Collaborative Testing Services, Inc

FORENSIC TESTING PROGRAM

DNA Parentage
Test No. 19-5872 Summary Report

Each participant received a sample pack consisting of the standard paternity trio, collected from a mother, a daughter, and a potential father. Participants were requested to analyze the samples using their existing protocols. Data were returned from 82 participants 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, a daughter, and a potential father. Participants were requested to analyze these items using their existing protocols. Also included with this test was a kinship exercise that consisted of autosomal DNA profiles of two individuals for comparison. Participants were requested to determine if a grandchild and grandparent 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 27, 2019.

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 grandchild and grandparent relationship.

VERIFICATION: Laboratories that conducted predistribution 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 D7S820 D18S51 FGA vWA	D2S1338 D8S1179 D19S433 Penta D DYS391	D2S441 D10S1248 D21S11 Penta E DYS570	D3S1358 D12S391 D22S1045 SE33 DYS576	D5S818 D13S317 Amelogenin TH01 Y Indel	D6S1043 D16S539 CSF1PO TPOX
1	15,17.3 7,10 12,12 21,26 14,17	17,25 11,13 14,15 9,10 NM	10,10 13,16 30,30 10,14 NM	15,18 20,20 14,16 16,31.2 NM	10,11 10,12 X,X 6,7 NM	* 11,13 11,12 8,12
2	15,15.3 10,10 12,12 20,26 14,18	17,25 11,14 14,15 10,12 NM	10,11 13,14 30,30 9,14 NM	15,15 20,22 15,16 16,23.2 NM	11,11 10,12 X,X 6,6 NM	* 13,13 12,12 8,12
3	11,16 10,10 14,20 20,22 11,16	19,25 11,14 13,14 12,13 10	10,12 13,14 29,30 9,26 17	15,15 19,20 15,17 23.2,29.2 18	7,12 9,12 X,Y 9,9 2	* 12,13 10,11 8,8

YSTR Results

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

Item	DYF387S1 DYS437 DYS518	DYS19 DYS438 DYS533	DYS385 DYS439 DYS549	DYS389-I DYS448 DYS570	DYS389-II DYS449 DYS576	DYS390 DYS456 DYS627	DYS391 DYS458 DYS635	DYS392 DYS460 DYS643	DYS393 DYS481 Y GATA H4
3	35,36 15 37	14 12 12	11,14 13 13	14 19 17	30 31 18	25 15 23	10 17 23	13 10 10	13 22 12

Paternity Indices

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

Item - Database	D1S1656 D7S820 D18S51 FGA vWA	D2S1338 D8S1179 D19S433 Penta D DYS391	D2S441 D10S1248 D21S11 Penta E DYS570	D3S1358 D12S391 D22S1045 SE33 DYS576	D5S818 D13S317 Amelogenin TH01 Y Indel	D6S1043 D16S539 CSF1PO TPOX
3PI	0 3.2552	2.0169 1.90323	0 1.4749	3.1056 0	0 1.4915	* 3.7453
NIST- STRBase	0 5.9 0	1.0216 *	1.8295 *	1.17413 21.4592	* 0	0 1.6977

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

NM - Non-Male profile, YSTR results not expected.

Summary Comments

The 19-5872 DNA Parentage test was designed to allow participants to assess their proficiency in the analysis and interpretation of a standard paternity trio of blood samples. Item 1 was blood collected from a female donor (mother), Item 2 was blood collected from a female donor (daughter of the Item 1 female), 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. The test also included a paper 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 82 participants who returned data reported STR results for all three items. For Item 1, one participant reported "30,31" at D21S11 whereas consensus was "30,30". Another participant reported "15,17.3" at SE33 whereas consensus was "16,31.2". For Item 2, one participant reported "13,14" at SE33 whereas consensus was "16,23.2". For Item 3, five participants reported results differing from the consensus at Penta E. Of these five participants, four reported either "9,OL", "9", or "9,9" and one of these also reported inconsistent results for two additional loci. The one remaining participant reported an inconsistent allele at locus SE33.

Twenty seven participants reported full YSTR results for Item 3. All of these participants reported consistent individual profiles for Item 3.

Paternity DNA Statistics:

All 82 participants reported that the source of Item 3 was excluded as the biological father of Item 2. Most participants either reported a value of zero or did not respond for the combined paternity index or the probability of paternity. Many participants stated that they do not calculate combined paternity index or probability of paternity when the alleged father is excluded as being the biological father. One participant reported a probability of paternity of 99.99% but concluded that Item 3 was excluded as the biological father of Item 2. The most frequently reported population databases were NIST-STRBASE with 29 participants and FBI PopStats with seven participants.

Kinship DNA Statistics

There were 26 participants who responded for the paper kinship exercise. One participant reported inconsistent likelihood ratio (LR) values at 22 different loci. One other participant reported an inconsistent LR value at D16S539. Approximately 85% of participants reported a combined Kinship Index (KI) between 55 and 56. The remaining four responding participants reported KI values that fell below the consensus KI range. Of the 26 participants, 22 reported that the claim of a grandparent and grandchild relationship was supported. Of the four remaining participants, one reported a number, but stated that the relationship was probable in the "Additional Kinship Statistical Results" section. One reported inconclusive and two stated that the claim was not supported or that there was limited support for the proposed relationship.

STR Amplification Kit(s) & Results

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 1 - STR Results

2MTFF2	PowerPlex® Fusion					
	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26	9,10	10,14		6,7	8,12
	14,17					

3BGA2R	PowerPlex® Fusion					
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26	9,10	10,14		6,7	8,12
	14,17					

3Y4A6Y	Identifiler® Direct, PowerPlex® FUSION, 21, ESX17, ESI17, CS7, NGM SElect					
	15,17.3	17,25	10	15,18	10,11	11
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17					

489GJY	GlobalFiler™					
	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26			16,31.2	6,7	8,12
	14,17	Not detected			Not detected	

4BE3C6	PowerPlex®					
	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26	9,10	10,14		6,7	8,12
	14,17	N.D				

4BP4X4	Identifiler®, NGMSElect					
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26			16,31.2	6,7	8,12
	14,17					

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 1 - STR Results

6GJF4W	PowerPlex® FUSION 6C					
	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17					

6JYTB3	PowerPlex® FUSION SYSTEM, Qiagen HDPlex (GeneMapper ID v. 3.2.1)					
	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17	-				

6MX483	PowerPlex® Fusion System, NGMSElect					
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17					

6WCT8V	PowerPlex® Fusion 6C					
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17					

78PUB3	PowerPlex® FUSION 6C					
	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17					

7U4E94	PowerPlex® FUSION 6C					
	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17					

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 1 - STR Results

82R8NX PowerPlex® Fusion, ESX 17 Fast

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X,X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17					

8JXCCB PowerPlex® FUSION (Familias 3.2)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26	9,10	10,14		6,7	8,12
	14,17					

9ECAHA GlobalFiler™ express

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26			16,31.2	6,7	8,12
	14,17					

AAK3Y2 PowerPlex® Fusion-ESX17

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17					

ALDLFT Identifiler® Plus

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
		17,25		15,18	10,11	
1	7,10	11,13			10,12	11,13
	12	14,15	30		X	11,12
	21,26				6,7	8,12
	14,17					

AVGZXK PowerPlex® Fusion

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26	9,10	10,14		6,7	8,12
	14,17					

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 1 - STR Results

B9Y9BW	PowerPlex® Fusion 6C (GeneMarker HID)					
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17					

BBAQWM	Identifiler® Plus					
		17,25		15,18	10,11	
1	7,10	11,13			10,12	11,13
	12,12	14,15	30,30		X,X	11,12
	21,26				6,7	8,12
	14,17					

BEMXUL	GlobalFiler™					
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26			16,31.2	6,7	8,12
	14,17					

BMF7EC	GlobalFiler™					
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26			16,31.2	6,7	8,12
	14,17					

C2F64U	PowerPlex® Fusion					
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26	9,10	10,14		6,7	8,12
	14,17	NR				

C79AVD	GlobalFiler™					
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,31	14,16	X,X	11,12
	21,26				6,7	8,12

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 1 - STR Results

CBHMDC	GlobalFiler™					
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26			16,31.2	6,7	8,12
	14,17					

CDTABQ	GlobalFiler™ Express					
	15,17.3	17,25	10	15,18	10,11	-
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X,X	11,12
	21,26	-	-	16,31.2	6,7	8,12
	14,17	-	-	-	-	

D7QETH	PowerPlex® Fusion					
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26	9,10	10,14		6,7	8,12
	14,17					

DMTEFC	PowerPlex® F6C					
	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17					

EAH7DK	PowerPlex® Fusion					
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X,X	11,12
	21,26	9,10	10,14		6,7	8,12
	14,17					

EDJA4L	GlobalFiler™					
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26			16,31.2	6,7	8,12
	14,17					

TABLE 1

WebCode / Item	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 1 - STR Results

EMARJF — GlobalFiler™

15,17.3	17,25	10	15,18	10,11	
7,10	11,13	13,16	20	10,12	11,13
12	14,15	30	14,16	X	11,12
21,26			16,31.2	6,7	8,12
14,17					

Item: 1

F97NYL — PowerPlex® Fusion 6C

15,17.3	17,25	10	15,18	10,11	
7,10	11,13	13,16	20	10,12	11,13
12	14,15	30	14,16	X	11,12
21,26	9,10	10,14	16,31.2	6,7	8,12
14,17					

