| | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |

### Item 3STR

**TW2UGC**   *Identifiler® plus*

| 3STR | | 21,24 | | 14,16 | 12,13 | 10,11 |
| --- | --- | --- | --- | --- | --- | --- |
| | 10,10 | | | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | 7,9 | 8,9 | 16,17 |

**UEWKAK**   *PowerPlex® PowerPlex 21*

| 3STR | 15,16.3 | 21,24 | | 14,16 | 12,13 | 10,11 |
| --- | --- | --- | --- | --- | --- | --- |
| | 10,10 | | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | | X,Y | 11,12 | 19,23 |
| | 12,13 | 7,9 | | 7,9 | 8,9 | 16,17 |

**UJBK8C**   *PowerPlex® Fusion System, NGMSElect*

| 3STR | 15,16.3 | 21,24 | 10,14 | 14,16 | 12,13 | 10,11 |
| --- | --- | --- | --- | --- | --- | --- |
| | 10 | 13,14 | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | 11,15 | X,Y | 11,12 | 19,23 |
| | 12,13 | 7,9 | 19,30.2 | 7,9 | 8,9 | 16,17 |

**VKXJXF**   *Identifiler® Plus*

| 3STR | | 21,24 | | 14,16 | 12,13 | 10,11 |
| --- | --- | --- | --- | --- | --- | --- |
| | 10,10 | | | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | | X,Y | 11,12 | 19,23 |
| | | | | 7,9 | 8,9 | 16,17 |

**X2FYEG**   *PowerPlex® 21*

| 3STR | 15,16.3 | 21,24 | | 14,16 | 12,13 | 10,11 |
| --- | --- | --- | --- | --- | --- | --- |
| | 10,10 | | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | | X,Y | 11,12 | 19,23 |
| | 12,13 | 7,9 | | 7,9 | 8,9 | 16,17 |

**X9H9LA**   *PowerPlex® ESI17 Pro, GlobalFiler*

| 3STR | 15,16.3 | 21,24 | 10,14 | 14,16 | 12,13 | 10,11 |
| --- | --- | --- | --- | --- | --- | --- |
| | 10 | 13,14 | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | 11,15 | X,Y | 11,12 | 19,23 |
| | | | 19,30.2 | 7,9 | 8,9 | 16,17 |

**ZZXNEF**

| 3STR | 15,16.3 | 21,24 | 10,14 | 14,16 | 12,13 | 10,11 |
| --- | --- | --- | --- | --- | --- | --- |
| | 10,10 | 13,14 | 17.3,21 | 8,11 | 9,13 | 13,19 |
| | 16,17 | 28,30 | 11,15 | X,Y | 11,12 | 19,23 |
| | | | 19,30.2 | 7,9 | 8,9 | 16,17 |

# Item 3 Paternity Index Results

## TABLE 2

| WebCode Item | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
| | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
| | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |

### Item 3PI

| WebCode Item | | | | | | |
|---|---|---|---|---|---|---|
| **29L2T6** | [Country] population database | | | | | |
| 3PI | 0 | 0 | 2,403846154 | 3,353454058 | 1,383891503 | 0 |
| | 11,62790698 | 0 | 0 | 1,336898396 | 0 | 0 |
| | 0 | 0 | 0 | 1 | 1,694915254 | 3,965107058 |
| | 2,816901408 | 6,097560976 | | 0 | 0 | 1,810282404 |
| **2QNMTE** | NIST-STRBASE | | | | | |
| 3PI | 0 | 0 | | 4.6904 | 1.2893 | 0 |
| | 9.7561 | | 0 | 1.5361 | 0 | 0 |
| | 0 | 0 | | | 1.4948 | 3.2808 |
| | 2.3288 | 2.9586 | | 0 | 0 | 1.7612 |
| **2U64N6** | FBI PopStats | | | | | |
| 3PI | | | | 3.6075 | 1.4132 | |
| | 9.8039 | | | 1.5557 | | |
| | | | | | 1.5969 | 3.1606 |
| | | | | | | 1.9026 |
| **99Y4F7** | NIST-STRBASE | | | | | |
| 3PI | x | x | | 4.6904 | 1.2893 | x |
| | 9.7561 | | x | 1.5361 | x | x |
| | x | x | | - | 1.4948 | 3.2808 |
| | 2.3288 | 2.9586 | | x | x | 1.7612 |
| **C2U7KY** | NIST-STRBASE | | | | | |
| 3PI | | | 2.3752 | 4.6904 | 1.2893 | |
| | 9.7560 | | | 1.5360 | | |
| | | | | | 1.4947 | 3.2808 |
| | 2.3288 | 2.9585 | | | | 1.7611 |
| **C694QZ** | FBI PopStats | | | | | |
| 3PI | | | | 3.6075 | 1.4132 | N/A |
| | 9.8039 | | | 1.5557 | N/A | N/A |
| | | N/A | | N/A | 1.5969 | 3.1606 |
| | | | | N/A | N/A | 1.9026 |
| **CZDATY** | FBI PopStats | | | | | |
| 3PI | | | | 3.61 | 1.41 | |
| | 9.80 | | | 1.56 | | |
| | | | | | 1.60 | 3.16 |
| | | | | | | 1.90 |
| **D3YBBR** | NIST-STRBASE | | | | | |
| 3PI | | 0 | | 4.87092 | 1.30171 | 0 |
| | 9.90197 | | | 1.47319 | 0 | 0 |
| | 0 | 0 | | N/A | 1.51000 | 3.72828 |
| | | | | 0 | 0 | 1.77645 |

## TABLE 2

| WebCode Item | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
| | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
| | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |

### Item 3PI

**D4CKNY** — FBI PopStats

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 3PI | | | | 3.61 | 1.41 | |
| | 9.80 | | | 1.56 | | |
| | | | | | 1.60 | 3.16 |
| | | | | | | 1.90 |

**ENXYFT** — laboratory specific/[Country]

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 3PI | 0.002500 | 0.020556 | 2.659574 | 4.587156 | | |
| | 11.627907 | 0.000158 | 0.002066 | | 0.000831 | 0.005185 |
| | 0.000004 | 0.000000 | 0.000786 | | | 4.273504 |
| | | | 0.003378 | 0.000071 | | 1.851852 |

