Collaborative Testing Services, Inc
FORENSIC TESTING PROGRAM

DNA Parentage
Test No. 17-5872 Summary Report

This proficiency test was sent to 42 participants. Each participant received a sample pack consisting of the standard paternity trio, collected from a mother, a daughter, and the potential father. Participants were requested to analyze the samples using their existing protocols. Data were returned from 42 participants (100% response rate) and are compiled into the following tables:

This report contains the data received from the participants in this test. Since these participants are located in many countries around the world, and it is their option how the samples are to be used (e.g., training exercise, known or blind proficiency testing, research and development of new techniques, etc.), the results compiled in the Summary Report are not intended to be an overview of the quality of work performed in the profession and cannot be interpreted as such. The Summary Comments are included for the benefit of participants to assist with maintaining or enhancing the quality of their results. These comments are not intended to reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

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, a 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 grandparent/grandchild 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 μl) was blood from a female (mother) donor, Item 2 (75 μl) was blood from a female (daughter) donor, and Item 3 (75 μl) was blood from a male donor who was not the biological father of the Item 2 female. The different Items were prepared at separate times and were packaged once they were thoroughly dried. Completed sample sets were stored at -20°C until shipment on August 7, 2017.

SAMPLE SET ASSEMBLY: For each sample set, all three Items (1-3) in their separate envelopes were placed in a pre-labeled sample pack envelope and sealed. The 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 grandparent/grandchild relationship.

VERIFICATION: Laboratories that conducted pre-distribution analysis of the samples reported consistent results and associations.

Amelogenin and STR Results

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

Item	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	
1	12,15.3	16,24	11,14	14,17	*	11,12
	*	10,11	10,11	*	13,14	17,22
	8,12	9,11	*	13,18	13,13.2	*
	29,30	15,16	X	10,12	22	10,13
	12,16	24.2,30.2	6,8	10,11	16,18	
2	12,15.3	21,24	10,11	14,18	*	10,12
	*	8,10	11,13	*	13,14	17,19
	11,12	9,13	*	13,15	13	*
	29,30	15,16	X	10,11	22,23	13
	11,12	22.2,30.2	7,8	8,10	15,16	
3	11,15	16,17	11	16	*	12,13
	*	11	15,16	*	12,15	17,19
	8,11	11,12	*	13,16	13,15	*
	27,29	15,16	X,Y	10,12	20,23	11,13
	8,17	27.2	9	8	16,17	

YSTR Results

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

| Item | DYF387S1 | DYS19 | DYS385 | DYS389-I | DYS389-II | DYS390 | DYS391 | DYS392 | DYS393 | DYS437 | |
| | DYS438 | DYS439 | DYS448 | DYS449 | DYS456 | DYS458 | DYS460 | DYS481 | DYS505 | DYS518 | |
	DYS522	DYS533	DYS549	DYS570	DYS576	DYS612	DYS627	DYS635	DYS643	YGATAH4	Y Indel
3	*	14	11,13	13	29	24	11	13	13	14	
	12	12	18	*	15	17	*	*	*	*	
	*	*	*	17	19	*	*	23	*	11	*

Paternity Indices

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

Item - Database	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	
3	*	*	*	*	*	*
NIST	*	*	*	*	*	2.6511
STRBASE	2.2914	*	*	*	2.2472	*
	1.0397	1.2897	*	*	4.1391	*
	*	*	*	2.061	*	

* Results were not received from a minimum of 10 participants for the loci indicated.

Summary Comments

The 17-5872 DNA Parentage test was designed to allow participants to assess their proficiency in the analysis and interpretation of a standard trio of blood samples 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 who is not the biological father of the Item 2 female. Participants were requested to analyze the samples and provide allelic and statistical results as well as relationship conclusions. Sample sets also included a kinship exercise 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).

DNA Analysis:
All 42 participants who returned data reported results for STRs for all three items. The individual profiles for Item 1 and 2 were concordant across all participants. For Item 3, one participant reported a discordant allele. At the D21S11 locus, this participant recorded an allele call of 27,28,29 whereas the consensus at this locus was 27,29.

Thirteen participants reported full YSTR results for Item 3. Of the participants reporting full YSTR results, the individual profile for Item 3 was concordant. In addition, all 42 participants reported data for the DYS391 locus. The results were concordant with the exception of one participant who reported an 11,11 whereas the consensus was 11. This same individual also reported a 2,2 call for the YIndel.

Paternity DNA Statistics:
Of the 42 participants who returned data, 8 individuals provided a combined paternity index calculation. The remaining laboratories did not report a combined paternity index calculation or reported a value of 0. All 42 labs reported that Item 3 was excluded as the potential father of Item 2.

Kinship DNA Statistics
There were 25 participants who responded for the kinship exercise. Twenty-two reported that the claim of the African American Grandparent/Grandchild relationship was supported. Two participants reported a result of "Inconclusive" and one participant reported "No, Inconclusive".

STR Amplification Kit(s) & Results

TABLE 1

Webcode / Item	Amplification Kits					
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 1 - STR Results

Webcode / Item	Amplification Kits					
27GCLN	GlobalFiler™					
	12,15.3	16,24	11,14	14,17		11,12
1		10,11	10,11		13,14	17,22
	8,12	9,11		13,18	13,13.2	
	29,30	15,16	X,X	10,12	22,22	
		24.2,30.2	6,8	10,11	16,18	
2HAZF3	PowerPlex® 16 ESI, Fusion 6C					
	12,15.3	16,24	11,14	14,17		11,12
1		10,11	10,11		13,14	17,22
	8,12	9,11		13,18	13,13.2	
	29,30	15,16	X,X	10,12	22,22	10,13
	12,16	24.2,30.2	6,8	10,11	16,18	
3PM9G4	NGM Select					
	12,15.3	16,24	11,14	14,17		
1			10,11		13,14	17,22
		9,11		13,18	13,13.2	
	29,30	15,16	X,X		22,22	
		24.2,30.2	6,8		16,18	
3WLFMW	GlobalFiler™					
		16,24		14,17		11,12
1		10,11	10,11			
	8,12	9,11		13,18	13,13.2	
	29,30		X	10,12	22	
			6,8	10,11	16,18	
4CU8D3	GlobalFiler™					
	12,15.3	16,24	11,14	14,17		11,12
1		10,11	10,11		13,14	17,22
	8,12	9,11		13,18	13,13.2	
	29,30	15,16	X,X	10,12	22,22	
		24.2,30.2	6,8	10,11	16,18	

TABLE 1

Webcode	Amplification Kits					
Item	**D1S1656**	**D2S1338**	**D2S441**	**D3S1358**	**D4S2408**	**D5S818**
	D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
	D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
	Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	

Item 1 - STR Results

62T4NY — Home Made Multiplex (Item 1)

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3		11,14	14,17		
		10,11		13,14	17,22
8,12*?	9,11		13,18		
29,30	15,16	X,X		22,22	
	24.2,30.2	6,8	10,11	16,18	

79BUPK — GlobalFiler™ (Item 1)

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	16,24	11,14	14,17		11,12
		10,11	10,11	13,14	17,22
8,12	9,11		13,18	13,13.2	
29,30	15,16	X,X	10,12	22,22	
	24.2,30.2	6,8	10,11	16,18	

8GXCGX — GlobalFiler™ casework (Item 1)

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	16,24	11,14	14,17		11,12
		10,11	10,11	13,14	17,22
8,12	9,11		13,18	13,13.2	
29,30	15,16	X,X	10,12	22,22	
	24.2,30.2	6,8	10,11	16,18	

8VHRKX — Identifiler® Plus, Penta D, Penta E (Item 1)

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	16,24		14,17		11,12
		10,11	10,11		
8,12	9,11		13,18	13,13.2	
29,30		X	10,12	22	10,13
12,16		6,8	10,11	16,18	

A7NLRR — PowerPlex® FUSION (Item 1)

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	16,24	11,14	14,17		11,12
		10,11	10,11	13,14	17,22
8,12	9,11		13,18	13,13.2	
29,30	15,16	X,X	10,12	22,22	10,13
12,16		6,8	10,11	16,18	

AZKH3T — Identifiler® Plus, PowerPlex® 21 (Item 1)

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	16,24		14,17		11,12
11,11	10,11	10,11			17,22
8,12	9,11		13,18	13,13.2	
29,30		X,X	10,12	22,22	10,13
12,16		6,8	10,11	16,18	

TABLE 1

Webcode	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
Item	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 1 - STR Results

BCVA6T — GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	12,15.3	16,24	11,14	14,17		11,12
1		10,11	10,11		13,14	17,22
	8,12	9,11		13,18	13,13.2	
	29,30	15,16	X	10,12	22	
		24.2,30.2	6,8	10,11	16,18	

CVCU3L — PowerPlex® Fusion System, NGM SElect

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	12,15.3	16,24	11,14	14,17		11,12
1		10,11	10,11		13,14	17,22
	8,12	9,11		13,18	13,13.2	
	29,30	15,16	X	10,12	22	10,13
	12,16	24.2,30.2	6,8	10,11	16,18	

DNZ86D — VeriFiler Express

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	12,15.3	16,24	11,14	14,17		11,12
1	11,11	10,11	10,11		13,14	17,22
	8,12	9,11		13,18	13,13.2	
	29,30	15,16	X,X	10,12	22,22	10,13
	12,16		6,8	10,11	16,18	

E639FQ — PowerPlex® Fusion

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	12,15.3	16,24	11,14	14,17		11,12
1		10,11	10,11		13,14	17,22
	8,12	9,11		13,18	13,13.2	
	29,30	15,16	X	10,12	22	10,13
	12,16		6,8	10,11	16,18	

EW7YWK — Identifiler® Plus, GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	12,15.3	16,24	11,14	14,17		11,12
1		10,11	10,11		13,14	17,22
	8,12	9,11		13,18	13,13.2	
	29,30	15,16	X	10,12	22	
		24.2,30.2	6,8	10,11	16,18	

F6Y73R — PowerPlex® 21

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	12,15.3	16,24		14,17		11,12
1		10,11	10,11			17,22
	8,12	9,11		13,18	13,13.2	
	29,30		X	10,12	22	10,13
	12,16		6,8	10,11	16,18	

TABLE 1

Webcode	Amplification Kits				
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
Item	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 1 - STR Results

FB3AVB — GlobalFiler™

D1S1656 / D6S1043 / D13S317 / D21S11 / Penta E	D2S1338 / D7S820 / D16S539 / D22S1045 / SE33	D2S441 / D8S1179 / D17S1301 / Amelogenin / TH01	D3S1358 / D9S1122 / D18S51 / CSF1PO / TPOX	D4S2408 / D10S1248 / D19S433 / FGA / vWA	D5S818 / D12S391 / D20S482 / Penta D
12,15.3	16,24	11,14	14,17		11,12
	10,11	10,11		13,14	17,22
8,12	9,11		13,18	13,13.2	
29,30	15,16	X,X	10,12	22,22	
	24.2,30.2	6,8	10,11	16,18	