Item: 1

FC7X3V — GlobalFiler™

15,17.3	17,25	10,10	15,18	10,11	
7,10	11,13	13,16	20,20	10,12	11,13
12,12	14,15	30,30	14,16	X,X	11,12
21,26			16,31.2	6,7	8,12
14,17					

Item: 1

GJYRBD — PowerPlex® Fusion 5C

15,17.3	17,25	10	15,18	10,11	
7,10	11,13	13,16	20	10,12	11,13
12	14,15	30	14,16	X	11,12
21,26	9,10	10,14		6,7	8,12
14,17					

Item: 1

GLPQUH — Identifiler®

	17,25		15,18	10,11	
7,10	11,13			10,12	11,13
12,12	14,15	30,30		X,X	11,12
21,26				6,7	8,12
14,17					

Item: 1

GUJZXL — GlobalFiler™

15,17.3	17,25	10	15,18	10,11	
7,10	11,13	13,16	20	10,12	11,13
12	14,15	30	14,16	X	11,12
21,26			16,31.2	6,7	8,12
14,17					

Item: 1

TABLE 1

WebCode / Item	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 1 - STR Results

GVCR88 GlobalFiler™

Item						
	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26			16,31.2	6,7	8,12
	14,17					

GVT93Z PowerPlex® FUSION (ID-X-V1.4)

Item						
	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26	9,10	10,14	15,17.3	6,7	8,12
	14,17					

GZB7WH PowerPlex® Fusion 6C (DNA View)

Item						
	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17					

H83Z8L Identifiler® plus

Item						
		17,25		15.18	10,11	
1	7.10	11,13			10,12	11,13
	12,12	14,15	30,30		X.X	11,12
	21,26				6,7	8,12
	14,17					

HGP7ZH

Item						
	15,17.3	17,25	10,10	15,18	10,11	11,11
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17					

J6C2R2 PowerPlex® 21

Item						
	15,17.3	17,25		15,18	10,11	11,11
1	7,10	11,13		20,20	10,12	11,13
	12,12	14,15	30,30		X,X	11,12
	21,26	9,10	10,14		6,7	8,12
	14,17					

TABLE 1

WebCode / Item	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	**D2S1338**	**D2S441**	**D3S1358**	**D5S818**	**D6S1043**
	D7S820	**D8S1179**	**D10S1248**	**D12S391**	**D13S317**	**D16S539**
	D18S51	**D19S433**	**D21S11**	**D22S1045**	**Amelogenin**	**CSF1PO**
	FGA	**Penta D**	**Penta E**	**SE33**	**TH01**	**TPOX**
	vWA	**DYS391**	**DYS570**	**DYS576**	**Y Indel**	

Item 1 - STR Results

J6UC4F — Identifiler® Direct

Item						
1		17,25		15,18	10,11	
	7,10	11,13			10,12	11,13
	12	14,15	30		X,X	11,12
	21,26				6,7	8,12
	14,17					

JFELR9 — PowerPlex® Fusion 6C

Item						
1	15,17.3	17,25	10	15,18	10,11	
	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17	NR	NR	NR		

JG6K9T — PowerPlex® Fusion, ESX17, GlobalFiler™

Item						
1	15,17.3	17,25	10	15,18	10,11	
	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X,X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17					

JZJYLG — GlobalFiler™ Express

Item						
1	15,17.3	17,25	10	15,18	10,11	-
	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X,X	11,12
	21,26	-	-	16,31.2	6,7	8,12
	14,17	-	-	-	-	

KD6V36 — PowerPlex® Fusion 5C

Item						
1	15,17.3	17,25	10	15,18	10,11	
	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26	9,10	10,14		6,7	8,12
	14,17					

KF667F — GlobalFiler™ Express

Item						
1	15,17.3	17,25	10	15,18	10,11	-
	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X,X	11,12
	21,26	-	-	16,31.2	6,7	8,12
	14,17	-	-	-	-	

TABLE 1

WebCode / Item	Amplification Kits (Probabilistic Genotyping)				
D1S1656	**D2S1338**	**D2S441**	**D3S1358**	**D5S818**	**D6S1043**
D7S820	**D8S1179**	**D10S1248**	**D12S391**	**D13S317**	**D16S539**
D18S51	**D19S433**	**D21S11**	**D22S1045**	**Amelogenin**	**CSF1PO**
FGA	**Penta D**	**Penta E**	**SE33**	**TH01**	**TPOX**
vWA	**DYS391**	**DYS570**	**DYS576**	**Y Indel**	

Item 1 - STR Results

KHV4PK — PowerPlex® Fusion

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10	15,18	10,11	
7,10	11,13	13,16	20	10,12	11,13
12	14,15	30	14,16	X	11,12
21,26	9,10	10,14		6,7	8,12
14,17	NR				

KLVEHY — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10,10	15,18	10,11	
7,10	11,13	13,16	20,20	10,12	11,13
12,12	14,15	30,30	14,16	X,X	11,12
21,26			16,31.2	6,7	8,12
14,17					

KNMB8T — GlobalFiler™ Express

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10,10	15,18	10,11	
7,10	11,13	13,16	20,20	10,12	11,13
12,12	14,15	30,30	14,16	X,X	11,12
21,26			16,31.2	6,7	8,12
14,17					

LA4PAE — PowerPlex® Fusion 6C

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10,10	15,18	10,11	
7,10	11,13	13,16	20,20	10,12	11,13
12,12	14,15	30,30	14,16	X,X	11,12
21,26	9,10	10,14	16,31.2	6,7	8,12
14,17					

MRZE4M — PowerPlex® FUSION 6C

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10,10	15,18	10,11	
7,10	11,13	13,16	20,20	10,12	11,13
12,12	14,15	30,30	14,16	X,X	11,12
21,26	9,10	10,14	16,31.2	6,7	8,12
14,17					

NB6ABK — PowerPlex® fusion 6c

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10,10	15,18	10,11	
7,10	11,13	13,16	20,20	10,12	11,13
12,12	14,15	30,30	14,16	X,X	11,12
21,26	9,10	10,14	16,31.2	6,7	8,12
14,17					

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 1 - STR Results

NDBH43 GlobalFiler™

15,17.3	17,25	10,10	15,18	10,11	
7,10	11,13	13,16	20,20	10,12	11,13
12,12	14,15	30,30	14,16	X,X	11,12
21,26			16,31.2	6,7	8,12
14,17					

NMYQYL PowerPlex® FUSION 6C

15,17.3	17,25	10,10	15,18	10,11	
7,10	11,13	13,16	20,20	10,12	11,13
12,12	14,15	30,30	14,16	X,X	11,12
21,26	9,10	10,14	16,31.2	6,7	8,12
14,17					

P6RB6A GlobalFiler™

15,17.3	17,25	10	15,18	10,11	
7,10	11,13	13,16	20	10,12	11,13
12	14,15	30	14,16	X	11,12
21,26			16,31.2	6,7	8,12
14,17	NR			NR	

PBYXXD PowerPlex® Fusion 5C

15,17.3	17,25	10	15,18	10,11	
7,10	11,13	13,16	20	10,12	11,13
12	14,15	30	14,16	X	11,12
21,26	9,10	10,14		6,7	8,12
14,17	--				

PV78XB GlobalFiler™ Express

15,17.3	17,25	10	15,18	10,11	--
7,10	11,13	13,16	20	10,12	11,13
12	14,15	30	14,16	X,X	11,12
21,26	--	--	16,31.2	6,7	8,12
14,17	--	--	--	--	

Q26C6K Verifiler

15,17.3	17,25	10,10	15,18	10,11	11,11
7,10	11,13	13,16	20,20	10,12	11,13
12,12	14,15	30,30	14,16	X,X	11,12
21,26	9,10	10,14		6,7	8,12
14,17					

TABLE 1

WebCode / Item	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 1 - STR Results

QM9X7C — GlobalFiler™ Express — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10	15,18	10,11	
7,10	11,13	13,16	20	10,12	11,13
12	14,15	30	14,16	X	11,12
21,26			16,31.2	6,7	8,12
14,17					

QR4Q3R — GlobalFiler™ — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10,10	15,18	10,11	
7,10	11,13	13,16	20,20	10,12	11,13
12,12	14,15	30,30	14,16	X,X	11,12
21,26			16,31.2	6,7	8,12
14,17					

QTVMQL — Identifiler® Plus — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	17,25		15,18	10,11	
7,10	11,13			10,12	11,13
12,12	14,15	30,30		X,X	11,12
21,26				6,7	8,12
14,17					

QUB7BJ — PowerPlex® Fusion 6C (Genemarker HID) — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10	15,18	10,11	
7,10	11,13	13,16	20	10,12	11,13
12	14,15	30	14,16	X	11,12
21,26	9,10	10,14	16,31.2	6,7	8,12
14,17					

RHZB3A — PowerPlex® FUSION 6C — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10,10	15,18	10,11	
7,10	11,13	13,16	20,20	10,12	11,13
12,12	14,15	30,30	14,16	X,X	11,12
21,26	9,10	10,14	16,31.2	6,7	8,12
14,17					

RRJ8VZ — GlobalFiler™ — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10,10	15,18	10,11	
7,10	11,13	13,16	20,20	10,12	11,13
12,12	14,15	30,30	14,16	X,X	11,12
21,26			16,31.2	6,7	8,12
14,17					

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 1 - STR Results

RZECN2 — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10	15,18	10,11	
7,10	11,13	13,16	20	10,12	11,13
12	14,15	30	14,16	X	11,12
21,26			16,31.2	6,7	8,12
14,17	-			-	