**FE2J4U**

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 3PI | | | 2.3752 | 4.6904 | 1.2893 | |
| | 9.7560 | | | 1.5360 | | |
| | | | | | 1.4947 | 3.2808 |
| | 2.3288 | 2.9585 | | | | 1.7611 |

**GH2UYU** — NIST-STRBASE

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 3PI | | | 2.3752 | 4.6904 | 1.2893 | |
| | 9.7560 | | | 1.5360 | | |
| | | | | | 1.4947 | 3.2808 |
| | 2.3288 | 2.9585 | | | | 1.7611 |

**HKNTQX** — [Country] Caucasian database

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 3PI | | ex. | | 4.25 | 1.39 | ex |
| | 11.27 | | | 1.64 | ex | ex |
| | ex. | ex. | | | 1.57 | 3.41 |
| | | | | ex | ex | 1.87 |

**J9PE7Q** — NIST-STRBASE

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 3PI | | 0 | | 4.69 | 1.29 | 0 |
| | 9.76 | | | 1.54 | 0 | 0 |
| | 0 | 0 | | 1 | 1.49 | 3.28 |
| | | | | 0 | 0 | 1.76 |

**JJQ2XN** — NIST-STRBASE

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 3PI | | - | | 2.86 | 2.23 | - |
| | 6.35 | | | 1.72 | - | - |
| | - | - | | | 1.64 | 1.60 |
| | | | | - | - | 1.91 |

**KAULLN** — NIST-STRBASE

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| 3PI | - | 0.0010 | - | 4.6860 | 1.2893 | 0.0020 |
| | 9.7561 | - | - | 1.5361 | 0.0040 | 0.0030 |
| | 0.0010 | 0.0010 | - | - | 1.4948 | 3.2808 |
| | - | - | - | 0.0000 | 0.0001 | 1.7606 |

## TABLE 2

| WebCode Item | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
| --- | --- | --- | --- | --- | --- | --- |
| | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
| | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
| | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |

### Item 3PI

| | | D1S1656 / D8S1179 / D19S433 / Penta D | D2S1338 / D10S1248 / D21S11 / Penta E | D2S441 / D12S391 / D22S1045 / SE33 | D3S1358 / D13S317 / Amelogenin / TH01 | D5S818 / D16S539 / CSF1PO / TPOX | D7S820 / D18S51 / FGA / vWA |
| --- | --- | --- | --- | --- | --- | --- | --- |
| MV9TBM | NIST-STRBASE | | | | | | |
| 3PI | | - | 0.0010 | - | 4.6904 | 1.2893 | 0.0020 |
| | | 9.7561 | - | - | 1.5361 | 0.0040 | 0.0030 |
| | | 0.0010 | 0.0010 | - | - | 1.4948 | 3.2808 |
| | | - | - | - | 0 | 0.001 | 1.7612 |
| PKFGPK | Laboratory Specific Database | | | | | | |
| 3PI | | | | | 3.1725 | 1.4188 | |
| | | 10.2669 | | | 1.6778 | | |
| | | | | | 1.5475 | 3.2916 | |
| | | | | | | 2.0408 | |
| TLJBWF | NIST-STRBASE | | | | | | |
| 3PI | | - | 0.0010 | - | 4.6904 | 1.2893 | 0.0020 |
| | | 9.7561 | - | - | 1.5361 | 0.0040 | 0.0030 |
| | | 0.0010 | 0.0010 | - | - | 1.4948 | 3.2808 |
| | | - | - | - | 0.0000 | 0.0001 | 1.7612 |
| TW2UGC | FBI PopStats | | | | | | |
| 3PI | | | 0 | | 3.61 | 1.42 | 0 |
| | | 9.18 | | | 1.6 | 0 | 0 |
| | | 0 | 0 | | | 1.6 | 3.16 |
| | | | | | 0 | 0 | 1.87 |
| UJBK8C | [Country] population | | | | | | |
| 3PI | | 0,00 | 0,00 | 2,659574 | 4,255319 | 1,389661 | 0,00 |
| | | 14,326648 | 0,00 | 0,00 | 1,300052 | 0,00 | 0,00 |
| | | 0,00 | 0,00 | 0,00 | | 1,690046 | 4,464286 |
| | | 2,696872 | 3,612717 | 0,00 | 0,00 | 0,00 | 1,688619 |
| VKXJXF | FBI PopStats | | | | | | |
| 3PI | | | | | 3.6075 | 1.4128 | |
| | | 9.8039 | | | 1.5557 | | |
| | | | | | 1.5969 | 3.1606 | |
| | | | | | | 1.9026 | |

# YSTR Results

## TABLE 3

| WebCode | Item | DYS19 | DYS385 | DYS389-I | DYS389-II | DYS390 | DYS391 | DYS392 | DYS393 |
|---------|------|--------|---------|-----------|-----------|---------|---------|---------|---------|
|         |      | DYS437 | DYS438 | DYS439 | DYS448 | DYS456 | DYS458 | DYS481 | DYS533 |
|         |      | DYS549 | DYS570 | DYS576 | DYS635 | DYS643 | Y GATA H4 | YIndel | |