G3KJUG — Identifiler® Direct

	16,24		14,17		11,12
	10,11	10,11			
8,12	9,11		13,18	13,13.2	
29,30		X,X	10,12	22,22	
		6,8	10,11	16,18	

GDND2M — PowerPlex® Fusion

12,15.3	16,24	11,14	14,17		11,12
	10,11	10,11		13,14	17,22
8,12	9,11		13,18	13,13.2	
29,30	15,16	X,X	10,12	22,22	10,13
12,16		6,8	10,11	16,18	

GK6PEN — Identifiler® Plus

	16,24		14,17		11,12
	10,11	10,11			
8,12	9,11		13,18	13,13.2	
29,30		X	10,12	22	
		6,8	10,11	16,18	

GLFRZM — Identifiler® Direct

-	16,24	-	14,17	-	11,12
-	10,11	10,11	-	-	-
8,12	9,11	-	13,18	13,13.2	-
29,30	-	X,X	10,12	22	-
-	-	6,8	10,11	16,18	

H2AJLN — Identifiler® + (Plus)

	16,24		14,17		11,12
	10,11	10,11			
8,12	9,11		13,18	13,13.2	
29,30		X,X	10,12	22,22	
		6,8	10,11	16,18	

TABLE 1

Webcode	Amplification Kits				
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
Item	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 1 - STR Results

HJ9T6K — Identifiler® DIRECT — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
-	16,24	-	14,17	-	11,12
D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
-	10,11	10,11	-	-	-
D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
8,12	9,11	-	13,18	13,13.2	-
D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
29,30	-	X,X	10,12	22	-
Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	
-	-	6,8	10,11	16,18	

JF2V9H — Identifiler® DIRECT — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	16,24		14,17		11,12
D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	10,11	10,11			
D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
8,12	9,11		13,18	13,13.2	
D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
29,30		X,X	10,12	22,22	
Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	
		6,8	10,11	16,18	

K2H8YK — Identifiler® Direct — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
-	16,24	-	14,17	-	11,12
D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
-	10,11	10,11	-	-	-
D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
8,12	9,11	-	13,18	13,13.2	-
D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
29,30	-	X,X	10,12	22	-
Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	
-	-	6,8	10,11	16,18	

KU2WLJ — Identifiler® Direct — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
-	16,24	-	14,17	-	11,12
D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
-	10,11	10,11	-	-	-
D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
8,12	9,11	-	13,18	13,13.2	-
D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
29,30	-	X,X	10,12	22	-
Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	
-	-	6,8	10,11	16,18	

KWP7X7 — GlobalFiler™ — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	16,24	11,14	14,17		11,12
D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	10,11	10,11		13,14	17,22
D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
8,12	9,11		13,18	13,13.2	
D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
29,30	15,16	X,X	10,12	22,22	
Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	
	24.2,30.2	6,8	10,11	16,18	

MBYVN4 — PowerPlex® 21 — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	16,24		14,17		11,12
D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
11,11	10,11	10,11			17,22
D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
8,12	9,11		13,18	13,13.2	
D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
29,30		X,X	10,12	22,22	10,13
Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	
12,16		6,8	10,11	16,18	

TABLE 1

Webcode	Amplification Kits				
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
Item	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 1 - STR Results

MXEFL4 — GlobalFiler™ Express — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	16,24	11,14	14,17		11,12
	10,11	10,11		13,14	17,22
8,12	9,11		13,18	13,13.2	
29,30	15,16	X	10,12	22	
	24.2,30.2	6,8	10,11	16,18	

N8GV83 — PowerPlex® Fusion 6C — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	16,24	11,14	14,17		11,12
	10,11	10,11		13,14	17,22
8,12	9,11		13,18	13,13.2	
29,30	15,16	X,X	10,12	22,22	10,13
12,16	24.2,30.2	6,8	10,11	16,18	

NTDRFG — Identifiler®, Identifiler Plus — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	16,24		14,17		11,12
	10,11	10,11			
8,12	9,11		13,18	13,13.2	
29,30		X,X	10,12	22,22	
		6,8	10,11	16,18	

P7EQ3D — PowerPlex® FUSION, PowerPlex ESX17 — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	16,24	11,14	14,17		11,12
	10,11	10,11		13,14	17,22
8,12	9,11		13,18	13,13.2	
29,30	15,16	X,X	10,12	22,22	10,13
12,16	24.2,30.2	6,8	10,11	16,18	

T3NKWE — NGM SElect — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	16,24	11,14	14,17		
		10,11		13,14	17,22
	9,11		13,18	13,13.2	
29,30	15,16	X,X		22,22	
	24.2,30.2	6,8		16,18	

TPYL8W — GlobalFiler™ — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	16,24	11,14	14,17		11,12
	10,11	10,11		13,14	17,22
8,12	9,11		13,18	13,13.2	
29,30	15,16	X,X	10,12	22,22	
	24.2,30.2	6,8	10,11	16,18	

TABLE 1

Webcode	Amplification Kits				
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
Item	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 1 - STR Results

U2MR34 — PowerPlex® Fusion 6C — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
Penta E	SE33	TH01	TPOX	vWA	
12,15.3	16,24	11,14	14,17		11,12
	10,11	10,11		13,14	17,22
8,12	9,11		13,18	13,13.2	
29,30	15,16	X,X	10,12	22,22	10,13
12,16	24.2,30.2	6,8	10,11	16,18	

UZD3D9 — GlobalFiler™ Express — Item 1

12,15.3	16,24	11,14	14,17		11,12
	10,11	10,11		13,14	17,22
8,12	9,11		13,18	13,13.2	
29,30	15,16	X	10,12	22	
	24.2,30.2	6,8	10,11	16,18	

VEUE7U — GlobalFiler™ — Item 1

12,15.3	16,24	11,14	14,17		11,12
	10,11	10,11		13,14	17,22
8,12	9,11		13,18	13,13.2	
29,30	15,16	X,X	10,12	22,22	
	24.2,30.2	6,8	10,11	16,18	

W6YYRA — GlobalFiler™ — Item 1

12,15.3	16,24	11,14	14,17		11,12
	10,11	10,11		13,14	17,22
8,12	9,11		13,18	13,13.2	
29,30	15,16	X,X	10,12	22,22	
	24.2,30.2	6,8	10,11	16,18	

Y9U6NR — PowerPlex® Fusion 5C — Item 1

12,15.3	16,24	11,14	14,17		11,12
	10,11	10,11		13,14	17,22
8,12	9,11		13,18	13,13.2	
29,30	15,16	X,X	10,12	22	10,13
12,16		6,8	10,11	16,18	

YFVJ88 — NGMSe — Item 1

12,15.3	16,24	11,14	14,17		
		10,11		13,14	17,22
	9,11		13,18	13,13.2	
29,30	15,16	X,X		22,22	
	24.2,30.2	6,8		16,18	

TABLE 1

Webcode	Amplification Kits				
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
Item	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 1 - STR Results

ZJ9LU3	Identifiler® Plus					
		16,24		14,17		11,12
1		10,11	10,11			
	8,12	9,11		13,18	13,13.2	
	29,30		X,X	10,12	22,22	
			6,8	10,11	16,18	

TABLE 1

Webcode	Amplification Kits				
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
Item	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 2 - STR Results

27GCLN — GlobalFiler™ — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	8,10	11,13		13,14	17,19
D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
11,12	9,13		13,15	13,13	
D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
29,30	15,16	X,X	10,11	22,23	
Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	
	22.2,30.2	7,8	8,10	15,16	

2HAZF3 — PowerPlex® 16 ESI, Fusion 6C — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	8,10	11,13		13,14	17,19
D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
11,12	9,13		13,15	13,13	
D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
29,30	15,16	X,X	10,11	22,23	13,13
Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	
11,12	22.2,30.2	7,8	8,10	15,16	

3PM9G4 — NGM Select — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		
D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
		11,13		13,14	17,19
D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
	9,13		13,15	13,13	
D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
29,30	15,16	X,X		22,23	
Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	
	22.2,30.2	7,8		15,16	

3WLFMW — GlobalFiler™ — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	21,24		14,18		10,12
D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	8,10	11,13			
D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
11,12	9,13		13,15	13	
D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
29,30		X	10,11	22,23	
Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	
		7,8	8,10	15,16	

4CU8D3 — GlobalFiler™ — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	8,10	11,13		13,14	17,19
D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
11,12	9,13		13,15	13,13	
D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
29,30	15,16	X,X	10,11	22,23	
Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	
	22.2,30.2	7,8	8,10	15,16	

62T4NY — Home Made Multiplex — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3		10,11	14,18		
D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
		11,13		13,14	17,19
D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
	9,13		13,15		
D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
29,30	15,16	X,X		22,23	
Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	
	22.2,30.2	7,8	8,10	15,16	

TABLE 1

Webcode	Amplification Kits				
Item	**D1S1656**	**D2S1338**	**D2S441**	**D3S1358**	**D4S2408**	**D5S818**
	D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
	D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
	Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	

Item 2 - STR Results

79BUPK — GlobalFiler™ — Item 2

D1S1656 / D6S1043 / D13S317 / D21S11 / Penta E	D2S1338 / D7S820 / D16S539 / D22S1045 / SE33	D2S441 / D8S1179 / D17S1301 / Amelogenin / TH01	D3S1358 / D9S1122 / D18S51 / CSF1PO / TPOX	D4S2408 / D10S1248 / D19S433 / FGA / vWA	D5S818 / D12S391 / D20S482 / Penta D
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13,13	
29,30	15,16	X,X	10,11	22,23	
	22.2,30.2	7,8	8,10	15,16	

8GXCGX — GlobalFiler™ casework — Item 2

D1S1656 / D6S1043 / D13S317 / D21S11 / Penta E	D2S1338 / D7S820 / D16S539 / D22S1045 / SE33	D2S441 / D8S1179 / D17S1301 / Amelogenin / TH01	D3S1358 / D9S1122 / D18S51 / CSF1PO / TPOX	D4S2408 / D10S1248 / D19S433 / FGA / vWA	D5S818 / D12S391 / D20S482 / Penta D
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13,13	
29,30	15,16	X,X	10,11	22,23	
	22.2,30.2	7,8	8,10	15,16	