Item: 1

TYC274 — PowerPlex® Fusion

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10	15,18	10,11	
7,10	11,13	13,16	20	10,12	11,13
12	14,15	30	14,16	X	11,12
21,26	9,10	10,14		6,7	8,12
14,17					

Item: 1

VAN9U3 — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10	15,18	10,11	
7,10	11,13	13,16	20	10,12	11,13
12	14,15	30	14,16	X	11,12
21,26			16,31.2	6,7	8,12
14,17					

Item: 1

VURUWU — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10	15,18	10,11	
7,10	11,13	13,16	20,20	10,12	11,13
12,12	14,15	30,30	14,16	X,X	11,12
21,26				6,7	8,12

Item: 1

VZKTDB — Qiagen Investigator ESSPlex SE

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10,10	15,18		
	11,13	13,16	20,20		11,13
12,12	14,15	30,30	14,16	X,X	
21,26			16,31.2	6,7	
14,17					

Item: 1

W2QX44 — PowerPlex® Fusion 6C

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,17.3	17,25	10	15,18	10,11	
7,10	11,13	13,16	20	10,12	11,13
12	14,15	30	14,16	X	11,12
21,26	9,10	10,14	16,31.2	6,7	8,12
14,17					

Item: 1

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 1 - STR Results

WHXYX7 Identifiler®

	D1S1656 / D7S820 / D18S51 / FGA / vWA	D2S1338 / D8S1179 / D19S433 / Penta D / DYS391	D2S441 / D10S1248 / D21S11 / Penta E / DYS570	D3S1358 / D12S391 / D22S1045 / SE33 / DYS576	D5S818 / D13S317 / Amelogenin / TH01 / Y Indel	D6S1043 / D16S539 / CSF1PO / TPOX
		17,25		15,18	10,11	
1	7,10	11,13			10,12	11,13
	12,12	14,15	30,30		X,X	11,12
	21,26				6,7	8,12
	14,17					

WTVTB3 GlobalFiler™ Express

	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26			16,31.2	6,7	8,12
	14,17	0			0	

XJLQP3 GlobalFiler™

	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26			16,31.2	6,7	8,12
	14,17	-			-	

XU8R6C Identifiler® Plus, GlobalFiler™

	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26			16,31.2	6,7	8,12
	14,17					

Y4QLWY GlobalFiler™

	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26			16,31.2	6,7	8,12
	14,17	-			-	

Z6GBDX GlobalFiler™

	15,17.3	17,25	10	15,18	10,11	
1	7,10	11,13	13,16	20	10,12	11,13
	12	14,15	30	14,16	X	11,12
	21,26			16,31.2	6,7	8,12
	14,17					

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 1 - STR Results

ZCGQZK	GlobalFiler™					
	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26			16,31.2	6,7	8,12
	14,17					

ZD9PG4	Identifiler® Plus					
		17,25		15,18	10,11	
1	7,10	11,13			10,12	11,13
	12,12	14,15	30,30		X,X	11,12
	21,26				6,7	8,12
	14,17					

ZHNEB9	PowerPlex® FUSION 6C					
	15,17.3	17,25	10,10	15,18	10,11	
1	7,10	11,13	13,16	20,20	10,12	11,13
	12,12	14,15	30,30	14,16	X,X	11,12
	21,26	9,10	10,14	16,31.2	6,7	8,12
	14,17					

ZPMML8	PowerPlex® PP21					
	15,17.3	17,25		15,18	10,11	11
1	7,10	11,13		20	10,12	11,13
	12	14,15	30		X	11,12
	21,26	9,10	10,14		6,7	8,12
	14,17					

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 2 - STR Results

2MTFF2 — PowerPlex® Fusion

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15,15	11,11	
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14		6,6	8,12
	14,18					

3BGA2R — PowerPlex® Fusion

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	
2	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26	10,12	9,14		6	8,12
	14,18					

3Y4A6Y — Identifiler® Direct, PowerPlex® FUSION, 21, ESX17, ESI17, CS7, NGM SElect

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	11
2	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26	10,12	9,14	16,23.2	6	8,12
	14,18					

489GJY — GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15,15	11,11	
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26			16,23.2	6,6	8,12
	14,18	Not detected			Not detected	

4BE3C6 — PowerPlex®

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15,15	11,11	
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14		6,6	8,12
	14,18	N.D				

4BP4X4 — Identifiler®, NGMSElect

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	
2	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26			16,23.2	6	8,12
	14,18					

TABLE 1

WebCode / Item	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 2 - STR Results

6GJF4W PowerPlex® FUSION 6C

Item						
2	15,15.3	17,25	10,11	15,15	11,11	
	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14	16,23.2	6,6	8,12
	14,18					

6JYTB3 PowerPlex® FUSION SYSTEM, Qiagen HDPlex (GeneMapper ID v. 3.2.1)

Item						
2	15,15.3	17,25	10,11	15,15	11,11	
	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14	16,23.2	6,6	8,12
	14,18	-				

6MX483 PowerPlex® Fusion System, NGMSElect

Item						
2	15,15.3	17,25	10,11	15	11	
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26	10,12	9,14	16,23.2	6	8,12
	14,18					

6WCT8V PowerPlex® Fusion 6C

Item						
2	15,15.3	17,25	10,11	15	11	
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26	10,12	9,14	16,23.2	6	8,12
	14,18					

78PUB3 PowerPlex® FUSION 6C

Item						
2	15,15.3	17,25	10,11	15,15	11,11	
	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14	16,23.2	6,6	8,12
	14,18					

7U4E94 PowerPlex® FUSION 6C

Item						
2	15,15.3	17,25	10,11	15,15	11,11	
	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14	16,23.2	6,6	8,12
	14,18					

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 2 - STR Results

82R8NX — PowerPlex® Fusion, ESX 17 Fast

2					
15,15.3	17,25	10,11	15	11	
10	11,14	13,14	20,22	10,12	13
12	14,15	30	15,16	X,X	12
20,26	10,12	9,14	16,23.2	6	8,12
14,18					

8JXCCB — PowerPlex® FUSION (Familias 3.2)

2					
15,15.3	17,25	10,11	15	11	
10	11,14	13,14	20,22	10,12	13
12	14,15	30	15,16	X	12
20,26	10,12	9,14		6	8,12
14,18					

9ECAHA — GlobalFiler™

2					
15,15.3	17,25	10,11	15	11	
10	11,14	13,14	20,22	10,12	13
12	14,15	30	15,16	X	12
20,26			16,23.2	6	8,12
14,18					

AAK3Y2 — PowerPlex® Fusion-ESX17

2					
15,15.3	17,25	10,11	15,15	11,11	
10,10	11,14	13,14	20,22	10,12	13,13
12,12	14,15	30,30	15,16	X,X	12,12
20,26	10,12	9,14	16,23.2	6,6	8,12
14,18					

ALDLFT — Identifiler® Plus

2					
	17,25		15	11	
10	11,14			10,12	13
12	14,15	30		X	12
20,26				6	8,12
14,18					

AVGZXK — PowerPlex® Fusion

2					
15,15.3	17,25	10,11	15	11	
10	11,14	13,14	20,22	10,12	13
12	14,15	30	15,16	X	12
20,26	10,12	9,14		6	8,12
14,18					

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 2 - STR Results

B9Y9BW PowerPlex® Fusion 6C (GeneMarker HID)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
2	15,15.3	17,25	10,11	15	11	
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26	10,12	9,14	16,23.2	6	8,12
	14,18					

BBAQWM Identifiler® Plus

2		17,25		15,15	11,11	
	10,10	11,14			10,12	13,13
	12,12	14,15	30,30		X,X	12,12
	20,26				6,6	8,12
	14,18					

BEMXUL GlobalFiler™

2	15,15.3	17,25	10,11	15	11	
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26			16,23.2	6	8,12
	14,18					

BMF7EC GlobalFiler™

2	15,15.3	17,25	10,11	15	11	
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26			16,23.2	6	8,12
	14,18					

C2F64U PowerPlex® Fusion

2	15,15.3	17,25	10,11	15	11	
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26	10,12	9,14		6	8,12
	14,18	NR				

C79AVD GlobalFiler™

2	15,15.3	17,25	10,11	15,15	11,11	
	10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26				6,6	8,12

TABLE 1

WebCode / Item	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 2 - STR Results

CBHMDC — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,15.3	17,25	10,11	15	11	
10	11,14	13,14	20,22	10,12	13
12	14,15	30	15,16	X	12
20,26			16,23.2	6	8,12
14,18					

CDTABQ — GlobalFiler™ Express

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,15.3	17,25	10,11	15	11	-
10	11,14	13,14	20,22	10,12	13
12	14,15	30	15,16	X,X	12
20,26	-	-	16,23.2	6	8,12
14,18	-	-	-	-	

D7QETH — PowerPlex® Fusion

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,15.3	17,25	10,11	15	11	
10	11,14	13,14	20,22	10,12	13
12	14,15	30	15,16	X	12
20,26	10,12	9,14		6	8,12
14,18					

DMTEFC — PowerPlex® F6C

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,15.3	17,25	10,11	15,15	11,11	
10,10	11,14	13,14	20,22	10,12	13,13
12,12	14,15	30,30	15,16	X,X	12,12
20,26	10,12	9,14	16,23.2	6,6	8,12
14,18					

EAH7DK — PowerPlex® Fusion

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,15.3	17,25	10,11	15	11	
10	11,14	13,14	20,22	10,12	13
12	14,15	30	15,16	X,X	12
20,26	10,12	9,14		6	8,12
14,18					