### Item 3

| WebCode | Item | DYS19 | DYS385 | DYS389-I | DYS389-II | DYS390 | DYS391 | DYS392 | DYS393 |
|---------|------|--------|---------|-----------|-----------|---------|---------|---------|---------|
| 28QJR4 | PowerPlex® Y 23 | | | | | | | | |
|  | 3 | 14 | 12,15 | 13 | 30 | 24 | 11 | 13 | 13 |
|  |  | 15 | 12 | 12 | 19 | 18 | 17 | 22 | 13 |
|  |  | 12 | 16 | 18 | 23 | 9 | 11 | | |
| 29L2T6 |  | | | | | | | | |
|  | 3 | | | | | | 11 | | |
|  |  | | | | | | | | |
| CZDATY | Yfiler® , Yfiler Plus | | | | | | | | |
|  | 3 | 14 | 12,15 | 13 | 30 | 24 | 11 | 13 | 13 |
|  |  | 15 | 12 | 12 | 19 | 18 | 17 | 22 | 13 |
|  |  | | 16 | 18 | 23 | | 11 | | |
| D3YBBR | Yfiler® | | | | | | | | |
|  | 3 | 14 | 12,15 | 13 | 30 | 24 | 11 | 13 | 13 |
|  |  | 15 | 12 | 12 | 19 | 18 | 17 | | |
|  |  | | | | 23 | | 11 | | |
| FT4VYT | Yfiler® | | | | | | | | |
|  | 3 | 14 | 12,15 | 13 | 30 | 24 | 11 | 13 | 13 |
|  |  | 15 | 12 | 12 | 19 | 18 | 17 | | |
|  |  | | | | 23 | | 11 | | |
| GPHPFN | Yfiler® | | | | | | | | |
|  | 3 | 14 | 12,15 | 13 | 30 | 24 | 11 | 13 | 13 |
|  |  | 15 | 12 | 12 | 19 | 18 | 17 | | |
|  |  | | | | 23 | | 11 | | |
| JJQ2XN | Yfiler® | | | | | | | | |
|  | 3 | 14 | 12,15 | 13 | 30 | 24 | 11 | 13 | 13 |
|  |  | 15 | 12 | 12 | 19 | 18 | 17 | | |
|  |  | | | | 23 | | 11 | | |
| N693UH | Yfiler® | | | | | | | | |
|  | 3 | 14 | 12,15 | 13 | 30 | 24 | 11 | 13 | 13 |
|  |  | 15 | 12 | 12 | 19 | 18 | 17 | - | - |
|  |  | - | - | - | 23 | - | 11 | - | |
| TLJBWF | Yfiler® | | | | | | | | |
|  | 3 | 14 | 12,15 | 13 | 30 | 24 | 11 | 13 | 13 |
|  |  | 15 | 12 | 12 | 19 | 18 | 17 | - | - |
|  |  | - | - | - | 23 | - | 11 | - | |

## TABLE 3

| WebCode | Item | DYS19 | DYS385 | DYS389-I | DYS389-II | DYS390 | DYS391 | DYS392 | DYS393 |
|---|---|---|---|---|---|---|---|---|---|
| | | DYS437 | DYS438 | DYS439 | DYS448 | DYS456 | DYS458 | DYS481 | DYS533 |
| | | DYS549 | DYS570 | DYS576 | DYS635 | DYS643 | Y GATA H4 | YIndel | |

### Item 3

| WebCode | Item | DYS19 | DYS385 | DYS389-I | DYS389-II | DYS390 | DYS391 | DYS392 | DYS393 |
|---|---|---|---|---|---|---|---|---|---|
| TW2UGC | *Yfiler® plus* | | | | | | | | |
| | 3 | 14 | 12,15 | 13 | 30 | 24 | 11 | 13 | 13 |
| | | 15 | 12 | 12 | 19 | 18 | 17 | 22 | 13 |
| | | | 16 | 18 | 23 | | 11 | | |
| UJBK8C | *PowerPlex® Y 23 System* | | | | | | | | |
| | 3 | 14 | 12,15 | 13 | 30 | 24 | 11 | 13 | 13 |
| | | 15 | 12 | 12 | 19 | 18 | 17 | 22 | 13 |
| | | 12 | 16 | 18 | 23 | 9 | 11 | | |
| X9H9LA | *Yfiler®* | | | | | | | | |
| | 3 | 14 | 12,15 | 13 | 30 | 24 | 11 | 13 | 13 |
| | | 15 | 12 | 12 | 19 | 18 | 17 | | |
| | | | | | 23 | | 11 | 2 | |
| ZZXNEF | *Yfiler®* | | | | | | | | |
| | 3 | 14 | 12,15 | 13 | 30 | 24 | 11 | 13 | 13 |
| | | 15 | 12 | 12 | 19 | 18 | 17 | | |
| | | | | | 23 | | 11 | 2 | |

# Additional DNA & PI Results

## TABLE 4

| Locus | WebCode | Item 1 | Item 2 | Item 3 | Item 3<br>Paternity Index |
|-------|---------|--------|--------|--------|--------------------------|
| D6S1043 | 2QNMTE | 11,17 | 11,13 | 11,17 | 0 |
|  | 99Y4F7 | 11,17 | 11,13 | 11,17 | x |
|  | UEWKAK | 11,17 | 11,13 | 11,17 |  |
|  | X2FYEG | 11,17 | 11,13 | 11,17 |  |
| DYF387S1 | CZDATY | Not Tested | Not Tested | 34,37 |  |
|  | TW2UGC |  |  | 34,37 |  |
| DYS391 | 29L2T6 |  |  | 11 |  |
|  | CZDATY | No Result | No Result | 11 |  |
| DYS449 | CZDATY | Not Tested | Not Tested | 31 |  |
|  | TW2UGC |  |  | 31 |  |
| DYS460 | CZDATY | Not Tested | Not Tested | 11 |  |
|  | TW2UGC |  |  | 11 |  |
| DYS518 | CZDATY | Not Tested | Not Tested | 40 |  |
|  | TW2UGC |  |  | 40 |  |
| DYS627 | CZDATY | Not Tested | Not Tested | 22 |  |
| YINDEL | CZDATY | No Result | No Result | 2 |  |

# Paternity DNA Statistics

## TABLE 5

| WebCode | Combined Paternity Index | Probability of Paternity | Population Database Used |
|---|---|---|---|
| 29L2T6 | 0 | 0 | [Country] population database |
| 2QNMTE | 0 | 0 | NIST-STRBASE |
| 2U64N6 | 746 | 99.87 | FBI PopStats |
| 99Y4F7 | 0 | 0 | NIST-STRBASE |
| C2U7KY | | | NIST-STRBASE |
| C694QZ | N/A | N/A | FBI PopStats |
| CZDATY | See Comments | See Comments | FBI PopStats |
| D3YBBR | 0 | 0 | NIST-STRBASE |
| D4CKNY | see add'l comments | see add'l comments | FBI PopStats |
| ENXYFT | 0 | 0 | laboratory specific/[Country] |
| GH2UYU | | | NIST-STRBASE |
| GPHPFN | 0 | 0 | NIST-STRBASE |
| HD6PJU | N/A | N/A | FBI PopStats |
| HKNTQX | exclusion | exclusion | [Country] Caucasian database |
| J9PE7Q | 0 | 0 | NIST-STRBASE |
| JGJJYR | | | FBI PopStats |
| JJQ2XN | 350.83 | %Probability = 99.71576891% (<99.90%) | NIST-STRBASE |
| JNVXGN | 2,33E-47 | 0 % | NIST-STRBASE |
| KAULLN | 2.63e-23 | 0% (CPI less than 1, therefore there is no relationship) | NIST-STRBASE |
| KNZFFL | Exclusion! | Exclusion! | NIST-STRBASE |
| MV9TBM | 2.63e-23 | CPI less than 1, therefore there is no relationship. | NIST-STRBASE |
| P7V2LK | N/A | N/A | FBI PopStats |
| PKFGPK | | | Laboratory Specific Database |
| RGUDUK | N/A | N/A | FBI PopStats |
| TLJBWF | 2.63e-23 | 0%(CPI less than 1, therefore no relationship) | NIST-STRBASE |
| TW2UGC | 0 | 0% | FBI PopStats |
| UJBK8C | 0.00 | 0.00% | [Country] population |