8VHRKX — Identifiler® Plus — Item 2

D1S1656 / D6S1043 / D13S317 / D21S11 / Penta E	D2S1338 / D7S820 / D16S539 / D22S1045 / SE33	D2S441 / D8S1179 / D17S1301 / Amelogenin / TH01	D3S1358 / D9S1122 / D18S51 / CSF1PO / TPOX	D4S2408 / D10S1248 / D19S433 / FGA / vWA	D5S818 / D12S391 / D20S482 / Penta D
	21,24		14,18		10,12
	8,10	11,13			
11,12	9,13		13,15	13	
29,30		X	10,11	22,23	13
11,12		7,8	8,10	15,16	

A7NLRR — PowerPlex® FUSION — Item 2

D1S1656 / D6S1043 / D13S317 / D21S11 / Penta E	D2S1338 / D7S820 / D16S539 / D22S1045 / SE33	D2S441 / D8S1179 / D17S1301 / Amelogenin / TH01	D3S1358 / D9S1122 / D18S51 / CSF1PO / TPOX	D4S2408 / D10S1248 / D19S433 / FGA / vWA	D5S818 / D12S391 / D20S482 / Penta D
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13,13	
29,30	15,16	X,X	10,11	22,23	13,13
11,12		7,8	8,10	15,16	

AZKH3T — Identifiler® Plus, PowerPlex® 21 — Item 2

D1S1656 / D6S1043 / D13S317 / D21S11 / Penta E	D2S1338 / D7S820 / D16S539 / D22S1045 / SE33	D2S441 / D8S1179 / D17S1301 / Amelogenin / TH01	D3S1358 / D9S1122 / D18S51 / CSF1PO / TPOX	D4S2408 / D10S1248 / D19S433 / FGA / vWA	D5S818 / D12S391 / D20S482 / Penta D
12,15.3	21,24		14,18		10,12
11,20	8,10	11,13			17,19
11,12	9,13		13,15	13,13	
29,30		X,X	10,11	22,23	13,13
11,12		7,8	8,10	15,16	

BCVA6T — GlobalFiler™ — Item 2

D1S1656 / D6S1043 / D13S317 / D21S11 / Penta E	D2S1338 / D7S820 / D16S539 / D22S1045 / SE33	D2S441 / D8S1179 / D17S1301 / Amelogenin / TH01	D3S1358 / D9S1122 / D18S51 / CSF1PO / TPOX	D4S2408 / D10S1248 / D19S433 / FGA / vWA	D5S818 / D12S391 / D20S482 / Penta D
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13	
29,30	15,16	X	10,11	22,23	
	22.2,30.2	7,8	8,10	15,16	

TABLE 1

Webcode	Amplification Kits				
Item	**D1S1656**	**D2S1338**	**D2S441**	**D3S1358**	**D4S2408**	**D5S818**
	D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
	D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
	Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	

Item 2 - STR Results

CVCU3L — PowerPlex® Fusion System, NGM SElect — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13	
29,30	15,16	X	10,11	22,23	13
11,12	22.2,30.2	7,8	8,10	15,16	

DNZ86D — VeriFiler Express — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
11,20	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13,13	
29,30	15,16	X,X	10,11	22,23	13,13
11,12		7,8	8,10	15,16	

E639FQ — PowerPlex® Fusion — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13	
29,30	15,16	X	10,11	22,23	13
11,12		7,8	8,10	15,16	

EW7YWK — Identifiler® Plus, GlobalFiler™ — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13	
29,30	15,16	X	10,11	22,23	
	22.2,30.2	7,8	8,10	15,16	

F6Y73R — PowerPlex® 21 — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24		14,18		10,12
	8,10	11,13			17,19
11,12	9,13		13,15	13	
29,30		X	10,11	22,23	13
11,12		7,8	8,10	15,16	

FB3AVB — GlobalFiler™ — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13,13	
29,30	15,16	X,X	10,11	22,23	
	22.2,30.2	7,8	8,10	15,16	

TABLE 1

Webcode	Amplification Kits				
Item	**D1S1656**	**D2S1338**	**D2S441**	**D3S1358**	**D4S2408**	**D5S818**
	D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
	D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
	Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	

Item 2 - STR Results

G3KJUG — Identifiler® Direct — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	21,24		14,18		10,12
	8,10	11,13			
11,12	9,13		13,15	13,13	
29,30		X,X	10,11	22,23	
		7,8	8,10	15,16	

GDND2M — PowerPlex® Fusion — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13,13	
29,30	15,16	X,X	10,11	22,23	13,13
11,12		7,8	8,10	15,16	

GK6PEN — Identifiler® Plus — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	21,24		14,18		10,12
	8,10	11,13			
11,12	9,13		13,15	13	
29,30		X	10,11	22,23	
		7,8	8,10	15,16	

GLFRZM — Identifiler® Direct — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
-	21,24	-	14,18	-	10,12
-	8,10	11,13	-	-	-
11,12	9,13	-	13,15	13	-
29,30	-	X,X	10,11	22,23	-
-	-	7,8	8,10	15,16	

H2AJLN — Identifiler® + (Plus) — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	21,24		14,18		10,12
	8,10	11,13			
11,12	9,13		13,15	13,13	
29,30		X,X	10,11	22,23	
		7,8	8,10	15,16	

HJ9T6K — Identifiler® DIRECT — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
-	21,24	-	14,18	-	10,12
-	8,10	11,13	-	-	-
11,12	9,13	-	13,15	13	-
29,30	-	X,X	10,11	22,23	-
-	-	7,8	8,10	15,16	

TABLE 1

Webcode	Amplification Kits				
Item	**D1S1656**	**D2S1338**	**D2S441**	**D3S1358**	**D4S2408**	**D5S818**
	D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
	D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
	Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	

Item 2 - STR Results

JF2V9H — Identifiler® DIRECT

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	21,24		14,18		10,12
	8,10	11,13			
11,12	9,13		13,15	13,13	
29,30		X,X	10,11	22,23	
		7,8	8,10	15,16	

K2H8YK — Identifiler® Direct

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
-	21,24	-	14,18	-	10,12
-	8,10	11,13	-	-	-
11,12	9,13	-	13,15	13	-
29,30	-	X,X	10,11	22,23	-
-	-	7,8	8,10	15,16	

KU2WLJ — Identifiler® Direct

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
-	21,24	-	14,18	-	10,12
-	8,10	11,13	-	-	-
11,12	9,13	-	13,15	13	-
29,30	-	X,X	10,11	22,23	-
-	-	7,8	8,10	15,16	

KWP7X7 — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13,13	
29,30	15,16	X,X	10,11	22,23	
	22.2,30.2	7,8	8,10	15,16	

MBYVN4 — PowerPlex® 21

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24		14,18		10,12
11,20	8,10	11,13			17,19
11,12	9,13		13,15	13,13	
29,30		X,X	10,11	22,23	13,13
11,12		7,8	8,10	15,16	

MXEFL4 — GlobalFiler™ Express

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13	
29,30	15,16	X	10,11	22,23	
	22.2,30.2	7,8	8,10	15,16	

TABLE 1

Webcode	Amplification Kits				
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
Item	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 2 - STR Results

N8GV83 — PowerPlex® Fusion 6C

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13,13	
29,30	15,16	X,X	10,11	22,23	13,13
11,12	22.2,30.2	7,8	8,10	15,16	

Item: 2

NTDRFG — Identifiler®, Identifiler Plus

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	21,24		14,18		10,12
	8,10	11,13			
11,12	9,13		13,15	13,13	
29,30		X,X	10,11	22,23	
		7,8	8,10	15,16	

Item: 2

P7EQ3D — PowerPlex® FUSION, PowerPlex ESX17

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13,13	
29,30	15,16	X,X	10,11	22,23	13,13
11,12	22.2,30.2	7,8	8,10	15,16	

Item: 2

T3NKWE — NGM SElect

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		
		11,13		13,14	17,19
	9,13		13,15	13,13	
29,30	15,16	X,X		22,23	
	22.2,30.2	7,8		15,16	

Item: 2

TPYL8W — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13,13	
29,30	15,16	X,X	10,11	22,23	
	22.2,30.2	7,8	8,10	15,16	

Item: 2

U2MR34 — PowerPlex® Fusion 6C

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13,13	
29,30	15,16	X,X	10,11	22,23	13,13
11,12	22.2,30.2	7,8	8,10	15,16	

Item: 2

TABLE 1

Webcode	Amplification Kits				
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
Item	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 2 - STR Results

UZD3D9 — GlobalFiler™ Express

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13	
29,30	15,16	X	10,11	22,23	
	22.2,30.2	7,8	8,10	15,16	

Item: 2

VEUE7U — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13,13	
29,30	15,16	X,X	10,11	22,23	
	22.2,30.2	7,8	8,10	15,16	

Item: 2

W6YYRA — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13,13	
29,30	15,16	X,X	10,11	22,23	
	22.2,30.2	7,8	8,10	15,16	

Item: 2

Y9U6NR — PowerPlex® Fusion 5C

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		10,12
	8,10	11,13		13,14	17,19
11,12	9,13		13,15	13	
29,30	15,16	X,X	10,11	22,23	13
11,12		7,8	8,10	15,16	

Item: 2

YFVJ88 — NGMSe

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
12,15.3	21,24	10,11	14,18		
		11,13		13,14	17,19
	9,13		13,15	13,13	
29,30	15,16	X,X		22,23	
	22.2,30.2	7,8		15,16	

Item: 2

ZJ9LU3 — Identifiler® Plus

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	21,24		14,18		10,12
	8,10	11,13			
11,12	9,13		13,15	13,13	
29,30		X,X	10,11	22,23	
		7,8	8,10	15,16	

Item: 2

TABLE 1

Webcode / Item	Amplification Kits					
	D1S1656	**D2S1338**	**D2S441**	**D3S1358**	**D4S2408**	**D5S818**
	D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
	D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
	Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	

Item 3 - STR Results

27GCLN — GlobalFiler™ (Item 3)

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	11,15	16,17	11,11	16,16		12,13
		11,11	15,16		12,15	17,19
	8,11	11,12		13,16	13,15	
	27,29	15,16	X,Y	10,12	20,23	
		27.2,27.2	9,9	8,8	16,17	

2HAZF3 — PowerPlex® 16 ESI, Fusion 6C (Item 3)

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	11,15	16,17	11,11	16,16		12,13
		11,11	15,16		12,15	17,19
	8,11	11,12		13,16	13,15	
	27,29	15,16	X,Y	10,12	20,23	11,13
	8,17	27.2,27.2	9,9	8,8	16,17	

3PM9G4 — NGM Select (Item 3)

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	11,15	16,17	11,11	16,16		
			15,16		12,15	17,19
		11,12		13,16	13,15	
	27,29	15,16	X,Y		20,23	
		27.2,27.2	9,9		16,17	

3WLFMW — GlobalFiler™ (Item 3)