EDJA4L — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
15,15.3	17,25	10,11	15	11	
10	11,14	13,14	20,22	10,12	13
12	14,15	30	15,16	X	12
20,26			16,23.2	6	8,12
14,18					

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 2 - STR Results

EMARJF GlobalFiler™

15,15.3	17,25	10,11	15	11	
10	11,14	13,14	20,22	10,12	13
12	14,15	30	15,16	X	12
20,26			16,23.2	6	8,12
14,18					

Item: 2

F97NYL PowerPlex® Fusion 6C

15,15.3	17,25	10,11	15	11	
10	11,14	13,14	20,22	10,12	13
12	14,15	30	15,16	X	12
20,26	10,12	9,14	16,23.2	6	8,12
14,18					

Item: 2

FC7X3V GlobalFiler™

15,15.3	17,25	10,11	15,15	11,11	
10,10	11,14	13,14	20,22	10,12	13,13
12,12	14,15	30,30	15,16	X,X	12,12
20,26			16,23.2	6,6	8,12
14,18					

Item: 2

GJYRBD PowerPlex® Fusion 5C

15,15.3	17,25	10,11	15	11	
10	11,14	13,14	20,22	10,12	13
12	14,15	30	15,16	X	12
20,26	10,12	9,14		6	8,12
14,18					

Item: 2

GLPQUH Identifiler®

	17,25		15,15	11,11	
10,10	11,14			10,12	13,13
12,12	14,15	30,30		X,X	12,12
20,26				6,6	8,12
14,18					

Item: 2

GUJZXL GlobalFiler™

15,15.3	17,25	10,11	15	11	
10	11,14	13,14	20,22	10,12	13
12	14,15	30	15,16	X	12
20,26			16,23.2	6	8,12
14,18					

Item: 2

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 2 - STR Results

GVCR88   GlobalFiler™

	D1/D7/D18/FGA/vWA	D2S1338/D8/D19/PentaD/DYS391	D2S441/D10/D21/PentaE/DYS570	D3/D12/D22/SE33/DYS576	D5/D13/Amelo/TH01/Y Indel	D6/D16/CSF/TPOX
	15,15.3	17,25	10,11	15	11	
2	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26			16,23.2	6	8,12
	14,18					

GVT93Z   PowerPlex® FUSION (ID-X-V1.4)

	15,15.3	17,25	10,11	15,15	11,11	
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14	13,14	6,6	8,12
	14,18					

GZB7WH   PowerPlex® Fusion 6C (DNA View)

	15,15.3	17,25	10,11	15,15	11,11	
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14	16,23.2	6,6	8,12
	14,18					

H83Z8L   Identifiler® plus

		17,25		15,15	11,11	
2	10,10	11,14			10,12	13,13
	12,12	14,15	30,30		X,X	12,12
	20,26				6,6	8,12
	14,18					

HGP7ZH

	15,15.3	17,25	10,11	15,15	11,11	11,11
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14	16,23.2	6,6	8,12
	14,18					

J6C2R2   PowerPlex® 21

	15,15.3	17,25		15,15	11,11	11,11
2	10,10	11,14		20,22	10,12	13,13
	12,12	14,15	30,30		X,X	12,12
	20,26	10,12	9,14		6,6	8,12
	14,18					

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 2 - STR Results

J6UC4F Identifiler® Direct

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
		17,25		15	11	
2	10	11,14			10,12	13
	12	14,15	30		X,X	12
	20,26				6	8,12
	14,18					

JFELR9 PowerPlex® Fusion 6C

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	
2	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26	10,12	9,14	16,23.2	6	8,12
	14,18	NR	NR	NR		

JG6K9T PowerPlex® FUSION, ESX17, GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	
2	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X,X	12
	20,26	10,12	9,14	16,23.2	6	8,12
	14,18					

JZJYLG GlobalFiler™ Express

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	-
2	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X,X	12
	20,26	-	-	16,23.2	6	8,12
	14,18	-	-	-	-	

KD6V36 PowerPlex® Fusion 5C

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	
2	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26	10,12	9,14		6	8,12
	14,18					

KF667F GlobalFiler™ Express

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	-
2	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X,X	12
	20,26	-	-	16,23.2	6	8,12
	14,18	-	-	-	-	

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 2 - STR Results

KHV4PK	PowerPlex® Fusion					
	15,15.3	17,25	10,11	15	11	
2	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26	10,12	9,14		6	8,12
	14,18	NR				
KLVEHY	GlobalFiler™					
	15,15.3	17,25	10,11	15,15	11,11	
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26			16,23.2	6,6	8,12
	14,18					
KNMB8T	GlobalFiler™ Express					
	15,15.3	17,25	10,11	15,15	11,11	
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26			16,23.2	6,6	8,12
	14,18					
LA4PAE	PowerPlex® Fusion 6C					
	15,15.3	17,25	10,11	15,15	11,11	
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14	16,23.2	6,6	8,12
	14,18					
MRZE4M	PowerPlex® FUSION 6C					
	15,15.3	17,25	10,11	15,15	11,11	
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14	16,23.2	6,6	8,12
	14,18					
NB6ABK	PowerPlex® fusion 6c					
	15,15.3	17,25	10,11	15,15	11,11	
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14	16,23.2	6,6	8,12
	14,18					

TABLE 1

WebCode / Item	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 2 - STR Results

NDBH43 — GlobalFiler™

Item						
2	15,15.3	17,25	10,11	15,15	11,11	
	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26			16,23.2	6,6	8,12
	14,18					

NMYQYL — PowerPlex® FUSION 6C

Item						
2	15,15.3	17,25	10,11	15,15	11,11	
	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14	16,23.2	6,6	8,12
	14,18					

P6RB6A — GlobalFiler™

Item						
2	15,15.3	17,25	10,11	15	11	
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26			16,23.2	6	8,12
	14,18	NR			NR	

PBYXXD — PowerPlex® Fusion 5C

Item						
2	15,15.3	17,25	10,11	15	11	
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26	10,12	9,14		6	8,12
	14,18	--				

PV78XB — GlobalFiler™ Express

Item						
2	15,15.3	17,25	10,11	15	11	--
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X,X	12
	20,26	--	--	16,23.2	6	8,12
	14,18	--	--	--	--	

Q26C6K — Verifiler

Item						
2	15,15.3	17,25	10,11	15,15	11,11	11,11
	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14		6,6	8,12
	14,18					

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 2 - STR Results

QM9X7C   GlobalFiler™ Express

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
2	15,15.3	17,25	10,11	15	11	
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26			16,23.2	6	8,12
	14,18					

QR4Q3R   GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
2	15,15.3	17,25	10,11	15,15	11,11	
	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26			16,23.2	6,6	8,12
	14,18					

QTVMQL   Identifiler® Plus

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
2		17,25		15,15	11,11	
	10,10	11,14			10,12	13,13
	12,12	14,15	30,30		X,X	12,12
	20,26				6,6	8,12
	14,18					

QUB7BJ   PowerPlex® Fusion 6C (Genemarker HID)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
2	15,15.3	17,25	10,11	15	11	
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26	10,12	9,14	16,23.2	6	8,12
	14,18					

RHZB3A   PowerPlex® FUSION 6C

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
2	15,15.3	17,25	10,11	15,15	11,11	
	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14	16,23.2	6,6	8,12
	14,18					

RRJ8VZ   GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
2	15,15.3	17,25	10,11	15,15	11,11	
	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26			16,23.2	6,6	8,12
	14,18					

TABLE 1

WebCode / Item	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 2 - STR Results

RZECN2 — GlobalFiler™ (Item 2)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26			16,23.2	6	8,12
	14,18	-			-	

TYC274 — PowerPlex® Fusion (Item 2)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26	10,12	9,14		6	8,12
	14,18					

VAN9U3 — GlobalFiler™ (Item 2)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26			16,23.2	6	8,12
	14,18					

VURUWU — GlobalFiler™ (Item 2)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15,15	11,11	
	10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26				6,6	8,12

VZKTDB — Qiagen Investigator ESSPlex SE Plus (Item 2)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15,15		
		11,14	13,14	20,22		13,13
	12,12	14,15	30,30	15,16	X,X	
	20,26			16,23.2	6,6	
	14,18					

W2QX44 — PowerPlex® Fusion 6C (Item 2)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	
	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26	10,12	9,14	16,23.2	6	8,12
	14,18					

TABLE 1

WebCode / Item	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 2 - STR Results

WHXYX7 — Identifiler®

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
		17,25		15,15	11,11	
2	10,10	11,14			10,12	13,13
	12,12	14,15	30,30		X,X	12,12
	20,26				6,6	8,12
	14,18					

WTVTB3 — GlobalFiler™ Express

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15,15	11,11	
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26			16,23.2	6,6	8,12
	14,18	0			0	

XJLQP3 — GlobalFiler™

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	
2	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26			16,23.2	6	8,12
	14,18	-			-	

XU8R6C — Identifiler® Plus, GlobalFiler™

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15,15	11,11	
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26			16,23.2	6,6	8,12
	14,18					

Y4QLWY — GlobalFiler™

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	
2	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26			16,23.2	6	8,12
	14,18	-			-	

Z6GBDX — GlobalFiler™

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15	11	
2	10	11,14	13,14	20,22	10,12	13
	12	14,15	30	15,16	X	12
	20,26			16,23.2	6	8,12
	14,18					

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 2 - STR Results

ZCGQZK — GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15,15	11,11	
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26			16,23.2	6,6	8,12
	14,18					