## TABLE 5

| WebCode | Combined Paternity Index | Probability of Paternity | Population Database Used |
|---------|--------------------------|--------------------------|-------------------------|
| VKXJXF | N/A | N/A | FBI PopStats |
| X2FYEG | N/A | N/A | N/A |
| X9H9LA | No statistic analysis performed | No statistic analysis performed | Local Database |
| ZZXNEF | Not calculated | Not calculated | NIST-STRBASE |

# Paternity Conclusions
## TABLE 6

| WebCode | Conclusions | WebCode | Conclusions |
|---------|-------------|---------|-------------|
| 28QJR4 | Excluded | L6UWHM | Excluded |
| 29L2T6 | Excluded | MV9TBM | Excluded |
| 2QNMTE | Excluded | N693UH | Excluded |
| 2U64N6 | Excluded | P7V2LK | Excluded |
| 99Y4F7 | Excluded | PKFGPK | Excluded |
| AAPPL2 | Excluded | RGUDUK | Excluded |
| C2U7KY | Excluded | TLJBWF | Excluded |
| C694QZ | Excluded | TW2UGC | Excluded |
| CZDATY | Excluded | UEWKAK | Excluded |
| D3YBBR | Excluded | UJBK8C | Excluded |
| D4CKNY | Excluded | VKXJXF | Excluded |
| ENXYFT | Excluded | X2FYEG | Excluded |
| FE2J4U | Excluded | X9H9LA | Excluded |
| FT4VYT | Excluded | ZZXNEF | Excluded |
| GH2UYU | Excluded | | |
| GPHPFN | Excluded | | |
| HD6PJU | Excluded | | |
| HKNTQX | Excluded | | |
| J9PE7Q | Excluded | | |
| JGJJYR | Excluded | | |
| JJQ2XN | Excluded | | |
| JNVXGN | Excluded | | |
| KAULLN | Excluded | | |
| KEPDUL | Excluded | | |
| KNZFFL | Excluded | | |

| Response Summary | Total: 39 |
|------------------|-----------|
| Not Excluded | 0 |
| Excluded | 39 |
| Inconclusive | 0 |

Responses

# Kinship DNA Statistics

Is the claim of a sibling relationship supported by the genetic evidence?

## TABLE 7

| WebCode | Database | Kinship Index | Claim Supported? |
|---|---|---|---|
| 28QJR4 | | 1.649.787 | Yes, genetic evidence suppotrs the sibling relationship. |
| 2QNMTE | NIST-STRBASE | 338368.0071 | Yes |
| C694QZ | FBI PopStats | N/A | N/A |
| GPHPFN | NIST-STRBASE | 7.18747 | Yes |
| J9PE7Q | NIST-STRBASE | 337367 | Yes |
| JJQ2XN | NIST-STRBASE | KI (Full Sibling) = 196,990.5337 | Yes, support |
| JNVXGN | NIST-STRBASE | 0.99996 | Yes it is. |
| KAULLN | NIST-STRBASE | 3.38e5 | YES |
| KNZFFL | NIST-STRBASE | 660663.7817 | yes, if unrelated is considered as only alternative. |
| MV9TBM | NIST-STRBASE | 3.37E+05 | Yes |
| N693UH | | Cumulative LR:3.78, Posterior Probability=79% | No |
| TLJBWF | NIST-STRBASE | 3.37e5 | Yes |
| TW2UGC | FBI PopStats | 109496.275 | Yes |
| UJBK8C | [Country] population | 99,98969% - full siblings versus unrelated | Yes |
| VKXJXF | FBI PopStats | 2.919 | YES |
| X9H9LA | Local Database | 26755 | Yes |
| ZZXNEF | NIST-STRBASE | 23316595 | Yes |