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
		16,17		16		12,13
		11	15,16			
	8,11	11,12		13,16	13,15	
	27,29		X,Y	10,12	20,23	
			9	8	16,17	

4CU8D3 — GlobalFiler™ (Item 3)

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	11,15	16,17	11,11	16,16		12,13
		11,11	15,16		12,15	17,19
	8,11	11,12		13,16	13,15	
	27,29	15,16	X,Y	10,12	20,23	
		27.2,27.2	9,9	8,8	16,17	

62T4NY — Home Made Multiplex (Item 3)

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	11,15		11,11	16,16		
			15,16		12,15	17,19
		11,12		13,16		
	27,29	15,16	X,Y		20,23	
		27.2,27.2	9,9	8,8	16,17	

TABLE 1

Webcode / Item	Amplification Kits					
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 3 - STR Results

79BUPK — GlobalFiler™ — 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11,11	16,16		12,13
	11,11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	
	27.2,27.2	9,9	8,8	16,17	

8GXCGX — GlobalFiler™ casework — 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11,11	16,16		12,13
	11,11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	
	27.2,27.2	9,9	8,8	16,17	

8VHRKX — Identifiler® Plus — 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	16,17		16		12,13
	11	15,16			
8,11	11,12		13,16	13,15	
27,29		X,Y	10,12	20,23	11,13
8,17		9	8	16,17	

A7NLRR — PowerPlex® FUSION — 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11,11	16,16		12,13
	11,11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	11,13
8,17		9,9	8,8	16,17	

AZKH3T — Identifiler® Plus, PowerPlex® 21 — 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17		16,16		12,13
12,14	11,11	15,16			17,19
8,11	11,12		13,16	13,15	
27,29		X,Y	10,12	20,23	11,13
8,17		9,9	8,8	16,17	

BCVA6T — GlobalFiler™ — 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11	16		12,13
	11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	
	27.2	9	8	16,17	

TABLE 1

Webcode	Amplification Kits				
Item	**D1S1656**	**D2S1338**	**D2S441**	**D3S1358**	**D4S2408**	**D5S818**
	D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
	D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
	Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	

Item 3 - STR Results

CVCU3L — PowerPlex® Fusion System, NGM SElect

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11	16		12,13
	11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	11,13
8,17	27.2	9	8	16,17	

DNZ86D — VeriFiler Express

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11,11	16,16		12,13
12,14	11,11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,28,29	15,16	X,Y	10,12	20,23	11,13
8,17		9,9	8,8	16,17	

E639FQ — PowerPlex® Fusion

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11	16		12,13
	11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	11,13
8,17		9	8	16,17	

EW7YWK — Identifiler® Plus, GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11	16		12,13
	11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	
	27.2	9	8	16,17	

F6Y73R — PowerPlex® 21

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17		16		12,13
	11	15,16			17,19
8,11	11,12		13,16	13,15	
27,29		X,Y	10,12	20,23	11,13
8,17		9	8	16,17	

FB3AVB — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11,11	16,16		12,13
	11,11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	
	27.2,27.2	9,9	8,8	16,17	

TABLE 1

Webcode	Amplification Kits				
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
Item	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 3 - STR Results

G3KJUG — Identifiler® Direct

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	16,17		16,16		12,13
	11,11	15,16			
8,11	11,12		13,16	13,15	
27,29		X,Y	10,12	20,23	
		9,9	8,8	16,17	

Item: 3

GDND2M — PowerPlex® Fusion

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11,11	16,16		12,13
	11,11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	11,13
8,17		9,9	8,8	16,17	

Item: 3

GK6PEN — Identifiler® Plus

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	16,17		16		12,13
	11	15,16			
8,11	11,12		13,16	13,15	
27,29		X,Y	10,12	20,23	
		9	8	16,17	

Item: 3

GLFRZM — Identifiler® Direct

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
-	16,17	-	16	-	12,13
-	11	15,16	-	-	-
8,11	11,12	-	13,16	13,15	-
27,29	-	X,Y	10,12	20,23	-
-	-	9	8	16,17	

Item: 3

H2AJLN — Identifiler® + (Plus)

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	16,17		16,16		12,13
	11,11	15,16			
8,11	11,12		13,16	13,15	
27,29		X,Y	10,12	20,23	
		9,9	8,8	16,17	

Item: 3

HJ9T6K — Identifiler® DIRECT

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
-	16,17	-	16	-	12,13
-	11	15,16	-	-	-
8,11	11,12	-	13,16	13,15	-
27,29	-	X,Y	10,12	20,23	-
-	-	9	8	16,17	

Item: 3

TABLE 1

Webcode / Item	Amplification Kits					
	D1S1656	**D2S1338**	**D2S441**	**D3S1358**	**D4S2408**	**D5S818**
	D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
	D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
	Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	

Item 3 - STR Results

JF2V9H — Identifiler® DIRECT — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	16,17		16,16		12,13
	11,11	15,16			
8,11	11,12		13,16	13,15	
27,29		X,Y	10,12	20,23	
		9,9	8,8	16,17	

K2H8YK — Identifiler® Direct — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
-	16,17	-	16	-	12,13
-	11	15,16	-	-	-
8,11	11,12	-	13,16	13,15	-
27,29	-	X,Y	10,12	20,23	-
-	-	9	8	16,17	

KU2WLJ — Identifiler® Direct — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
-	16,17	-	16	-	12,13
-	11	15,16	-	-	-
8,11	11,12	-	13,16	13,15	-
27,29	-	X,Y	10,12	20,23	-
-	-	9	8	16,17	

KWP7X7 — GlobalFiler™ — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11,11	16,16		12,13
	11,11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	
	27.2,27.2	9,9	8,8	16,17	

MBYVN4 — PowerPlex® 21 — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17		16,16		12,13
12,14	11,11	15,16			17,19
8,11	11,12		13,16	13,15	
27,29		X,Y	10,12	20,23	11,13
8,17		9,9	8,8	16,17	

MXEFL4 — GlobalFiler™ — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11	16		12,13
	11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	
	27.2	9	8	16,17	

TABLE 1

Webcode / Item	Amplification Kits					
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 3 - STR Results

N8GV83 — PowerPlex® Fusion 6C (Item 3)

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	11,15	16,17	11,11	16,16		12,13
		11,11	15,16		12,15	17,19
	8,11	11,12		13,16	13,15	
	27,29	15,16	X,Y	10,12	20,23	11,13
	8,17	27.2,27.2	9,9	8,8	16,17	

NTDRFG — Identifiler®, Identifiler Plus (Item 3)

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
		16,17		16,16		12,13
		11,11	15,16			
	8,11	11,12		13,16	13,15	
	27,29		X,Y	10,12	20,23	
			9,9	8,8	16,17	

P7EQ3D — PowerPlex® FUSION, PowerPlex ESX17 (Item 3)

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	11,15	16,17	11,11	16,16		12,13
		11,11	15,16		12,15	17,19
	8,11	11,12		13,16	13,15	
	27,29	15,16	X,Y	10,12	20,23	11,13
	8,17	27.2,27.2	9,9	8,8	16,17	

T3NKWE — NGM SElect (Item 3)

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	11,15	16,17	11,11	16,16		
			15,16		12,15	17,19
		11,12		13,16	13,15	
	27,29	15,16	X,Y		20,23	
		27.2,27.2	9,9		16,17	

TPYL8W — GlobalFiler™ (Item 3)

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	11,15	16,17	11,11	16,16		12,13
		11,11	15,16		12,15	17,19
	8,11	11,12		13,16	13,15	
	27,29	15,16	X,Y	10,12	20,23	
		27.2,27.2	9,9	8,8	16,17	

U2MR34 — PowerPlex® FUSION 6C (Item 3)

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	11,15	16,17	11,11	16,16		12,13
		11,11	15,16		12,15	17,19
	8,11	11,12		13,16	13,15	
	27,29	15,16	X,Y	10,12	20,23	11,13
	8,17	27.2,27.2	9,9	8,8	16,17	

TABLE 1

Webcode	Amplification Kits				
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
Item	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 3 - STR Results

UZD3D9 — GlobalFiler™ Express — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11	16		12,13
	11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	
	27.2	9	8	16,17	

VEUE7U — GlobalFiler™ — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11,11	16,16		12,13
	11,11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	
	27.2,27.2	9,9	8,8	16,17	

W6YYRA — GlobalFiler™ — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11,11	16,16		12,13
	11,11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	
	27.2,27.2	9,9	8,8	16,17	

Y9U6NR — PowerPlex® Fusion 5C — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11	16		12,13
	11	15,16		12,15	17,19
8,11	11,12		13,16	13,15	
27,29	15,16	X,Y	10,12	20,23	11,13
8,17		9	8	16,17	

YFVJ88 — NGMSe — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
11,15	16,17	11,11	16,16		
		15,16		12,15	17,19
	11,12		13,16	13,15	
27,29	15,16	X,Y		20,23	
	27.2,27.2	9,9		16,17	

ZJ9LU3 — Identifiler® Plus — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	16,17		16,16		12,13
	11,11	15,16			
8,11	11,12		13,16	13,15	
27,29		X,Y	10,12	20,23	
		9,9	8,8	16,17	

Item 3 Paternity Index Results

TABLE 2

Webcode / Item	Population Database(s)					
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 3 - Paternity Index Results

27GCLN — NIST-STRBASE — Item 3

0	0	0	0		0
	0	0		0	2.6511
2.2915	0		0	2.2472	
1.0397	1.2897	0	0	4.1391	
	0	0	2.0610	0	

2HAZF3 — NIST-STRBASE — Item 3

0	0	0	0		0
	0	0		0	2.65
2.29	0		0	2.25	
1.04	1.29		0	4.14	3.46
0	0	0	2.06	0	

3PM9G4 — [Country] Caucasian Frequencies — Item 3

3WLFMW — Life Technologies Database — Item 3

	0.00		0.00		0.00
	0.00	0.00			
2.16	0.00		0.00	3.12	
0.99			0.00	4.20	
		0.00	2.01	0.00	

4CU8D3 — local/state database — Item 3

0	0	0	0		0
	0	0		0	4.2653
1.7164	0		0	1.9993	
1.0829	1.3841		0	2.9436	
	0	0	1.8813	0	

62T4NY — [Country] NIST-STRBASE — Item 3

TABLE 2

Webcode	Population Database(s)				
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
Item	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 3 - Paternity Index Results

8GXCGX [Country] pop. Database

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
3						2.0317
2.5342				2.8425	
1.0290	1.1581			3.7369	
		1.9384			

8VHRKX FBI PopStats Promega databases for Penta D and Penta E

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	0		0		0
3		0	0			
2.45	0		0	3.03	
0.929		1	0	3.51	2.77
0		0	1.8	0	