ZD9PG4 — Identifiler® Plus

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
		17,25		15,15	11,11	
2	10,10	11,14			10,12	13,13
	12,12	14,15	30,30		X,X	12,12
	20,26				6,6	8,12
	14,18					

ZHNEB9 — PowerPlex® FUSION 6C

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25	10,11	15,15	11,11	
2	10,10	11,14	13,14	20,22	10,12	13,13
	12,12	14,15	30,30	15,16	X,X	12,12
	20,26	10,12	9,14	16,23.2	6,6	8,12
	14,18					

ZPMML8 — PowerPlex® PP21

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	15,15.3	17,25		15	11	11
2	10	11,14		20,22	10,12	13
	12	14,15	30		X	12
	20,26	10,12	9,14		6	8,12
	14,18					

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 3 - STR Results

2MTFF2 — PowerPlex® Fusion

11,16	19,25	10,12	15,15	7,12	
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,>25		9,9	8,8
11,16	10				

Item: 3

3BGA2R — PowerPlex® Fusion

11,16	19,25	10,12	15	7,12	
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,>24		9	8
11,16	10				

Item: 3

3Y4A6Y — Identifiler® Direct, PowerPlex® FUSION, 21, ESX17, ESI17, CS7, NGM SElect

11,16	19,25	10,12	15	7,12	12
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,26	23.2,29.2	9	8
11,16	10	17	18		

Item: 3

489GJY — GlobalFiler™

11,16	19,25	10,12	15,15	7,12	
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22			23.2,29.2	9,9	8,8
11,16	10			2	

Item: 3

4BE3C6 — PowerPlex®

11,16	19,25	10,12	15,15	7,12	
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,9		9,9	8,8
11,16	10				

Item: 3

4BP4X4 — Identifiler®, NGMSElect

11,16	19,25	10,12	15	7,12	
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22			23.2,29.2	9	8
11,16					

Item: 3

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 3 - STR Results

6GJF4W	PowerPlex® FUSION 6C					
	11,16	19,25	10,12	15,15	7,12	
3	10,10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26	23.2,29.2	9,9	8,8
	11,16	10	17	18		

6JYTB3	PowerPlex® FUSION SYSTEM, Qiagen HDPlex (GeneMapper ID v. 3.2.1)					
	11,16	19,25	10,12	15,15	7,12	
3	10,10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26	23.2,29.2	9,9	8,8
	11,16	10	17	18		

6MX483	PowerPlex® Fusion System, NGMSElect					
	11,16	19,25	10,12	15	7,12	
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26	23.2,29.2	9	8
	11,16	10				

6WCT8V	PowerPlex® Fusion 6C					
	11,16	19,25	10,12	15	7,12	
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26	23.2,29.2	9	8
	11,16	10	17	18		

78PUB3	PowerPlex® FUSION 6C					
	11,16	19,25	10,12	15,15	7,12	
3	10,10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26	23.2,29.2	9,9	8,8
	11,16	10	17	18		

7U4E94	PowerPlex® FUSION 6C					
	11,16	19,25	10,12	15,15	7,12	
3	10,10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26	23.2,29.2	9,9	8,8
	11,16	10	17	18		

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 3 - STR Results

82R8NX — PowerPlex® Fusion, ESX 17 Fast

11,16	19,25	10,12	15	7,12	
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9	23.2,29.2	9	8
11,16	10				

Item: 3

8JXCCB — PowerPlex® FUSION (Familias 3.2)

11,16	19,25	10,12	15	7,12	
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,26		9	8
11,16	10				

Item: 3

9ECAHA — GlobalFiler™

11,16	19,25	10,12	15	7,12	
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22			23.2,29.2	9	8
11,16	10			2	

Item: 3

AAK3Y2 — PowerPlex® Fusion-ESX17, CS7

11,16	19,25	10,12	15,15	7,12	
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,26	23.2,29.2	9,9	8,8
11,16	10				

Item: 3

ALDLFT — Identifiler® Plus

	19,25		15	7,12	
10	11,14			9,12	12,13
14,20	13,14	29,30		X,Y	10,11
20,22				9	8
11,16					

Item: 3

AVGZXK — PowerPlex® Fusion

11,16	19,25	10,12	15	7,12	
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,>24		9	8
11,16	10				

Item: 3

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
Item	**D1S1656**	**D2S1338**	**D2S441**	**D3S1358**	**D5S818**	**D6S1043**
	D7S820	**D8S1179**	**D10S1248**	**D12S391**	**D13S317**	**D16S539**
	D18S51	**D19S433**	**D21S11**	**D22S1045**	**Amelogenin**	**CSF1PO**
	FGA	**Penta D**	**Penta E**	**SE33**	**TH01**	**TPOX**
	vWA	**DYS391**	**DYS570**	**DYS576**	**Y Indel**	

Item 3 - STR Results

B9Y9BW   PowerPlex® Fusion 6C (GeneMarker HID)

	D1S1656 / D7S820 / D18S51 / FGA / vWA	D2S1338 / D8S1179 / D19S433 / Penta D / DYS391	D2S441 / D10S1248 / D21S11 / Penta E / DYS570	D3S1358 / D12S391 / D22S1045 / SE33 / DYS576	D5S818 / D13S317 / Amelogenin / TH01 / Y Indel	D6S1043 / D16S539 / CSF1PO / TPOX
3	11,16	19,25	10,12	15	7,12	
	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26	23.2,29.2	9	8
	11,16	10	17	18		

BBAQWM   Identifiler® Plus

3		19,25		15,15	7,12	
	10,10	11,14			9,12	12,13
	14,20	13,14	29,30		X,Y	10,11
	20,22				9,9	8,8
	11,16					

BEMXUL   GlobalFiler™

3	11,16	19,25	10,12	15	7,12	
	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9	8
	11,16	10			2	

BMF7EC   GlobalFiler™

3	11,16	19,25	10,12	15	7,12	
	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9	8
	11,16	10			2	

C2F64U   PowerPlex® Fusion

3	11,16	19,25	10,12	15	7,12	
	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26		9	8
	11,16	10				

C79AVD   GlobalFiler™

3	11,16	19,25	10,12	15,15	7,12	
	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22				9,9	8,8
		10			2	

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 3 - STR Results

CBHMDC	GlobalFiler™					
	11,16	19,25	10,12	15	7,12	
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9	8
	11,16	10			2	

CDTABQ	GlobalFiler™ Express					
	11,16	19,25	10,12	15	7,12	-
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	-	-	23.2,29.2	9	8
	11,16	10	-	-	2	

D7QETH	PowerPlex® Fusion					
	11,16	19,25	10,12	15	7,12	
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,>24		9	8
	11,16	10				

DMTEFC	PowerPlex® F6C					
	11,16	19,25	10,12	15,15	7,12	
3	10,10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26	23.2,29.2	9,9	8,8
	11,16	10	17	18		

EAH7DK	PowerPlex® Fusion					
	11,16	19,25	10,12	15	7,12	
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26		9	8
	11,16	10				

EDJA4L	GlobalFiler™					
	11,16	19,25	10,12	15	7,12	
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9	8
	11,16	10			2	

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 3 - STR Results

EMARJF — GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	11,16	19,25	10,12	15	7,12	
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9	8
	11,16	10			2	

F97NYL — PowerPlex® Fusion 6C

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	11,16	19,25	10,12	15	7,12	
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26	23.2,29.2	9	8
	11,16	10	17	18		

FC7X3V — GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	11,16	19,25	10,12	15,15	7,12	
3	10,10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9,9	8,8
	11,16	10			2	

GJYRBD — PowerPlex® Fusion 5C

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	11,16	19,25	10,12	15	7,12	
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,>24		9	8
	11,16	10				

GLPQUH — Identifiler®

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
		19,25		15,15	7,12	
3	10,10	11,14			9,12	12,13
	14,20	13,14	29,30		X,Y	10,11
	20,22				9,9	8,8
	11,16					

GUJZXL — GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	11,16	19,25	10,12	15	7,12	
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9	8
	11,16	10			2	

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 3 - STR Results

GVCR88   GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
11,16	19,25	10,12	15	7,12	
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22			23.2,29.2	9	8
11,16	10			2	

Item: 3

GVT93Z   PowerPlex® fusion (ID-X-V1.4)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
11,16	19,25	10,12	15,15	7,12	
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,9	23.2,29.2	9,9	8,8
11,16	10,10			2,2	

Item: 3

GZB7WH   PowerPlex® Fusion 6C (DNA view)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
11,16	19,25	10,12	15,15	7,12	
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,26	23.2,29.2	9,9	8,8
11,16	10	17	18		

Item: 3

H83Z8L   Identifiler® plus

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	19,25		15,15	7,12	
10,10	11,14			9,12	12,13
14,20	13,14	29,30		X,Y	10,11
20,22				9,9	8,8
11,16					

Item: 3

HGP7ZH

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
11,16	19,25	10,12	15,15	7,12	12,12
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,26	23.2,29.2	9,9	8,8
11,16	10			2	

Item: 3

J6C2R2   PowerPlex® 21

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
11,16	19,25		15,15	7,12	12,12
10,10	11,14		19,20	9,12	12,13
14,20	13,14	29,30		X,Y	10,11
20,22	12,13	9,26		9,9	8,8
11,16					

Item: 3

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 3 - STR Results

J6UC4F — Identifiler® Direct (DNA View 37.33) — Item 3

		19,25			15	7,12
3	10	11,14			9,12	12,13
	14,20	13,14	29,30		X,Y	10,11
	20,22				9	8
	11,16					

JFELR9 — PowerPlex® Fusion 6C — Item 3

	11,16	19,25	10,12	15	7,12	
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26	23.2,29.2	9	8
	11,16	10	17	18		