# Additional Kinship Statistical Results

## TABLE 8

| WebCode | Additional Statistical Results |
|---|---|
| 28QJR4 | Making the comparison between the genetic profile of the sibling relationship ,is obtained a kinship index of 1.649.787 and a probability fo relationship of 99,9999%. Even if genetic evidence supports the sibling relationship, it would be good to complete the result whith an analysis of mitochondrial DNA to determine if they belong to the same maternal lineage. |
| 2QNMTE | Minimum allele frequency for FGA (allele 28) calculated using 5/2n = 0.0069 |
| GPHPFN | Two DNA profiles were compared by using the Caucasian population database same as previous sections. There are likely to be sibling because probability by kinship index is greater than 87.78% |
| J9PE7Q | The kinship index supports the hypothesis that the Brother Profile is the sibling of the Sister Profile. The genotype observed for the Brother Profile is 337367 times more likely to occur in a sibling of the Sister Profile than in someone unrelated to the Sister Profile from the NIST population database. |
| JJQ2XN | KI (Full Sibling) = 196,990.5337 % Probability = 99.99949236% KI (Half Sibling) = 265,764.9382 % Probability = 99.99962373% Based on the STR analysis of the samples, the genetic data support a full sibling (and half sibling also) relationship between the two samples. |
| JNVXGN | LR=25875 |
| KAULLN | [Participant created a manually formatted table within the free form text space. This special formatting was not transferable into the final report. Data is presented as is.] Locus Brother Sister Shared Allele Frequency Formula D1S1656 14,17.3 14,17.3 14 17.3 0.0789 0.1330 14.6860 D2S1338 16,26 16,17 16 0.0374 3.5922 D2S441 11,12 12,14 12 0.0471 2.9039 D3S1358 15,18 17,18 18 0.1510 1.0778 D5S818 11,11 11,12 11 0.3560 0.9522 D7S820 9,12 8,9 9 0.1676 0.9958 D8S1179 14,15 14,16 14 0.1662 1.0021 D10S1248 14,16 15,16 16 0.1330 1.1898 D12S391 19,21 21,21 21 0.1288 2.1910 D13S317 11,13 8,13 13 0.1163 1.3248 D16S539 9,10 8,10 10 0.0568 2.4507 D18S51 12,20 14,18 0.2500 D19S433 12,12 12,14 12 0.0706 3.7911 D21S11 28,30 27,31.2 0.2500 D22S1045 11,16 11,16 11 16 0.1399 0.3823 3.8076 Amel X,Y X,X CSF1PO 11,13 10,12 0.2500 FGA 21,28 25,28 28 0.0069 18.3659 PentaD 9,15 9,13 9 0.2216 0.8141 PentaE 5,10 10,10 10 0.0859 3.1604 SE33 18,20 18,20 18 20 0.0734 0.0582 33.3619 THO1 6,9.3 8,8 0.2500 TPOX 8,11 8,11 8 11 0.5249 0.2521 1.9286 VWA 18,18 16,18 18 0.2022 1.4864 Cumulative LR = 3.38411.E+05 Prob 99.9997% |
| KNZFFL | Additional relationships considered: Halfsibs and Cousins. Kinship index for halfsibs (vs unrelated) = 661637.7508. Kinship index for Cousins (vs unrelated) = 15045.44031. Therefore, based on the results of the DNA-test, a biological relationship between these persons cannot be excluded. However, it is impossible to say if they are full sibs or half sibs, since these relationships are equally likely. |
| MV9TBM | [Participant created a manually formatted table within the free form text space. This special formatting was not transferable into the final report. Data is presented as is.] Lokus Brother Sister Formula Given frequency KI D1S1656 14,17.3 14,17.3 (1+p+s+2ps)/8ps p=14, q=17.3 0.0789 0.133 14.6860 D2S1338 16,26 16,17 (1+2p)/8p p=16 0.0374 3.5922 D2S441 11,12 12,14 (1+2q)/8q q=12 0.0471 2.9039 D3S1358 15,18 17,18 (1+2s)/8s s=18 0.1510 1.0778 D5S818 11,11 11,12 (1+p)/4p p=11 0.3560 0.9522 D7S820 9,12 8,9 (1+2q)/8q q=9 0.1676 0.9958 D8S1179 14,15 14,16 (1+2p)/8p p=14 0.1662 1.0021 D10S1248 14,16 15,16 (1+2r)/8r r=16 0.1330 1.1898 D12S391 19,21 21,21 (1+q)/4q q=21 0.1288 2.1910 D13S317 11,13 8,13 (1+2u)/8u u=13 0.1163 1.3248 D16S539 9,10 8,10 (1+2r)/8r r=10 0.0568 2.4507 D18S51 12,20 14,18 1/4 0.2500 0.2500 D19S433 12,12 12,14 (1+p)/4p p=12 0.0706 3.7911 D21S11 28,30 27,31.2 1/4 0.2500 0.2500 D22S104511,16 11,16 (1+p+s+2ps)/8psp=11, s=16 0.1399 0.3823 3.8076 AMEL XY XX CSF1PO 11,13 10,12 1/4 |

# TABLE 8

| WebCode | Additional Statistical Results |
|---|---|
| | 0.2500 0.2500 FGA 21,28 25,28 (1+2w)/8w w=28 0.0069 18.3000 PENTA D 9,15 9,13 (1+2p)/8p p=9 0.2216 0.8141 PENTA E 5,10 10,10 (1+q)/4q q=10 0.0859 3.1604 SE33 18,20 18,20 (1+p+s+2ps)/8ps p=18, s=20 0.0734 0.0582 33.3619 TH01 6,9.3 8,8 1/4 0.2500 0.2500 TPOX 8,11 8,11 (1+p+s+2ps)/8ps p=8, s=11 0.5249 0.2521 1.9286 VWA 18,18 16,18 (1+r)/4r r=18 0.2022 1.4864 Cumulative LR: 337196.3342 Probability of Sibship: 99.9997% |
| N693UH | By assuming prior = 50% and Theta = 3% Conclusion: The DNA profiles of "Brother" and "Sister" are not related as siblings. Source: NIST STRBASE Poo. Database |
| TLJBWF | [Participant created a manually formatted table within the free form text space. This special formatting was not transferable into the final report. Data is presented as is.] Brother Sister Locus Formula Allele Frequency PI 14,17.3 14,17.3 D1S1656 (1+p+s+2ps)/8ps p=14,s=17.3 0.0789 0.133 14.6860 16,26 16,17 D2S1338 (1+2p)/8p p=16 0.0374 3.5922 11,12 12,14 D2S441 (1+2p)/8p p=12 0.0471 2.9039 15,18 17,18 D3S1358 (1+2p)/8p p=18 0.1510 1.0778 11,11 11,12 D5S818 (1+p)/4p p=11 0.3560 0.9522 9,12 8,9 D7S820 (1+2p)/8p p=9 0.1676 0.9958 14,15 14,16 D8S1179 (1+2p)/8p p=14 0.1662 1.0021 14,16 15,16 D10S1248 (1+2p)/8p p=16 0.1330 1.1898 19,21 21,21 D12S391 (1+s)/4s s=21 0.1288 2.1910 11,13 8,13 D13S317 (1+2p)/8p p=13 0.1163 1.3248 9,10 8,10 D16S539 (1+2p)/8p p=10 0.0568 2.4507  12,20 14,18 D18S51 1/4  0.2500 12,12 12,14 D19S433 (1+s)/4s s=12 0.0706 3.7911  28,30 27,31.2 D21S11 1/4  0.2500 11,16 11,16 D22S1045 (1+p+s+2ps)/8ps p=11,s=16 0.1399 0.3823 3.8076  XY XX Amelogenin  11,13 10,12 CSF1PO 1/4  0.2500 21,28 25,28 FGA (1+2p)/8p p=28 5/2n=0.0069 18.3000  9,15 9,13 Penta D (1+2p)/8p p=9 0.2216 0.8141 5,10 10,10 Penta E (1+s)/4s s=10 0.0859 3.1604 18,20 18,20 SE33 (1+p+s+2ps)/8ps p=18,s=20 0.0734 0.0582 33.3619    6,9.3 8,8 TH01 1/4  0.2500 8,11 8,11 TPOX (1+p+s+2ps)/8ps p=8,s=11 0.5249 0.2521 1.9286 18,18 16,18 vWA (1+s)/4s s=18 0.2022 1.4864 Cumulative LR: 337196.3342 Probability of sibship: 99.9997% |
| TW2UGC | Sibling profiles were compared by using the Caucasian population database in previous sections. Theses two DNA profiles are likely to be biologically related as sibling (probability of sibling relationship = 99.99%), however to strengthen the genetic evidence it is necessary to complement these results analyzing lineage Markers in this case mitochondrial DNA and analyzing more autosomal STR loci commercially available. Our statistical software uses a minimum allele frequency of (5) observations in the data set. This has occurred at FGA. |
| UJBK8C | 1. Half siblings/Uncle-Nephew/Grandparent/Grandchild versus Unrelated - 99,98878% 2. First cousins versus Unrelated - 99,82650% Statistical calculations are based on the database for the [Country] population. Suggested further research on additional autosomal STR markers and mtDNA. |
| VKXJXF | The kinship index supports the hypothesis that Profile labeled - Sister is the sibling of Profile labeled - Brother using the reference populations listed. The genotype observed for Profile labeled - Sister is "X" times more likely to occur in a sibling relationship of Profile labeled - Brother than in someone unrelated to Profile labeled - Brother from the reference populations listed where "X" equals: African American - 4.281 Caucasian - 2.919 Hispanic - 13.30 |
| ZZXNEF | At FGA the 28 allele was unobserved in the database. Frequency was calculated using 1/k(N+1) where k = no. alleles at FGA with non zero frequency. N= no. total alleles observed. |