A7NLRR FBI PopStats FBI SEH

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
3						3.81
1.77				1.83	
1.03	1.28			3.50	2.48
		1.97			

AZKH3T NIST-STRBASE

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
0	0		0		0
3	0	0	0			2.651685
2.291262	0		0	2.247619	
1.039648			0	4.140351	3.455882
0		0	2.061135	0	

BCVA6T laboratory specific database

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
0.000	0.000	0.000	0.000		0.000
3		0.000	0.000		0.000	3.811
1.777	0.000		0.000	1.839	
1.031	1.283		0.000	3.506	
	0.000	0.000	1.977	0.000	

CVCU3L [Country] population

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
3						6,00
				2,52	
1,18	1,55			4,46	

TABLE 2

Webcode	Population Database(s)					
Item	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 3 - Paternity Index Results

E639FQ — NIST-STRBASE — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
					2.6511
2.2914				2.2471	
1.0397	1.2896			4.1390	3.4698
			2.0610		

EW7YWK — NIST-STRBASE — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
					2.65
2.29				2.25	
1.04	1.30			4.14	
			2.06		

F6Y73R — Promega — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
0	0		0		0
	0	0			2.6511
2.2915	0		0	2.2472	
1.0397			0	4.1391	3.4698
0		0	2.0610	0	

FB3AVB — [Country] Caucasian — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
ex	ex	ex	ex		ex
	ex	ex		ex	4.09
1.62	ex		ex	1.99	
1.12	1.40		ex	3.64	
	ex	ex	1.87	ex	

GDND2M — NIST-STRBASE — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
0	0	0	0		0
	0	0		0	3.35784
1.60798	0		0	2.02663	
1.32752	2.2459	1	0	2.92735	5.90517
0		0	2.71032	0	

GK6PEN — laboratory specific database — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
2.1645				3.1191	
0.9897				4.2016	
			2.0136		

TABLE 2

Webcode	Population Database(s)					
Item	**D1S1656**	**D2S1338**	**D2S441**	**D3S1358**	**D4S2408**	**D5S818**
	D6S1043	**D7S820**	**D8S1179**	**D9S1122**	**D10S1248**	**D12S391**
	D13S317	**D16S539**	**D17S1301**	**D18S51**	**D19S433**	**D20S482**
	D21S11	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**	**Penta D**
	Penta E	**SE33**	**TH01**	**TPOX**	**vWA**	

Item 3 - Paternity Index Results

GLFRZM — NIST-STRBASE — Item 3

	0.00100		0.00200		0.00100
	0.00200	0.00400			
2.29150	0.00400		0.00300	2.24720	
1.03970		-	0.00300	4.13910	
		0.00001	2.06100	0.00300	

HJ9T6K — NIST-STRBASE — Item 3

-	0.0010	-	0.0020	-	0.0010
-	0.0020	0.0040	-	-	-
2.2915	0.0040	-	0.0030	2.2472	-
1.0397	-	-	0.0030	4.1391	-
-	-	0.00001	2.0610	0.0030	

K2H8YK — NIST-STRBASE — Item 3

-	0.0010	-	0.0020	-	0.0010
-	0.0020	0.0040	-	-	-
2.2915	0.0040	-	0.0030	2.2472	-
1.0397	-	-	0.0030	4.1391	-
-	-	0.00001	2.0610	0.0030	

KU2WLJ — NIST-STRBASE — Item 3

-	0.0010	-	0.0020	-	0.0010
-	0.0020	0.0040	-	-	-
2.2915	0.0040	-	0.0030	2.2472	-
1.0397	-	-	0.0030	4.1391	-
-	-	0.00001	2.0610	0.0030	

KWP7X7 — NIST-STRBASE — Item 3

					2.6511
2.2915				2.2472	
1.0397	1.2897			4.1391	
			2.0610		

MXEFL4 — FBI PopStats — Item 3

					2.0695
2.5176				2.8249	
.94144	1.2591			3.6657	
			1.8018		

TABLE 2

Webcode Item	Population Database(s)				
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 3 - Paternity Index Results

N8GV83 — FBI PopStats

Item 3 (no values reported)

NTDRFG — Other (local)

Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	0		0		0
	0	0			
1.95	0		0	1.69	
1.38			0	2.37	
		0	2.63	0	

T3NKWE — [CTS removed reported database to protect the laboratory's anonymity]

Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
0	0	0	0		
		0		0	4,26
	0		0	1,97	
1,08	1,38			2,94	
		0	0		

TPYL8W — NIST-STRBASE

Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
0	0	0	0		0
	0	0		0	2.65
2.29	0		0	2.24	
1.03	1.28	0	0	4.13	
	0	0	2.06	0	

U2MR34 — NIST-STRBASE

Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
0	0	0	0		0
	0	0		0	2.6511
2.2915	0		0	2.2472	
1.0397	1.2897	1	0	4.1391	3.4554
0	0	0	2.0610	0	

VEUE7U — NIST-STRBASE

Item 3

D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
0	0	0	0		0
	0	0		0	2.65
2.29	0		0	2.24	
1.03	1.28	0	0	4.13	
	0	0	2.06	0	

TABLE 2

Webcode / Item	Population Database(s)					
	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
	Penta E	SE33	TH01	TPOX	vWA	

Item 3 - Paternity Index Results

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
YFVJ88 NIST-STRBASE						
3	4E-3	3.15E-3	9.9E-4	1.16E-3		
			3.66E-4		4E-4	2.65
		1.07E-3		8.9E-4	2.25	
	1.04	1.29			4.13	
		1.34E-3	6.75E-4		1.73E-3	
ZJ9LU3 NIST-STRBASE						
3		0		0		0
		0	0			
	2.12125	0		0	2.0	
	1.08528		-	0	3.68433	
			0	2.12121	0	

YSTR Amplification Kit(s) & Results

TABLE 3

Item 3 - YSTR Results

Webcode / Item	DYF387S1 / DYS438 / DYS522	DYS19 / DYS439 / DYS533	DYS385 / DYS448 / DYS549	DYS389_I / DYS449 / DYS570	DYS389_II / DYS456 / DYS576	DYS390 / DYS458 / DYS612	DYS391 / DYS460 / DYS627	DYS392 / DYS481 / DYS635	DYS393 / DYS505 / DYS643	DYS437 / DYS518 / YGATAH4	Y Indel
27GCLN 3 — GlobalFiler™							11				
											2
2HAZF3 3 — PowerPlex® Y 23		14	11,13	13	29	24	11	13	13	14	
	12	12	18		15	17		22			
	12	13	17	19				23	10	11	
79BUPK 3 — GlobalFiler™							11				
											2
8GXCGX 3 — GlobalFiler™							11,11				
											2,2
A7NLRR 3 — PowerPlex® Fusion							11				
AZKH3T 3 — Yfiler®		14	11,13	13	29	24	11	13	13	14	
	12	12	18		15	17					
								23		11	
BCVA6T 3 — GlobalFiler™							11				
											2
CVCU3L 3 — PowerPlex® Fusion							11				
E639FQ 3 — PowerPlex® Fusion							11				
EW7YWK 3 — GlobalFiler™							11				
											2

TABLE 3

Webcode / Item	Amplification Kit	DYF387S1 / DYS438 / DYS522	DYS19 / DYS439 / DYS533	DYS385 / DYS448 / DYS549	DYS389_I / DYS449 / DYS570	DYS389_II / DYS456 / DYS576	DYS390 / DYS458 / DYS612	DYS391 / DYS460 / DYS627	DYS392 / DYS481 / DYS635	DYS393 / DYS505 / DYS643	DYS437 / DYS518 / YGATAH4	Y Indel

Item 3 - YSTR Results

Webcode / Item	Amplification Kit	DYF387S1 / DYS438 / DYS522	DYS19 / DYS439 / DYS533	DYS385 / DYS448 / DYS549	DYS389_I / DYS449 / DYS570	DYS389_II / DYS456 / DYS576	DYS390 / DYS458 / DYS612	DYS391 / DYS460 / DYS627	DYS392 / DYS481 / DYS635	DYS393 / DYS505 / DYS643	DYS437 / DYS518 / YGATAH4	Y Indel
F6Y73R (3)	PowerPlex® Y 23		14	11,13	13	29	24	11	13	13	14	
		12	12	18		15	17		22			
		12	13	17	19				23	10	11	
FB3AVB (3)	GlobalFiler™							11				
												2
GDND2M (3)	PowerPlex® Y 23		14	11,13	13	29	24	11	13	13	14	
		12	12	18		15	17		22			
		12	13	17	19				23	10	11	
GLFRZM (3)	Yfiler®	-	14	11,13	13	29	24	11	13	13	14	
		12	12	18	-	15	17	-	-	-	-	
		-	-	-	-	-	-	-	23	-	11	-
HJ9T6K (3)	Yfiler®	-	14	11,13	13	29	24	11	13	13	14	
		12	12	18	-	15	17	-	-	-	-	
		-	-	-	-	-	-	-	23	-	11	-
K2H8YK (3)	Yfiler®	-	14	11,13	13	29	24	11	13	13	14	
		12	12	18	-	15	17	-	-	-	-	
		-	-	-	-	-	-	-	23	-	11	-
KU2WLJ (3)	Yfiler®	-	14	11,13	13	29	24	11	13	13	14	
		12	12	18	-	15	17	-	-	-	-	
		-	-	-	-	-	-	-	23	-	11	-
KWP7X7 (3)	GlobalFiler™							11				
												2
MXEFL4 (3)	Yfiler® Plus	35,37	14	11,13	13	29	24	11	13	13	14	
		12	12	18	30	15	17	11	22		38	
		12		17	19			22	23		11	2
N8GV83 (3)	PowerPlex® Fusion 6C							11				
				17	19							

TABLE 3

Webcode / Item	DYF387S1 DYS438 DYS522	DYS19 DYS439 DYS533	DYS385 DYS448 DYS549	DYS389_I DYS449 DYS570	DYS389_II DYS456 DYS576	DYS390 DYS458 DYS612	DYS391 DYS460 DYS627	DYS392 DYS481 DYS635	DYS393 DYS505 DYS643	DYS437 DYS518 YGATAH4	Y Indel
Amplification Kit											