JG6K9T — PowerPlex® FUSION, ESX17, GlobalFiler™, VeriFiler™ — Item 3

	11,16	19,25	10,12	15	7,12	12
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26	23.2,29.2	9	8
	11,16	10			2	

JZJYLG — GlobalFiler™ Express — Item 3

	11,16	19,25	10,12	15	7,12	-
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	-	-	23.3,29.2	9	8
	11,16	10	-	-	2	

KD6V36 — PowerPlex® Fusion 5C — Item 3

	11,16	19,25	10,12	15	7,12	
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13			9	8
	11,16	10				

KF667F — GlobalFiler™ Express — Item 3

	11,16	19,25	10,12	15	7,12	-
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	-	-	23.2,29.2	9	8
	11,16	10	-	-	2	

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 3 - STR Results

KHV4PK — PowerPlex® Fusion

11,16	19,25	10,12	15	7,12	
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,26		9	8
11,16	10				

(Item 3)

KLVEHY — GlobalFiler™

11,16	19,25	10,12	15,15	7,12	
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22			23.2,29.2	9,9	8,8
11,16	10			2	

(Item 3)

KNMB8T — GlobalFiler™ Express

11,16	19,25	10,12	15,15	7,12	
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22			23.2,29.2	9,9	8,8
11,16	10			2	

(Item 3)

LA4PAE — PowerPlex® Fusion 6C

11,16	19,25	10,12	15,15	7,12	
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,26	23.2,29.2	9,9	8,8
11,16	10	17	18		

(Item 3)

MRZE4M — PowerPlex® FUSION 6C

11,16	19,25	10,12	15,15	7,12	
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,26	23.2,29.2	9,9	8,8
11,16	10	17	18		

(Item 3)

NB6ABK — PowerPlex® fusion 6c

11,16	19,25	10,12	15,15	7,12	
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,26	23.2,29.2	9,9	8,8
11,16	10	17	18		

(Item 3)

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 3 - STR Results

NDBH43 — GlobalFiler™

11,16	19,25	10,12	15,15	7,12	
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22			23.2,29.2	9,9	8,8
11,16	10			2	

NMYQYL — PowerPlex® FUSION 6C

11,16	19,25	10,12	15,15	7,12	
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,26	23.2,29.2	9,9	8,8
11,16	10	17	18		

P6RB6A — GlobalFiler™

11,16	19,25	10,12	15	7,12	
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22			23.2,29.2	9	8
11,16	10			2	

PBYXXD — PowerPlex® Fusion 5C

11,16	19,25	10,12	15	7,12	
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,26		9	8
11,16	10				

PV78XB — GlobalFiler™ Express

11,16	19,25	10,12	15	7,12	-
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	-	-	23.2,29.2	9	8
11,16	10	-	-	2	

Q26C6K — Verifiler

11,16	19,25	10,12	15,15	7,12	12,12
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,26		9,9	8,8
11,16				2	

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 3 - STR Results

QM9X7C	GlobalFiler™ Express					
	11,16	19,25	10,12	15	7,12	
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9	8
	11,16	10			2	

QR4Q3R	GlobalFiler™					
	11,16	19,25	10,12	15,15	7,12	
3	10,10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9,9	8,8
	11,16	10			2	

QTVMQL	Identifiler® Plus					
		19,25		15,15	7,12	
3	10,10	11,14			9,12	12,13
	14,20	13,14	29,30		X,Y	10,11
	20,22				9,9	8,8
	11,16					

QUB7BJ	PowerPlex® Fusion 6C (Genemarker HID)					
	11,16	19,25	10,12	15	7,12	
3	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26	23.2,29.2	9	8
	11,16	10	17	18		

RHZB3A	PowerPlex® FUSION 6C					
	11,16	19,25	10,12	15,15	7,12	
3	10,10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26	23.2,29.2	9,9	8,8
	11,16	10	17	18		

RRJ8VZ	GlobalFiler™					
	11,16	19,25	10,12	15,15	7,12	
3	10,10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9,9	8,8
	11,16	10			2	

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 3 - STR Results

RZECN2 GlobalFiler™

11,16	19,25	10,12	15	7,12	
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22			23.2,29.2	9	8
11,16	10			2	

Item: 3

TYC274 PowerPlex® Fusion

11,16	19,25	10,12	15	7,12	
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,>24		9	8
11,16	10				

Item: 3

VAN9U3 GlobalFiler™

11,16	19,25	10,12	15	7,12	
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22			23.2,29.2	9	8
11,16	10			2	

Item: 3

VURUWU GlobalFiler™

11,16	19,25	10,12	15,15	7,12	
10,10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22				9,9	8,8
	10			2	

Item: 3

VZKTDB Qiagen Investigator ESSPlex SE Plus

11,16	19,25	10,12	15,15		
	11,14	13,14	19,20		12,13
14,20	13,14	29,30	15,17	X,Y	
20,22			23.2,29.2	9,9	
11,16					

Item: 3

W2QX44 PowerPlex® Fusion 6C

11,16	19,25	10,12	15	7,12	
10	11,14	13,14	19,20	9,12	12,13
14,20	13,14	29,30	15,17	X,Y	10,11
20,22	12,13	9,26	23.2,29.2	9	8
11,16	10	17	18		

Item: 3

TABLE 1

WebCode / Item	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 3 - STR Results

WHXYX7   Identifiler®

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
3		19,25		15,15	7,12	
	10,10	11,14			9,12	12,13
	14,20	13,14	29,30		X,Y	10,11
	20,22				9,9	8,8
	11,16					

WTVTB3   GlobalFiler™ Express

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
3	11,16	19,25	10,12	15,15	7,12	
	10,10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9,9	8,8
	11,16	10			2	

XJLQP3   GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
3	11,16	19,25	10,12	15	7,12	
	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9	8
	11,16	10			2	

XU8R6C   Identifiler® Plus, GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
3	11,16	19,25	10,12	15,15	7,12	
	10,10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9,9	8,8
	11,16	10			2	

Y4QLWY   GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
3	11,16	19,25	10,12	15	7,12	
	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9	8
	11,16	10			2	

Z6GBDX   GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
3	11,16	19,25	10,12	15	7,12	
	10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9	8
	11,16	10			2	

TABLE 1

WebCode	Amplification Kits (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Item	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
	FGA	Penta D	Penta E	SE33	TH01	TPOX
	vWA	DYS391	DYS570	DYS576	Y Indel	

Item 3 - STR Results

ZCGQZK	GlobalFiler™					
	11,16	19,25	10,12	15,15	7,12	
3	10,10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22			23.2,29.2	9,9	8,8
	11,16	10			2	

ZD9PG4	Identifiler® Plus					
		19,25		15,15	7,12	
3	10,10	11,14			9,12	12,13
	14,20	13,14	29,30		X,Y	10,11
	20,22				9,9	8,8
	11,16					

ZHNEB9	PowerPlex® FUSION 6C					
	11,16	19,25	10,12	15,15	7,12	
3	10,10	11,14	13,14	19,20	9,12	12,13
	14,20	13,14	29,30	15,17	X,Y	10,11
	20,22	12,13	9,26	23.2,29.2	9,9	8,8
	11,16	10	17	18		

ZPMML8	PowerPlex® PP21					
	11,16	19,25		15	7,12	12
3	10	11,14		19,20	9,12	12,13
	14,20	13,14	29,30		X,Y	10,11
	20,22	12,13	9,OL		9	8
	11,16					

Item 3 Paternity Index Results

TABLE 2

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

Item 3PI - Paternity Index Results

3Y4A6Y NIST-STRBASE

	Exclusion	2.01709	Exclusion	3.10526	Exclusion	Exclusion
3PI	3.25517	1.90323	1.47500	Exclusion	1.49367	3.74603
	Exclusion	1.02165	1.82946	1.17413		Exclusion
	5.90000	3.17568	29.50000	21.45455	Exclusion	1.69784
	Exclusion					

489GJY NIST-STRBASE

	-	-	-	-	-	
3PI	-	-	-	-	-	-
	-	-	-	-		-
	-			-	-	-
	-					

4BP4X4 NIST-STRBASE

	0	2.016		3.105	0	
3PI	3.255	1.903	1.474	0	0.406	3.745
	0	1.021	1.829	1.174		0
	5.903			21.459	0	1.697
	0					

6JYTB3 [Country-specific ethnicity]/ Caucasian

	0	1.6835	0	4.2826	0	
3PI	161.2903	2.1929	1.3158	0	1.5673	2.6838
	0	0.8970	2.0467	1.5532		0
	3.5335	2.1459	131.5789	11.1111	0	1.7385
	0					

6MX483 Local Database

		1.52		4.00		
3PI	3.47	2.50	1.49		1.87	2.44
		0.92	2.10	1.34		
	3.79	3.13	31.25	12.69		1.72

6WCT8V NIST-STRBASE

	0	2.01	0	3.10	0	
3PI	3.25	1.90	1.47	0	1.49	3.74
	0	1.02	1.82	1.17		0
	5.90	3.17	29.5	21.4	0	1.69
	0					

TABLE 2

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

Item 3PI - Paternity Index Results

8JXCCB — NIST-STRBASE

0	2.0169	0	3.1056	0	
3.2552	1.9033	1.4749	0	1.4934	3.7453
0	1.0216	1.8295	1.1743		0
5.9032	3.1766	29.5858		0	1.6978
0					