# Additional Comments
## TABLE 9

| WebCode | Additional Comments |
|---|---|
| AAPPL2 | This laboratory does not perform statistical analysis in cases of exclusion. |
| C694QZ | When the alleged father is determined to be excluded as a possible biological parent of the child, our laboratory does not perform statistical calculations for Probability of Exclusion, Parentage Index, or Probability of Parentage. However, when the alleged father is included as a possible biological parent of the child, a statistical calculation is performed and our laboratory would use the FBI Popstats Pop. Database. Our laboratory does not perform kinship DNA analysis. |
| CZDATY | Items 1, 2, and 3 were analyzed using the Identifiler Plus and GlobalFiler Express kits. Results for YIndel and DYS391 are included under the "Additional DNA" tab. No DNA typing results were obtained for Items 1 and 2 for YIndel or DYS391 and are listed under the "Additional DNA" tab as "No Result." Items 1 and 2 were not tested using a YSTR kit. The remaining YSTR loci listed under the "Additional DNA" tab are reported as "Not Tested" for Items 1 and 2. Item 3 was also analyzed using the Yfiler and Yfiler Plus kits. Loci not listed under the YSTR Kit Specific Loci for Item 3 are included under the "Additional DNA" tab. No Paternity Index (PI) is reported for these Y-chromosome specific loci. Results for YIndel and DYS391 under the "Additional DNA" tab for Item 3 are from the GlobalFiler Express kit. The Yfiler and Yfiler Plus kits do not include YIndel. For Item 3, the PI is listed for individual loci. The PI was left blank on the results form if the individual locus did not have a matching obligate paternal allele. The FBI Popstats Database did not have frequency information for locus D2S441, and the PI for this locus, which does have a matching obligate paternal allele, was also left blank. No Combined Paternity Index value or Probability of Paternity was entered on the "Paternity DNA" tab because the alleged parent was excluded as the biological parent of the child. |
| D4CKNY | A Parentage Index (PI) value was only reported for loci in which the determined obligate allele(s) was also shared with the Tested Man (item 3 Alleged Father). Since multiple mismatches were observed overall (i.e. at eight of fifteen autosomal loci examined) the PI fields were left intentionally blank (along with Amelogenin). Consequently, the Combined Paternity Index (CPI) and the Probability of Paternity were not calculated since the Tested Man is excluded as a possible biological parent of the Child (item 2). |
| ENXYFT | In our laboratory for kinship analysis we use mtDNA, X-STR and Y-STR analysis. |
| HD6PJU | Our laboratory currently does not perform statistical calculations on samples when the alleged father is excluded from being the biological parent of the child at three or more systems. |
| KAULLN | 1. Item 1 and Item 2 and Item 3 were extracted using in-situ method and amplified using Identifiler Direct in the 9700 thermal cycler. 2. Electrophoresis process were carried out by Genetic Analyzer 3130xl for Item 1 to Item 3. 3. Reagent blank, positive control and negative control were carried out along with the analysis and all gave the intended results. 4. The statistical formula were derived by DNA View Statistical Software and calculated using Ms Excel. |
| KEPDUL | RESULT: by studying the DNA profiles of all three donors we clarify the following:- 1- blood sample labeled with item 3 is the biological mother of the donor of blood stain labeled with item 2. 2- blood sample labeled with item 3 cannot be the biological father of donor of blood stain labeled with item 2. |
| L6UWHM | In cases of exclusions, our laboratory does not perform statistical analysis. Our laboratory does not perform kinship analysis. |