Item 3 - YSTR Results

Webcode / Item	DYF387S1 / DYS438 / DYS522	DYS19 / DYS439 / DYS533	DYS385 / DYS448 / DYS549	DYS389_I / DYS449 / DYS570	DYS389_II / DYS456 / DYS576	DYS390 / DYS458 / DYS612	DYS391 / DYS460 / DYS627	DYS392 / DYS481 / DYS635	DYS393 / DYS505 / DYS643	DYS437 / DYS518 / YGATAH4	Y Indel
P7EQ3D — PowerPlex® Y 23 (Item 3)		14	11,13	13	29	24	11	13	13	14	
	12	12	18		15	17		22			
		12	13	17	19			23	10	11	
T3NKWE — Yfiler® Plus (Item 3)		14	11,13	13	29	24	11	13		14	
	12		18	31	15	17	11			38	
				17	19		22	23		11	
TPYL8W — GlobalFiler™ (Item 3)							11				
											2
U2MR34 — PowerPlex® Fusion 6C (Item 3)							11				
				17	19						
VEUE7U — GlobalFiler™ (Item 3)							11				
											2
Y9U6NR — Yfiler® (Item 3)		14	11,13	13	29	24	11	13	13	14	
	12	12	18		15	17					
								23		11	
ZJ9LU3 — Yfiler® (Item 3)		14	11,13	13	29	24	11	13	13	14	
	12	12	18		15	17					
								23		11	

Additional DNA & PI Results

TABLE 4

Locus	Webcode	Item 1	Item 2	Item 3	Item 3 Paternity Index
D6S1043	F6Y73R	11	11,20	12,14	0
F13A	F6Y73R	5,7	5,15	3.2,7	0
F13A01	U2MR34	5,7	5,15	3.2,7	0
F13B	F6Y73R	10	8,10	7,10	0
	U2MR34	10,10	8,10	7,10	0
FESFPS	F6Y73R	12	11,12	8,11	1.0776
	U2MR34	12,12	11,12	8,11	1.0776
LPL	F6Y73R	12	10,12	11,12	0
	U2MR34	12,12	10,12	11,12	0
PENTA C	F6Y73R	12,13	12	9,12	2.4582
	U2MR34	12,13	12,12	9,12	2.3844

Paternity DNA Statistics

TABLE 5

Webcode	Combined Paternity Index	Probability of Paternity	Population Database Used
27GCLN	0	0	NIST-STRBASE
2HAZF3	0	0	NIST-STRBASE
3PM9G4			[Country] Caucasian Frequencies
3WLFMW	0.00	0.00	Life Technologies Database
4CU8D3	0	0	local/state database
62T4NY	exclusion	exclusion	NIST-STRBASE[Country]
8GXCGX	126.3324	99.2146%	[Country] pop. Database
8VHRKX	0.00	0	FBI PopStatsPromega databases for Penta D and Penta E
A7NLRR	2.83E+2	99.65	FBI PopStatsFBI SEH
AZKH3T	0	0%	NIST-STRBASE
BCVA6T	0	0	laboratory specific database
CVCU3L	0.00	0.00%	[Country] population
DNZ86D	0	0	
E639FQ			NIST-STRBASE
EW7YWK	0	0	NIST-STRBASE
F6Y73R	0	0	Promega
FB3AVB	EXCLUSION	EXCLUSION	[Country] Caucasian
G3KJUG	Not applicable	Not applicable	
GDND2M	0	0	NIST-STRBASE
GK6PEN			laboratory specific database
GLFRZM	7.8922 E-28	0.0000%	NIST-STRBASE
H2AJLN	N/A	N/A	Local/State Database
HJ9T6K	7.8922E-28	0.0000%	NIST-STRBASE
K2H8YK	7.8922E-28	0.0000%	NIST-STRBASE
KU2WLJ	7.8922E-28	0.0000%	NIST-STRBASE
KWP7X7	N/A	N/A	NIST-STRBASE

TABLE 5

Webcode	Combined Paternity Index	Probability of Paternity	Population Database Used
MBYVN4	0	0%	
MXEFL4	0	0	FBI PopStats
N8GV83	N/A	N/A	FBI PopStats
NTDRFG	28.25	96.58%	Other (local)
T3NKWE	0	0	[CTS removed reported database to protect the laboratory's anonymity]
TPYL8W	0	0	NIST-STRBASE
U2MR34	0	0	NIST-STRBASE
VEUE7U	0	0	NIST-STRBASE
W6YYRA	n/a	n/a	
YFVJ88	1E-32	<<1%	NIST-STRBASE
ZJ9LU3	0	0	NIST-STRBASE

Paternity Conclusions
TABLE 6

Webcode	Conclusions	Webcode	Conclusions
27GCLN	Excluded	K2H8YK	Excluded
2HAZF3	Excluded	KU2WLJ	Excluded
3PM9G4	Excluded	KWP7X7	Excluded
3WLFMW	Excluded	MBYVN4	Excluded
4CU8D3	Excluded	MXEFL4	Excluded
62T4NY	Excluded	N8GV83	Excluded
79BUPK	Excluded	NTDRFG	Excluded
8GXCGX	Excluded	P7EQ3D	Excluded
8VHRKX	Excluded	T3NKWE	Excluded
A7NLRR	Excluded	TPYL8W	Excluded
AZKH3T	Excluded	U2MR34	Excluded
BCVA6T	Excluded	UZD3D9	Excluded
CVCU3L	Excluded	VEUE7U	Excluded
DNZ86D	Excluded	W6YYRA	Excluded
E639FQ	Excluded	Y9U6NR	Excluded
EW7YWK	Excluded	YFVJ88	Excluded
F6Y73R	Excluded	ZJ9LU3	Excluded
FB3AVB	Excluded		
G3KJUG	Excluded		
GDND2M	Excluded		
GK6PEN	Excluded		
GLFRZM	Excluded		
H2AJLN	Excluded		
HJ9T6K	Excluded		
JF2V9H	Excluded		

Response Summary		Total: 42
Responses	Not Excluded	0
	Excluded	42
	Inconclusive	0

Kinship DNA Statistics

Is the claim of an African American Maternal Grandparent/Grandchild relationship supported by
the genetic evidence?

TABLE 7

Webcode	Database	Kinship Index	Claim Supported?
2HAZF3	NIST-STRBASE	116.8	Yes.
3PM9G4	[Country] Caucasian Frequencies	2082196,407	yes it is
4CU8D3	local/state database	LR=20866	LR strong support Hp
62T4NY	[Country]NIST-STRBASE	117 (Afroamerican DB) / 310713 ([country] DB)	Yes
8GXCGX	[Country] pop. Database	486722.54	Si es soportada
8VHRKX	FBI PopStatsPromega databases for Penta D and Penta E	116.5	Yes
AZKH3T	NIST-STRBASE	117	Inconclusive
CVCU3L	[Country] population	97,01209% - grandparent/grandchild versus unrelated	Yes
DNZ86D		3.7 million	Yes
F6Y73R	Promega	266.5508	Yes
G3KJUG		120	Yes
GDND2M	NIST-STRBASE	105.729	Inconclusive
GLFRZM	NIST-STRBASE	116.8416	Yes
H2AJLN	Local/State Database	370	Yes, the DNA evidence does support the relationship.
HJ9T6K	NIST-STRBASE	116.8416	YES
K2H8YK	NIST-STRBASE	116.8416	Yes
KU2WLJ	NIST-STRBASE	116.8416	Yes
N8GV83	FBI PopStats	167.9	yes
NTDRFG	Other (local)	370	Yes
P7EQ3D		116.8416	No, Inconclusive
T3NKWE	[CTS removed reported database to protect the laboratory's anonymity]	768024.51	Yes

TABLE 7

Webcode	Database	Kinship Index	Claim Supported?
U2MR34	NIST-STRBASE	116.8954	Yes it is.
UZD3D9		5.96912e+05	yes
YFVJ88	NIST-STRBASE	124	YES, WITH A MODERATELY STRONG SUPPORT
ZJ9LU3	NIST-STRBASE	7280.4361	Yes.

Additional Kinship Statistical Results

TABLE 8

Webcode	Additional Statistical Results
62T4NY	In our lab, normally the kinship index is calculated in excel or for more complex relationships as here is the case with the Familias 3.2.1 software using the [Country] database. This results in a kinship index of 310713. As the DNA-profiles are presented as potential African American Maternal Grandparent/Grandchild relationship, the kinship index was also calculated with GenoProof 3 using the Afroamerican database. This results in a kinship index of 117. Both calculations support the African American Maternal Grandfather/Granddaughter relationship.
8GXCGX	ES 486722.54 veces más probable explicar los resultados genéticos obtenidos si existe una relación ABUELO/NIETO que si no la hubiera. Con una probabilidad de 99.9998%.
8VHRKX	Probability of the claimed relationship is 99.14% (prior probability 0.5).
CVCU3L	1. Half siblings/Uncle-Nephew/Grandparent/Grandchild versus Unrelated - 97,01209% 2. First cousins versus Unrelated - 93,23355% 3. Full siblings versus Unrelated - 58.09583% Statistical calculations are based on the NIST STRBase for the African American population. Relationship between Grandfather and Granddaughter, according to Applera scale, is probable, but according to Buckleton range, is limited. Suggested further research on additional autosomal STR markers.
DNZ86D	The laboratory database ([Country] Caucasian database) was used for this statistical calculation. SE33 has not been used as it does not exist in the database used for this calculation.
F6Y73R	Did not include SE33.
G3KJUG	The statistic was calculated using the revised NIST STRBASE African American population database. The KI is 21 when linkage is considered using our internal guidelines.
GDND2M	For the interpretation of the kinship index we use a tool on the software DNA VIEW that simulates profiles for the untyped persons and creates a set of kinship indexes supporting either hypotesis. We obtain 150 simulations for each hypotesis. Prymary hypotesis: The Alleged man could not be excluded as the grandfather of the child. Alternative hypotesis: The Alleged man is excluded as a possible biological grandfather ot the child. The results for the simulation of the Mother´s profile are: Prymary hypotesis: the kinship index in the 95% of the simulations are between 120 - 190,000 Alternative hypotesis: the kinship index in the 95% of the simulations are between 1/1.5e12- 3.2 The results for the simulation of the profiles of the Mother and Grandmother are: Prymary hypotesis: the kinship index in the 95% of the simulations are between 190- 170,000 Alternative hypotesis: the kinship index in the 95% of the simulations are between 1/1.130e9- 1/12 These two simulations help us to ponderate how strong is the evidence for each of the hypotesis. The calculations results for these profiles falls in between the simulations results, reason why in this case we would ask for more persons to profile and include in the essay as well as using another system for raising the number of markers.