9ECAHA — FBI PopStats

	2.0687		2.3485		
3.2658	2.0292	1.4120		1.5833	4.9751
	1.1677	1.5480	1.1809		
7.2046			41.667		1.5425

ALDLFT — NIST-STRBASE

	2.02		3.11	0	
3.26	1.90			1.49	3.75
0	1.02	1.83			0
5.90				0	1.7
0					

B9Y9BW — NIST-STRBASE

0.00	2.02	0.00	3.11	0.00	
3.26	1.90	1.47	0.00	1.49	3.75
0.00	1.02	1.83	1.17		0.00
5.90	3.07	29.60	21.50	0.00	1.70
0.00					

BBAQWM — NIST-STRBASE

	2.06931		2.34832	0.0	
3.26563	2.02913			1.58334	4.97621
0.0	1.1676	1.54815			0.0
7.2069				0.0	1.54244
0.0					

C79AVD — NIST-STRBASE

0	2.01	0	3.10	0	
3.25	1.90	1.47	0	1.49	3.74
0	1.02	1.82	1.17		0
5.90				0	1.69

TABLE 2

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

Item 3PI - Paternity Index Results

CDTABQ — NIST-STRBASE

3PI						
0.0028	2.0169		3.1056	0.0010	-
3.2552	1.9033	1.4749	0.0028	1.4934	3.7453
0.0030	1.0217	1.8295	1.1743		0.0030
5.9032	-	-	21.4592	0.000	1.6977
0.0030					

DMTEFC — FBI PopStats

3PI						
	1.6041		2.9386		
3.7566	2.3912	1.6540		1.5115	2.6302
	1.1585	1.9335	1.1740		
4.5331	2.5786	52.632	15.480		1.8139

EAH7DK — FBI PopStats

3PI						
0.000	1.919	0.000	2.349	0.000	
3.266	2.030	1.475	0.000	1.573	4.951
0.000	1.136	1.515	1.174		0.000
7.246	2.717	38.462		0.000	1.543
0.000					

EDJA4L — Life Technologies Database

3PI						
	1.90		2.55	0	
3.65	1.91			1.67	4.33
0	1.11	1.71			0
6.75				0	1.66
0					

F97NYL — NIST-STRBASE

3PI						
0	2.017	0	3.105	0	
3.255	1.903	1.475	0	1.493	3.746
0	1.021	1.829	1.174		0
5.9	3.175	29.5	21.454	0	1.697
0					

GVT93Z — NIST-STRBASE

3PI						
	3.97		4.22	0.00	
3.82	4.03918			0.79	4.44
0.00	1.05	2.77064			0.00
2.80				0.00	1.00
0.00					

TABLE 2

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

Item 3PI - Paternity Index Results

GZB7WH — NIST-STRBASE

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
0	2.0169	0	3.1056	0	
3.2552	1.9033	1.4749	0	1.4934	3.7453
0	1.0216	1.8295	1.1743		0
5.9032	3.1766	29.5858	21.4592	0	1.6978
0					

3PI

J6C2R2 — [Country] Caucasian

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
0				0	0
0					0
				0	
0					

3PI

J6UC4F — NIST-STRBASE

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	-		-	-	
-	-			-	-
-	-	-			-
-				-	-
-					

3PI

JZJYLG — NIST-STRBASE

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
0.0028	2.0169	0.0028	3.1056	0.0010	-
3.2552	1.9033	1.4749	0.0028	1.4934	3.7453
0.0030	1.0217	1.8295	1.1743		0.0030
5.9032	-	-	21.4592	0.000	1.6977
0.0030					

3PI

KF667F — NIST-STRBASE

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
0.0028	2.0169	0.0028	3.1056	0.0010	-
3.2552	1.9033	1.4749	0.0028	1.4934	3.7453
0.0030	1.0217	1.8295	1.1743		0.0030
5.9032	-	-	21.4592	0.0000	1.6977
0.0030					

3PI

KLVEHY — [Country] database

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
exc	1.68	1.49	3.80	exc	
4.05	2.69	1.51	4.19	1.47	2.90
exc	0.97	2.10	1.25		exc
3.62			18.21	exc	1.75
exc					

3PI

TABLE 2

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

Item 3PI - Paternity Index Results

NDBH43	NIST-STRBASE					
	0	2.0169	0	3.1056	0	
3PI	3.2552	1.9033	1.4749	0	1.4934	3.7453
	0	1.0217	1.8295	1.1743		0
	5.9032			N/A	0	1.6978
	N/A					

P6RB6A	Laboratory Specific Database					
	0.000	1.604	0.000	2.939	0.000	
3PI	3.757	2.391	1.654	0.000	1.511	2.630
	0.000	1.158	1.933	1.174		0.000
	4.533			15.480	0.000	1.814
	0.000					

PBYXXD	FBI PopStats, +Promega/NIST					
		1.88		2.34		
3PI	3.25	2.01	1.40		1.55	4.85
		1.12	1.51	1.2		
	7.02	3.14	42.1			1.53

PV78XB	NIST-STRBASE					
	0.0028	2.0169	0.0028	3.1056	0.0010	-
3PI	3.2552	1.9033	1.4749	0.0028	1.4934	3.7453
	0.0030	1.0217	1.8295	1.1743		0.0030
	5.9032	-	-	21.4592	0.0000	1.6977
	0.0030					

QUB7BJ	NIST-STRBASE					
	0.00	2.02	0.00	3.11	0.00	
3PI	3.26	1.90	1.47	0.00	1.49	3.75
	0.00	1.02	1.83	1.17		0.00
	5.90	3.07	29.6	21.5	0.00	1.70
	0.00					

RRJ8VZ	NIST-STRBASE					
	0	2.01	0	3.10	0	
3PI	3.25	1.90	1.47	0	1.49	3.74
	0	1.02	1.82	1.17		0
	5.90			NA	0	1.69
	NA					

TABLE 2

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

Item 3PI - Paternity Index Results

VAN9U3 — Local Specific Database

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
3PI	0.00	1.38	0.00	3.00	0.00	
	3.07	2.62	1.69	0.00	1.34	2.26
	0.00	0.89	1.66	1.41		0.00
	3.36			8.19	0.00	1.61
	0.00					

VURUWU — NIST-STRBASE, NIST 2017

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
3PI	0	2.01	0	3.10	0	
	3.25	1.90	1.47	0	1.49	3.74
	0	1.02	1.82	1.17		0
	5.90				0	1.69

VZKTDB — laboratory specific database

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
3PI	0	1.65	0	3.84		
		2.20	1.74	0		2.86
	0	1.10	2.52	1.29		
	3.79			14.57	0	
	0					

W2QX44 — NIST-STRBASE

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
3PI	0	2.01	0	3.10	0	
	3.25	1.90	1.47	0	1.49	3.74
	0	1.02	1.82	1.17		0
	5.9	3.17	29.5	21.4	0	1.69
	0					

WHXYX7 — NIST-STRBASE

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
3PI		2.02		3.11	0.00	
	3.26	1.90			1.49	3.75
	0.00	1.02	1.83			0.00
	5.90				0.00	1.70
	0.00					

WTVTB3 — NIST-STRBASE

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
3PI	0.00000	2.01709	0.00000	3.10526	0.00000	
	3.25517	1.90323	1.47500	0.00000	1.49367	3.74603
	0.00000	1.02165	1.82946	1.17413		0.00000
	5.90000			21.45455	0.00000	1.69784
	0.00000					

TABLE 2

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

Item 3PI - Paternity Index Results

XJLQP3 NIST-STRBASE

6.92E-07	2.22	3.36E-03	3.28	1.58E-03	
3.39	2.14	1.69	1.05E-03	1.37	3.65
2.40E-04	1.19	2.02	1.56		1.45E-03
5.66			1.79E+01	5.10E-05	1.93
2.78E-04					

3PI

XU8R6C NIST-STRBASE

0	2.0169	0	3.1056	0	
3.2552	1.9033	1.4749	0	1.4934	3.7453
0	1.0217	1.8295	1.1743		0
5.9032			21.4592	0	1.6978
0					

3PI

Y4QLWY FBI PopStats

0	1.939947001	0	2.938549062	0	
3.757138563	2.390914525	1.654090069	0	1.685499312	2.630000947
0	1.225913857	1.933824525	1.174105801		0
4.534489326			15.47077570 5	0	1.842289007
0					

3PI

ZPMML8 Promega

0	2.0169		3.1056	0	0
3.2552	1.9033		0	1.4934	3.7453
0	1.0217	1.8295			0
5.9032	3.0656	29.5858		0	1.6978
0					

3PI

YSTR Amplification Kit(s) & Results

TABLE 3

WebCode Item / Amplification Kit	DYF387S1 / DYS437 / DYS518	DYS19 / DYS438 / DYS533	DYS385 / DYS439 / DYS549	DYS389-I / DYS448 / DYS570	DYS389-II / DYS449 / DYS576	DYS390 / DYS456 / DYS627	DYS391 / DYS458 / DYS635	DYS392 / DYS460 / DYS643	DYS393 / DYS481 / Y GATA H4

Item 3 - YSTR Results

3BGA2R — Yfiler® (Item 3)

	DYF387S1/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/Y GATA H4
		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		
							23		12

3Y4A6Y — PowerPlex® Y 23 (Item 3)

	DYF387S1/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/Y GATA H4
		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		22
		12	13	17	18		23	10	12

6JYTB3 — PowerPlex® Y 23 (Item 3)