# TABLE 9

| WebCode | Additional Comments |
|---------|---------------------|
| MV9TBM | 1. Item 1, Item 2, and Item 3 were extracted using in-situ method and amplified using AmpFISTR Direct kit. 2. Electrophoresis were carried out using Applied Biosystem 3130xL Genetic Analyzer. 3. Reagent blank, positive and negative control were carried out along with the analysis. 4. The statistical formula were derived by DNA View Statistical Software and calculated using Microsoft Excel. |
| P7V2LK | For parentage testing, this laboratory does not report any statistical calculations if the alleged parent is excluded as a possible biological parent. Exclusion is concluded if the alleged parent's alleles are not observed at three or more STR loci. This laboratory does not perform kinship analysis. |
| RGUDUK | Our laboratory does not perform statistical analysis on exclusions. |
| TLJBWF | 1. Item 1, Item 2 and Item 3 were extracted using in-situ method and amplified using AmpFISTR Direct Kit. 2. Item 3 was amplified using Yfiler Kit. 3. Electrophoresis were carried out using Applied Biosystem 3130xL Genetic Analyzer. 4. Reagent blank, positive and negative control were carried out along with the analysis and all gave intended results. 5. The statistical formula were derived by DNA View Statistical Software and calculated using microsoft Excel. |
| TW2UGC | The Alleged parent (Item 3) is excluded as a possible biological parent of the child (Item 2) based on the DNA results at eight of the fifteen STR loci tested. Our Laboratory does not report statistics for exclusions. |
| UEWKAK | Please note that our laboratory would not calculate the probability of paternity for an exclusion. |
| X2FYEG | Information at D5S818 omitted from parentage assessment due to allele designation inconsistency. Paternity Index was not calculated, manual assessment resulted in an exclusion of alleged father as possible biological parent of child. |
| ZZXNEF | STR amplification kit used: GlobalFiler. It is protocol within our laboratory that if greater than 2 mendelion inconsistencies exist in a paternity pedigree a paternity index is not calculated and it is reported as excluded as the biological parent of the child. |

# Appendix: Data Sheet

## Collaborative Testing Services ~ Forensic Testing Program
## Test No. 16-5871: DNA Parentage

### DATA MUST BE RECEIVED BY _July 11, 2016_ TO BE INCLUDED IN THE REPORT

Participant Code:            WebCode:

---

## Accreditation Release Statement

**CTS submits external proficiency test data directly to ASCLD/LAB, ANAB and A2LA. Please select one of the following statements to ensure your data is handled appropriately.**

☐ This participant's data is intended for submission to ASCLD/LAB, ANAB and/or A2LA. (Accreditation Release section on the last page must be completed and submitted.)

☐ This participant's data is **NOT** intended for submission to ASCLD/LAB, ANAB or A2LA.

---

### Scenario:

A standard paternity trio case has been presented to your laboratory. Blood standards have been collected from the mother, daughter, and alleged father. Your laboratory is tasked with examining the blood standards and comparing the DNA profiles.

### Items Submitted (Sample Pack DNP2):

Item 1: Blood Sample from Known Parent (Mother)

Item 2: Blood Sample from Known Child (Daughter)

Item 3: Blood Sample from Alleged Father (Caucasian)

### DNA Reporting Instructions:

Use the instructions below to complete the following DNA Analysis sections of this data sheet.

* Report alleles in numerical order, separated by a comma.
* Follow your laboratory procedures for reporting homozygotes (i.e. "14,14", "14,-", "14")
* PI = Paternity Index; KI - Kinship Index

| _Example_ | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| STR | 15,18 | 12,17 | 10 | 14 | 12 | 5,13 |
| PI | 1.65 | 3.01 | 3.16 | 4.12 | 2.45 | 5.65 |

**Please return all pages of this data sheet.**

## *Part I: DNA ANALYSIS FOR ITEM* 1

**STR Amplification Kit Used:** Please check the brands that apply for this item and record ONLY the additional kit specific naming in the blank provided (i.e. 16, Plus, Direct, 16 HS, etc.).

☐ Cofiler®/Profiler Plus® _____ ☐ PowerPlex® _____

☐ Identifiler® _____

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| STR | | | | | | |

| | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
|---|---|---|---|---|---|---|
| STR | | | | | | |

| | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
|---|---|---|---|---|---|---|
| STR | | | | | | |

| | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |
|---|---|---|---|---|---|---|
| STR | | | | | | |

*ITEM 1*

## *ADDITIONAL DNA RESULTS FOR ITEM 1*
**(If additional space is needed, copy this page or attach your own form following this layout)**

**ITEM 1**
Alleles

**ITEM 1**
Alleles

_____

_____

_____

_____

**Please return all pages of this data sheet.**

Page 2 of 8

## *Part I: DNA ANALYSIS FOR ITEM 2*

**STR Amplification Kit Used:**    Please check the brands that apply for this item and record ONLY the additional kit specific naming in the blank provided (i.e. 16, Plus, Direct, 16 HS, etc.).

☐ Cofiler®/Profiler Plus® _____            ☐ PowerPlex® _____

☐ Identifiler® _____

**ITEM 2**

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| STR | | | | | | |

| | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
|---|---|---|---|---|---|---|
| STR | | | | | | |

| | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
|---|---|---|---|---|---|---|
| STR | | | | | | |

| | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |
|---|---|---|---|---|---|---|
| STR | | | | | | |

## *ADDITIONAL DNA RESULTS FOR ITEM 2*
**(If additional space is needed, copy this page or attach your own form following this layout)**

**ITEM 2**                                                   **ITEM 2**

Alleles                                                       Alleles

_____      [ ]                      _____      [ ]

_____      [ ]                      _____      [ ]

**Please return all pages of this data sheet.**          Page 3 of 8

## *Part I: DNA ANALYSIS FOR ITEM 3*

**STR Amplification Kit Used:** Please check the brands that apply for this item and record ONLY the additional kit specific naming in the blank provided (i.e. 16, Plus, Direct, 16 HS, etc.).

☐ Cofiler®/Profiler Plus® _____          ☐ PowerPlex® _____

☐ Identifiler® _____

**Please refer to the 'Part II: Paternity DNA Statistics' section of this data sheet regarding the suggested Population Databases to use to determine PI values.**

ITEM 3

| | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---|---|---|---|---|---|---|
| STR | | | | | | |
| PI | | | | | | |

| | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
|---|---|---|---|---|---|---|
| STR | | | | | | |
| PI | | | | | | |

| | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
|---|---|---|---|---|---|---|
| STR | | | | | | |
| PI | | | | | | |

| | Penta D | Penta E | SE33 | TH01 | TPOX | vWA |
|---|---|---|---|---|---|---|
| STR | | | | | | |
| PI | | | | | | |

*YSTR results are for proficiency concordance only*

**YSTR Amplification Kit Used:** Please check all the brands that apply for this item and record ONLY the additional kit specific naming in the blank provided (i.e. Plus, 23, etc.).