TABLE 8

Webcode	Additional Statistical Results

GLFRZM X=Maternal grandfather
Y=Grandchild
Y/?:M+F
M:X+G
STRLocus-Grandfather-Grandchild-AlleleLegend-Formula-GivenFrequency-KI
D1S1656   14 14,16.3 p=14 (1+2p)/4p 0.2573 1.4716
D2S1338   18,21 21,24 s=21 (1+4s)/8s 0.1360 1.4191
D2S441 11.3,14 11,15 1/2 0.5000 0.5000
D3S1358   14,16 15 1/2 0.5000 0.5000
D5S818 8,12 8,12 p=8,t=12 (p+t+4pt)/8pt p=0.0468,t=0.3684 3.5102
D7S820 10 10 p=10 (1+p)/2p 0.3363 1.9868
D8S1179   14 9,11 1/2 0.5000 0.5000
D10S1248 12,14 13,14 u=14 (1+4u)/8u 0.2763 0.9524
D12S391   16,19 19,20 s=19 (1+4s)/8s 0.1477 1.3463
D13S317   11 11,12 p=11 (1+2p)/4p 0.3099 1.3067
D16S539   9,13 9,13 p=9,t=13 (p+t+4pt)/8pt p=0.1827,t=0.1228 2.2021
D18S51 18 17,18 q=18 (1+2q)/4q 0.1213 2.5610
D19S433   12,13 12 p=12 (1+2p)/4p 0.1228   2.5358
D21S11 29,31.2 29 p=29 (1+2p)/4p 0.2047 1.7213
D22S1045 11,17 11,15 p=11 (1+4p)/8p 0.1447 1.3639
Amel   XY XX
CSF1PO   11,12 9,11 r=11 (1+4r)/8r 0.2485 1.0030
FGA   21,23 21,27 p=21 (1+4p)/8p 0.1228 1.5179
PentaD   2.2,11 2.2,8 p=2.2 (1+4p)/8p 0.1140 1.5965
PentaE   5,9 11,14 1/2 0.5000 0.5000
SE33   13.2,16 18,19 1/2 0.5000 0.5000
TH01   7,9 7 p=7 (1+2p)/4p 0.4079 1.1129
TPOX   8,11 6,11 u=11 (1+4u)/8u 0.2155 1.0800
VWA   17 17,20 p=17 (1+2p)/4p 0.2354 1.5620
Cumulative KI = 116.8416
Probability of Kinship = KI/1+KI x 100%
= 116.8416/(1 + 116.8416) x 100%
= 99.1514%

H2AJLN   The results obtained are consistent with the grandfather being the biological grandfather of the granddaughter.

TABLE 8

Webcode	Additional Statistical Results

HJ9T6K   X=GRANDFATHER
Y=GRANDDAUGHTER
M:X+L
Y/?:F+M
STRLocus Grandfather Granddaughter Formula AlleleLegend Frequency KI
D1S1656   14,14   14,16.3   (1+2p)/4p   p=14   0.2573 1.4716
D2S1338   18,21   21,24 (1+4s)/8s   s=21   0.1360 1.4191
D2S441 11.3,14   11,15   1/2   0.5000
D3S1358   14,16   15,15   1/2   0.5000
D5S818 8,12   8,12 (p+t+4pt)8pt p=8   0.0468   t=12   0.3684   3.5102
D7S820 10,10   10,10 (1+p)/2p   p=10   0.3363 1.9868
D8S1179   14,14   9,11   1/2   0.5000
D10S1248 12,14   13,14   (1+4u)/8u   u=14 0.2763 0.9524
D12S391   16,19   19,20 (1+4s)/8s   s=19 0.1477 1.3463
D13S317   11,11   11,12 (1+2p)/4p   p=11 0.3099 1.3067
D16S539   9,13   9,13 (p+t+4pt)8pt p=9   0.1827   t=13   0.1228   2.2021
D18S51 18,18   17,18 (1+2q)/4q   q=18 0.1213 2.5610
D19S433   12,13   12,12 (1+2p)/4p   p=12 0.1228 2.5358
D21S11 29,31.2   29,29 (1+2p)/4p   p=29 0.2047 1.7213
D22S1045 11,17   11,15 (1+4p)/8p   p=11 0.1447 1.3639
Amel   XY   XX
CSF1PO   11,12   9,11   (1+4r)/8r   r=11   0.2485 1.0030
FGA   21,23   21,27 (1+4p)/8p   p=21 0.1228 1.5179
PentaD   2.2,11   2.2,8   (1+4p)/8p   p=2.2 0.1140 1.5965
PentaE   5,9   11,14 1/2   0.5000
SE33   13.2,16   18,19 1/2   0.5000
TH01   7,9   7,7(1+2p)/4p   p=7   0.4079   1.1129
TPOX   8,11   6,11   (1+4u)/8u   u=11 0.2155 1.0800
VWA   17,17   17,20 (1+2p)/4p   p=17 0.2354 1.5620
Cumulative KI = 116.8416
Probability of the kinship=[KI/(KI+1)]x100%
= [116.8416/(116.8416+1)]x100%
= 99.1514%

TABLE 8

Webcode	Additional Statistical Results

K2H8YK   X=Grandfather
           Y=Granddaughter
           M:X+L
           Y/?:F+M

Lokus STR	Grandfather	Granddaughter	Formula	Given	Frequency	LR
D1S1656	14,14	14,16.3	(1+2p)/4p	p=14	0.2573	1.4716
D2S1338	18,21	21,24	(1+4s)/8s	s=21	0.1360	1.4191
D2S441	11.3,14	11,15	1/2			0.5000
D3S1358	14,16	15,15	1/2			0.5000
D5S818	8,12	8,12	(p+t+4pt)/8pt	p=8	0.0468,t=12 0.3684	3.5102
D7S820	10,10	10,10	(1+p)/2p	p=10	0.3363	1.9868
D8S1179	14,14	9,11	1/2			0.5000
D10S1248	12,14	13,14	(1+4r)/8rr	r=14	0.2763	0.9524
D12S391	16,19	19,20	(1+4s)/8s	s=19	0.1477	1.3463
D13S317	11,11	11,12	(1+2p)/4p	p=11	0.3099	1.3067
D16S539	9,13	9,13	(p+t+4pt)/8pt	p=9	0.1827,t=13 0.1228	2.2021
D18S51	18,18	17,18	(1+2q)/4q	q=18	0.1213	2.5610
D19S433	12,13	12,12	(1+2p)/4p	p=12	0.1228	2.5358
D21S11	29,31.2	29,29	(1+2p)/4p	p=29	0.2047	1.7213
D22S1045	11,17	11,15	(1+4p)/8p	p=11	0.1447	1.3639
AMEL	XY	XX				
CSF1PO	11,12	9,11	(1+4r)/8rr	r=11	0.2485	1.0030
FGA	21,23	21,27	(1+4p)/8p	p=21	0.1228	1.5179
PENTA D	2.2,11	2.2,8	(1+4p)/8p	p=2.2	0.1140	1.5965
PENTA E	5,9	11,14	1/2			0.5000
SE33	13.2,16	18,19	1/2			0.5000
TH01	7,9	7,7	(1+2p)/4p	p=7	0.4079	1.1129
TPOX	8,11	6,11	(1+4u)/8u	u=11	0.2155	1.0800
VWA	17,17	17,20	(1+2p)/4p	p=17	0.2354	1.5620

Cumulative LR=116.8416
Probability of the kinship= LR/(LR+1) X100%
=116.8416/(116.8416+1) X 100%
=99.1514%

TABLE 8

Webcode	Additional Statistical Results

KU2WLJ   X=Maternal grandfather
Y=Grandchild
Y/?:M+F
M:X+G

STR_Locus Maternal_Grandfather Grandchild Allele_Legend Formula Given_Frequency   Kinship_Index
D1S1656   14 14,16.3 $p=14$ $(1+2p)/4p$ 0.2573 1.4716
D2S1338   18,21 21,24 $s=21$ $(1+4s)/8s$ 0.1360 1.4191
D2S441 11.3,14 11,15   1/2 0.5000 0.5000
D3S1358   14,16 15   1/2 0.5000 0.5000
D5S818 8,12   8,12 $p=8,t=12$ $(p+t+4pt)/8pt$ $p=0.0468,t=0.3684$ 3.5102
D7S820 10 10 $p=10$ $(1+p)/2p$ 0.3363 1.9868
D8S1179   14 9,11   1/2 0.5000 0.5000
D10S1248 12,14 13,14 $u=14$ $(1+4u)/8u$ 0.2763 0.9524
D12S391   16,19 19,20 $s=19$ $(1+4s)/8s$ 0.1477 1.3463
D13S317   11 11,12 $p=11$ $(1+2p)/4p$ 0.3099 1.3067
D16S539   9,13   9,13 $p=9,t=13$ $(p+t+4pt)/8pt$ $p=0.1827,t=0.1228$ 2.2021
D18S51 18 17,18 $q=18$ $(1+2q)/4q$ 0.1213 2.5610
D19S433   12,13 12 $p=12$ $(1+2p)/4p$ 0.1228 2.5358
D21S11 29,31.2 29 $p=29$ $(1+2p)/4p$ 0.2047 1.7213
D22S1045 11,17 11,15 $p=11$ $(1+4p)/8p$ 0.1447 1.3639
Amel   XY XX
CSF1PO   11,12 9,11 $r=11$ $(1+4r)/8r$ 0.2485 1.0030
FGA   21,23 21,27 $p=21$ $(1+4p)/8p$ 0.1228 1.5179
PentaD 2.2,11 2.2,8 $p=2.2$ $(1+4p)/8p$ 0.1140 1.5965
PentaE 5,9 11,14   1/2 0.5000 0.5000
SE33   13.2,16 18,19   1/2 0.5000 0.5000
TH01   7,9 7 $p=7$ $(1+2p)/4p$ 0.4079 1.1129
TPOX   8,11 6,11 $u=11$ $(1+4u)/8u$ 0.2155 1.0800
VWA   17 17,20 $p=17$ $(1+2p)/4p$ 0.2354 1.5620
Cumulative KI = 116.8416
Probability of Kinship = KI/(KI+1) x 100%
= 116.8416/(116.8416+1) x 100%
= 99.1514%

NTDRFG   The evidence supports the Grandparent/Grandchild relationship as the calculated likelihood ratio of 370 and Posterior Probability of 99.2% are within our laboratory's acceptence range.

P7EQ3D   When making the comparison between the genetic profile of the Maternal Grandfather and Granddaughter an kinship Index 116.8416 and Probability of Relationship 99.1514%. Given these results are requested to complete the two genetic profiles with more DNA STR Nuclear Maternal Grandfather and Granddaughter.

T3NKWE   For the statistical analysis the [Country] Caucasian population database was used, believing that the calculation made with different databases does not lead to substantially different results: the LR value obtained by using the software Familias 3 provides extremely strong support for the grandparent/grandchild relationship.

U2MR34   Given the observed genotypes and the performed kinship analysis, a Maternal Grandparent/Grandchild relationship between the tested individuals cannot be excluded.

ZJ9LU3   Two DNA profiles were compared by using the Hispanic population database same as previous section. There are likely to be maternal grandparent/grandchild relationship because probability of kinship index is greater than 99.98%.

Additional Comments
TABLE 9

Webcode	Additional Comments
3PM9G4	In order to part 2 "paternity DNA Statistics". Uncompatibilities between "item3" and "item2" for 11 out of 16 loci, was observed. For this reason any biostatistical compute wasn't run.
62T4NY	In cases of exclusions, our laboratory does not perform statistical analysis.
8GXCGX	1. Se realizan los cálculos estadísticos de indicie de parternidad utilizando el software Patcan 2.0 versión 1.0.11 para los loci donde hay concordancia entre los items 2 y 3, de acuerdo al procedimiento establecido en este laboratorio. Obivamente, en los loci que no hay concordancia no se reporta el indicie. 2. No se hace el análisis de cromosoma Y por ser una probable hija mujer y además por haberse excluido al Item 3 de ser el padre biológico. 2. Los cálculos estadísticos de la sección 3 se realizaron utilizando el software Familias3 versión 3.2.1 de acuerdo al procedimiento establecido en este laboratorio. En este caso también se realizaría el estudio de cromosoma X para soportar más la relación abuelo nieta, así mismo se pediría de ser posible la participación de más miembros de la familia en el estudio genético, por ejemplo de no haber padres, tíos y/o los abuelos paternos.
BCVA6T	The Southeast Hispanic FBI population database was used for reporting.
DNZ86D	Paternity assessment completed via manual comparison of reference samples provided - statistical calculation not required.
E639FQ	No results were obtained for locus DYS391 for Item 1 and Item 2.
GDND2M	All calculations for the test has been done using the sowtware DNA VIEW ver 29.52. as we normally do regularly.
GK6PEN	Combined Paternity Index and Probability of Paternity not calculated due to exclusion of alleged father.
GLFRZM	1. On comparison of the DNA profiles obtained, I found that the source of bloodstained specimen Item 3 is not the biological father to the source of bloodstained specimen Item 2 (given that the biological mother is represented by the source of bloodstained specimen Item 1). 2. Item 1, Item 2 and Item 3 were extracted using in-situ method and amplified using AmpFISTR Identifiler Direct Kit. 2. Y-STR analysis was carried out on Item 3. 3. Electrophoresis was carried out using Applied Biosystem 3130xL Genetic Analyzer. 4. Reagent blank, positive control and negative control were incorporated in overall analysis and gave designated result. 5. The statistical formula were derived from DNAview Statistical Software and calculated using Microsoft Excel.
H2AJLN	The results are reported as consistent since the calculated index of higher than 99 was obtained, as such according to the standard procedures of this laboratory. The local/state database was used for calculation purposes and the most conservative likelihood ratio was used (black population). The Identifiler Plus loci set was considered for the above likelihood ratio calculation (KI).
HJ9T6K	1. On comparison of the DNA profiles obtained, I found that the source of bloodstained specimen "Item3" is NOT the biological father to the source of bloodstained specimen "Item2" (given that the biological mother is represented by the source of bloodstained specimen "Item1"). 2. "Item1", "Item2" and "Item3" were extracted by in-situ method and proceed with amplification using AmpFLSTR Identifiler Direct Kit. 3. "Item3" also amplified with AmpFLSTR Yfiler kit. 4. Electrophoresis were carried out using Applied Biosystem 3130xl Genetic Analyzer. 5. Reagent Blank, positive control and negative control were carried out along with the analysis and gave designated result. 6. The statistical formula were derived by DNA View Statistical Software and calculated using microsoft excel.
JF2V9H	RESULT: By studying the (DNA) profiles of all three donors we clarify the following: 1- blood sample labeled with item 1 is the biological mother of the donor of blood stain labeled with item 2. 2- blood sample labeled with item 3 can not be the biological father of the donor of blood stain labeled with item 2.

TABLE 9

Webcode	Additional Comments
K2H8YK	1) On comparison of the DNA profiles obtained, I found that the source of bloodstained specimen "Item3" is NOT the biological father to the source of bloodstained specimen "Item2" (given that the biological mother is represented by the source of bloodstained specimen "Item1"). 2) Item1, Item2 and Item3 were extracted by in-situ method and proceed amplification with AmpFLSTR Identifiler Direct kit. 3) Item3 also amplified with AmpFLSTR YFiler kit. 4) Electrophoresis were carried out using Applied Biosystem 3130xl Genetic Analyzer. 5) Reagent blank, positive control and negative control were carried out along with the analysis and gave designated result. 6)The statistical formula were derived by DNA View Statistical Software and calculated using Microsoft Excel.
KU2WLJ	1. On comparison to the DNA profiles obtained, I found that the source of stained-blood specimen "Item 3" is not the biological father to the source of stained-blood specimen "Item 2" (given that the biological mother is represented by the source of stained-blood specimen "Item 1"). 2. Item 1, Item 2 and Item 3 were extracted using in-situ method and amplified using AmpFlSTR Direct Kit. 3. Y-STR analysis was carried out on Item 3. 4. Electrophoresis was carried out using Applied Biosystem 3130xL Genetic Analyzer. 5. Reagent blank, positive control and negative control were incorporated in overall analysis and gave designated results. 6. The statistical formula were derived from DNAView Statistical Software and calculated using Microsoft Excel.
MBYVN4	Paternity assessment completed via manual exclusion (statistical assessment not employed).
T3NKWE	Generally, when the number of loci with no emizygosity is greater than three, we do not perform probabilistic calculation, excluding paternity without doubt.

Appendix: Data Sheet

Collaborative Testing Services ~ Forensic Testing Program
Test No. 17-5872: DNA Parentage

DATA MUST BE RECEIVED BY _October 09, 2017_ 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 DNP3):

Item 1: Blood Sample from Known Parent (Caucasian Mother)

Item 2: Blood Sample from Known Child (Daughter)

Item 3: Blood Sample from Alleged Father (Hispanic)

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	D4S2408	D5S818
STR	15,18	12,17	10	14	12	5,13
PI	1.65	3.01	3.16	4.12	2.45	5.65

Participant Code:
WebCode:

Part I: DNA ANALYSIS FOR ITEM 1

STR Amplification Kit(s) Used: Check the brands used for this item and record only additional kit specific information in the blank provided (i.e.16, Direct, etc.).

☐ Identifiler® _____   ☐ PowerPlex® _____   ☐ Investigator® 24plex _____

☐ GlobalFiler™ _____   ☐ COfiler®/Profiler Plus®   ☐ ForenSeq™   Other _____

ITEM 1

STR	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818

STR	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391

STR	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482

STR	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D

STR	Penta E	SE33	TH01	TPOX	vWA

Please return all pages of this data sheet.   Page 2 of 9

Participant Code:
WebCode:

Part I: DNA ANALYSIS FOR ITEM 2

STR Amplification Kit(s) Used: Check the brands used for this item and record only additional kit specific information in the blank provided (i.e.16, Direct, etc.).

☐ Identifiler® _____   ☐ PowerPlex® _____   ☐ Investigator® 24plex _____

☐ GlobalFiler™ _____   ☐ COfiler®/Profiler Plus®   ☐ ForenSeq™   Other _____

ITEM 2

	D1S1656	D2S1338	D2S441	D3S1358	D4S2408	D5S818
STR						

	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
STR						

	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
STR						

	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
STR						

	Penta E	SE33	TH01	TPOX	vWA
STR					

Please return all pages of this data sheet.   Page 3 of 9

Participant Code:
WebCode:

Part I: DNA ANALYSIS FOR ITEM 3

STR Amplification Kit(s) Used: Check the brands used for this item and record only additional kit specific information in the blank provided (i.e.16, Direct, etc.).

☐ Identifiler® _____   ☐ PowerPlex® _____   ☐ Investigator® 24plex _____

☐ GlobalFiler™ _____   ☐ COfiler®/Profiler Plus®   ☐ ForenSeq™   Other _____

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	D4S2408	D5S818
STR						
PI						

	D6S1043	D7S820	D8S1179	D9S1122	D10S1248	D12S391
STR						
PI						

	D13S317	D16S539	D17S1301	D18S51	D19S433	D20S482
STR						
PI						

	D21S11	D22S1045	Amelogenin	CSF1PO	FGA	Penta D
STR						
PI						

	Penta E	SE33	TH01	TPOX	vWA
STR					
PI					

Please return all pages of this data sheet.   Page 4 of 9

Participant Code:
WebCode:

Part I: DNA ANALYSIS FOR ITEM 3 - (continued)
YSTR results are for proficiency concordance only.

YSTR Amplification Kit(s) Used: Check the brands used for this item and record only additional kit specific information in the blank provided (i.e.Plus, 23, etc.)

☐ Yfiler® _____   ☐ PowerPlex® Fusion _____   ☐ Investigator® 24plex _____

☐ PowerPlex® Y_____   ☐ GlobalFiler™ _____   ☐ ForenSeq™   Other _____

ITEM 3

DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393	DYS437

DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481	DYS505	DYS518

DYS522	DYS533	DYS549	DYS570	DYS576	DYS612	DYS627	DYS635	DYS643	Y GATA H4	Y Indel

Part I (continued): Additional DNA Results
Please use the section below to report results <u>only</u> for loci not available on the previous pages.

	Item 1	Item 2	Item 3 STR	Item 3 PI
_____				
_____				
_____				
_____				

Please return all pages of this data sheet.   Page 5 of 9

Participant Code:

WebCode:

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:

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 6 of 9

Participant Code:
WebCode:

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 African American Maternal Grandparent/Grandchild 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
Grandfather	14, 14	18, 21	11.3, 14	14, 16	8, 12	10, 10
Granddaughter	14, 16.3	21, 24	11, 15	15, 15	8, 12	10, 10

Profile	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Grandfather	14, 14	12, 14	16, 19	11, 11	9, 13	18, 18
Granddaughter	9, 11	13, 14	19, 20	11, 12	9, 13	17, 18

Profile	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
Grandfather	12, 13	29, 31.2	11, 17	X, Y	11, 12	21, 23
Granddaughter	12, 12	29, 29	11, 15	X, X	9, 11	21, 27

Profile	PentaD	PentaE	SE33	TH01	TPOX	vWA
Grandfather	2.2, 11	5, 9	13.2, 16	7, 9	8, 11	17, 17
Granddaughter	2.2, 8	11, 14	18, 19	7, 7	6, 11	17, 20

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

2) Is the claim of a African American Maternal Grandparent/Grandchild 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.   Page 7 of 9

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.   Page 8 of 9

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. **17-5872**: **DNA Parentage**

This release page must be completed and received by **_October 9, 2017_** 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.   Page 9 of 9

Printed: November 03, 2017   (57)   Copyright © 2017 CTS, Inc