☐ YFiler® _____          ☐ PowerPlex® Y _____

ITEM 3

| DYS19 | DYS385 | DYS389-I | DYS389-II | DYS390 | DYS391 | DYS392 | DYS393 |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| DYS437 | DYS438 | DYS439 | DYS448 | DYS456 | DYS458 | DYS481 | DYS533 |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| DYS549 | DYS570 | DYS576 | DYS635 | DYS643 | Y GATA H4 | Y Indel |
|---|---|---|---|---|---|---|
| | | | | | | |

## *ADDITIONAL DNA RESULTS FOR ITEM 3*

**(If additional space is needed, copy this page or attach your own form following this layout)**

| **ITEM 3** | | **ITEM 3** | |
|---|---|---|---|
| Alleles | Paternity Index | Alleles | Paternity Index |
| | | | |
| | | | |

**Please return all pages of this data sheet.**                    Page 4 of 8

## *Part II: PATERNITY DNA STATISTICS*

For the purposes of consistency among reported statistical values, use the ethnicity listed for the alleged parent and choose one of the following population databases for all statistical calculations in this test:

1. **FBI Popstats:** If FBI Popstats is already available in your laboratory then you may select that option, otherwise use the population database below.

2. **NIST-STRBASE** is a publicly available U.S. population dataset at STRBASE on the following NIST web site : http://www.cstl.nist.gov/strbase/NISTpop.htm#Autosomal

a. On the NIST web site, select the hyperlink labeled "Allele frequencies from autosomal STRs as Excel file" under the title "NIST 1036 U.S. Population Dataset".

3. If you are unable to use one of the suggested population databases, report the population database used in the blank provided next to the "Other Pop. Database" option. Due to the tendency for allele frequencies to vary amongst different databases, no consensus value will be determined for this option. When reporting a population database name, please refrain from using terms that would allude to a laboratory specific name or location; general terms such as "local/state database" or "laboratory specific database" are preferred.

1) Choose a Population Database:

☐ **FBI Popstats Pop. Database**          ☐ **NIST STRBASE Pop. Database**

**Other Pop. Database:** _____

2) Record the Combined Paternity Index value: _____

3) Record the Probability of Paternity: _____

4) Based on DNA results, select your response from the following options.  If the wording differs from the normal wording in your reports, adapt these conclusions as best as you can and use your preferred wording in your additional comments.

☐  The Alleged parent (Item 3) could not be excluded as the biological parent of the child (Item 2).

☐  The Alleged parent (Item 3) is excluded as a possible biological parent of the child (Item 2).

☐  Inconclusive as to whether the Alleged parent (Item 3) could be the biological parent of the child (Item 2). (Please document the reason in the Additional Comments section of this data sheet.)

**Please return all pages of this data sheet.**          Page 5 of 8

## *Part III: KINSHIP DNA STATISTICS (NON-PARENTAGE)*

To be completed if applicable to your laboratory.

The two DNA profiles below are presented as a potential Caucasian Sibling relationship. Compare these profiles to answer the questions using the same population database used in previous sections of the data sheet, given the ethnicity listed above for this kinship scenario.

| Profile | D1S1656 | D2S1338 | D2S441 | D3S1358 | D5S818 | D7S820 |
|---------|---------|---------|--------|---------|--------|--------|
| Brother | 14,17.3 | 16,26 | 11,12 | 15,18 | 11,11 | 9,12 |
| Sister | 14,17.3 | 16,17 | 12,14 | 17,18 | 11,12 | 8,9 |

| Profile | D8S1179 | D10S1248 | D12S391 | D13S317 | D16S539 | D18S51 |
|---------|---------|----------|---------|---------|---------|--------|
| Brother | 14,15 | 14,16 | 19,21 | 11,13 | 9,10 | 12,20 |
| Sister | 14,16 | 15,16 | 21,21 | 8,13 | 8,10 | 14,18 |

| Profile | D19S433 | D21S11 | D22S1045 | Amelogenin | CSF1PO | FGA |
|---------|---------|--------|----------|------------|--------|-----|
| Brother | 12,12 | 28,30 | 11,16 | X,Y | 11,13 | 21,28 |
| Sister | 12,14 | 27,31.2 | 11,16 | X,X | 10,12 | 25,28 |

| Profile | PentaD | PentaE | SE33 | TH01 | TPOX | vWA |
|---------|--------|--------|------|------|------|-----|
| Brother | 9,15 | 5,10 | 18,20 | 6,9.3 | 8,11 | 18,18 |
| Sister | 9,13 | 10,10 | 18,20 | 8,8 | 8,11 | 16,18 |

1) Evaluate the profiles above and record the kinship index. _____

2) Is the claim of a Sibling relationship supported by the genetic evidence?

_____

3) Use the space provided to document any additional statistical results and relationship conclusions.

_____

_____

_____

_____

_____

**Please return all pages of this data sheet.**

## _Part IV: ADDITIONAL COMMENTS_

Comments regarding any part of this Parentage Test.

_Any interpretations based on the results obtained should be reported in the Paternity DNA Statistics designated section._

_____

_____

_____

_____

_____

_____

_____

_____

**Please return all pages of this data sheet.**

Collaborative Testing Services ~ Forensic Testing Program

# RELEASE OF DATA TO ACCREDITATION BODIES

The following Accreditation Releases will apply only to:

Participant Code: WebCode:

for Test No. **16-5871**: **DNA Parentage**

This release page must be completed and received by ___July 11, 2016___ to have this participant's submitted data included in the reports forwarded to the respective Accreditation Bodies.

Have the laboratory's designated individual complete the following steps
**only if your laboratory is accredited in this testing/calibration discipline**
by one or more of the following Accreditation Bodies.

---

### Step 1: Provide the applicable Accreditation Certificate Number(s) for your laboratory

**ASCLD/LAB** Certificate No. _____

**ANAB** Certificate No. _____

**A2LA** Certificate No. _____

### Step 2: Complete the Laboratory Identifying Information in its entirety

Signature and Title _____

Laboratory Name _____

Location (City/State) _____

---

## Accreditation Release

**Return Instructions**

*Please submit the completed Accreditation Release at the same time as your full data sheet. See Data Sheet Return Instructions on the previous page.*

*Questions?  Contact us 8 am-4:30 pm EST*
Telephone: +1-571-434-1925
email: forensics@cts-interlab.com

**Please return all pages of this data sheet.**