	DYF387S1/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/Y GATA H4
		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		22
		12	13	17	18		23	10	12

9ECAHA — Yfiler® plus (Item 3)

	DYF387S1/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/Y GATA H4
	35,36	14	11,14	14	30	25	10	13	13
	15	12	13	19	31	15	17	10	22
	37	12		17	18	23	23		12

AAK3Y2 — PowerPlex® Y 23 (Item 3)

	DYF387S1/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/Y GATA H4
		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		22
		12	13	17	18		23	10	12

AVGZXK — Yfiler® (Item 3)

	DYF387S1/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/Y GATA H4
		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		
							23		12

BBAQWM — Yfiler® (Item 3)

	DYF387S1/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/Y GATA H4
		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		
							23		12

BEMXUL — Yfiler® Plus (Item 3)

	DYF387S1/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/Y GATA H4
	35,36	14	11,14	14	30	25	10	13	13
	15	12	13	19	31	15	17	10	22
	37	12		17	18	23	23		12

BMF7EC — Yfiler® Plus (Item 3)

	DYF387S1/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/Y GATA H4
	35,36	14	11,14	14	30	25	10	13	13
	15	12	13	19	31	15	17	10	22
	37	12		17	18	23	23		12

CBHMDC — Yfiler® Plus (Item 3)

	DYF387S1/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/Y GATA H4
	35,36	14	11,14	14	30	25	10	13	13
	15	12	13	19	31	15	17	10	22
	37	12		17	18	23	23		12

TABLE 3

Item 3 - YSTR Results

WebCode Item / Amplification Kit	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	Y GATA H4
EAH7DK 3 — PowerPlex® Y 23		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		22
		12	13	17	18		23	10	12
EMARJF 3 — Yfiler® Plus	35,36	14	11,14	14	30	25	10	13	13
	15	12	13	19	31	15	17	10	22
	37	12		17	18	23	23		12
GJYRBD 3 — Yfiler®		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		
							23		12
GUJZXL 3 — Yfiler®		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		
							23		12
GVCR88 3 — Yfiler® Plus	35,36	14	11,14	14	30	25	10	13	13
	15	12	13	19	31	15	17	10	22
	37	12	13	17	18	23	23		12
GVT93Z 3 — PowerPlex® Y Y23		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		22
		12	13	17	18		23	10	12
HGP7ZH 3	35,36	14	11,14	14	30	25	10	13	13
	15	12	13	19	31	15	17	10	22
	37	12	13	17	18	23	23	10	12
JG6K9T 3 — Yfiler® Plus, PowerPlex® Y 23	35,36	14	11,14	14	30	25	10	13	13
	15	12	13	19	31	15	17	10	22
	37	12	13	17	18	23	23	10	12
KNMB8T 3 — PowerPlex® Y 23		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		22
		12	13	17	18		23	10	12
TYC274 3 — Yfiler®		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		
							23		12

TABLE 3

WebCode Item / Amplification Kit	DYF387S1 DYS437 DYS518	DYS19 DYS438 DYS533	DYS385 DYS439 DYS549	DYS389-I DYS448 DYS570	DYS389-II DYS449 DYS576	DYS390 DYS456 DYS627	DYS391 DYS458 DYS635	DYS392 DYS460 DYS643	DYS393 DYS481 Y GATA H4

Item 3 - YSTR Results

W2QX44 — PowerPlex® Y 23 (Item 3)

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		22
	12	13	17	18		23	10	12	

WTVTB3 — Yfiler® Plus (Item 3)

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	35,36	14	11,14	14	30	25	10	13	13
	15	12	13	19	31	15	17	10	22
	37	12		17	18	23	23		12

XJLQP3 — Yfiler® Plus (Item 3)

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	35,36	14	11,14	14	30	25	10	13	13
	15	12	13	19	31	15	17	10	22
	37	12		17	18	23	23		12

XU8R6C — Yfiler® (Item 3)

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		
						23			12

Y4QLWY — Yfiler® Plus (Item 3)

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	35,36	14	11,14	14	30	25	10	13	13
	15	12	13	19	31	15	17	10	22
	37	12		17	18	23	23		12

Z6GBDX — Yfiler® Plus (Item 3)

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	35,36	14	11,14	14	30	25	10	13	13
	15	12	13	19	31	15	17	10	22
	37	12		17	18	23	23		12

ZPMML8 — PowerPlex® Y Y23 (Item 3)

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
		14	11,14	14	30	25	10	13	13
	15	12	13	19		15	17		22
	12	13	17	18		23	10	12	

Additional DNA & PI Results

TABLE 4

Locus	WebCode	Item 1	Item 2	Item 3	Item 3 Paternity Index
D10S2325	6JYTB3	11,12	11,12	7,14	0
D21S2055	6JYTB3	19.1,25	19.1,26	16.1,31	0
D2S1360	6JYTB3	23,30	22,30	20,23	0
D3S1744	6JYTB3	19,19	14,19	17,20	0
D4S2366	6JYTB3	9,13	10,13	9,10	2.9762
D5S2500	6JYTB3	14,16	11,16	11,13	4.8544
D6S474	6JYTB3	13,13	13,13	16,17	0
D7S1517	6JYTB3	22,23	20,22	20,22	2.7322
D8S1132	6JYTB3	19,19	19,21	18,21	6.5359
F13A	ZPMML8	7	7	6,7	1.6502
F13A01	3Y4A6Y	7	7	6,7	1.62759
	GZB7WH	7,7	7,7	6,7	1.6276
	AAK3Y2			6,7	
F13B	3Y4A6Y	6,9	8,9	6,8	2.68182
	GZB7WH	6,9	8,9	6,8	2.6824
	ZPMML8	6,9	8,9	6,8	2.6824
FESFPS	3Y4A6Y	10,11	10,11	10,11	1.49841
	GZB7WH	10,11	10,11	10,11	1.4984
	ZPMML8	10,11	10,11	10,11	1.4984
	AAK3Y2			10,11	
LPL	3Y4A6Y	10,12	9,10	10,11	Exclusion
	GZB7WH	10,12	9,10	10,11	0
	ZPMML8	10,12	9,10	10,11	0
	AAK3Y2			10,11	
PENTA C	3Y4A6Y	10,12	10,12	9,12	1.81538
	GZB7WH	10,12	10,12	9,12	1.8155
	ZPMML8	10,12	10,12	9,12	1.8580
	AAK3Y2			9,12	

Paternity DNA Statistics

TABLE 5

WebCode	Combined Paternity Index	Probability of Paternity	Population Database Used
2MTFF2	n/a	n/a	
3Y4A6Y	0,00000	0,00000	NIST-STRBASE
489GJY	-	-	NIST-STRBASE
4BP4X4	0	0	NIST-STRBASE
6JYTB3	0	0%	[Country-specific ethnicity]/ Caucasian
6MX483	0.00	0.00%	Local Database
6WCT8V	0	not reported	NIST-STRBASE
8JXCCB	0	0	NIST-STRBASE
9ECAHA			FBI PopStats
AAK3Y2			NIST-STRBASE
ALDLFT	0	0	NIST-STRBASE
B9Y9BW	0.00	0%	NIST-STRBASE
BBAQWM	0.0	0.0	NIST-STRBASE
BEMXUL			FBI PopStats
C79AVD	0	0	NIST-STRBASE
CBHMDC			FBI PopStats
CDTABQ	0.0000	0.0000%	NIST-STRBASE
DMTEFC	N/A	N/A	FBI PopStats
EAH7DK	0.000	0.000%	FBI PopStats
EDJA4L	0.0	0	Life Technologies Database
F97NYL	0.000	Not reported	NIST-STRBASE
GLPQUH			[Country-specific] population
GVT93Z	3.33E-10	00000000%	NIST-STRBASE
GZB7WH	0	0	NIST-STRBASE
H83Z8L	NOT APPLICABLE	NOT APPLICABLE	LOCAL DATABASE
HGP7ZH	0	0	
J6C2R2	0	0	[Country] Caucasian

TABLE 5

WebCode	Combined Paternity Index	Probability of Paternity	Population Database Used
J6UC4F	-	-	NIST-STRBASE
JG6K9T			NIST-STRBASE
JZJYLG	0.0000	0.0000%	NIST-STRBASE
KF667F	0.0000	0.0000%	NIST-STRBASE
KLVEHY			[Country] database
KNMB8T	N/A		N/A
NDBH43	N/A	N/A	NIST-STRBASE
P6RB6A	0	0%	Laboratory Specific Database
PBYXXD	0	0%	FBI PopStats, +Promega/NIST
PV78XB	0.0000	0.0000%	NIST-STRBASE
Q26C6K			NIST-STRBASE
QTVMQL	n/a = Exclusion	n/a = Exclusion	n/a
QUB7BJ	0	0.00%	NIST-STRBASE
RRJ8VZ	0	0	NIST-STRBASE
VAN9U3	15677	99.9936218%	Local Specific Database
VURUWU	0	0	NIST-STRBASE, NIST 2017
VZKTDB	0	0	laboratory specific database
W2QX44	0.0E+00	N/A	NIST-STRBASE
WHXYX7	0.00	0.00%	NIST-STRBASE
WTVTB3	0.00000	0.00%	NIST-STRBASE
XJLQP3	6.23E-24	6.23E-24	NIST-STRBASE
XU8R6C	0	0	NIST-STRBASE
Y4QLWY	0	0	FBI PopStats
ZCGQZK	0	0	none used
ZD9PG4	Not applicable	Not applicable	Local Database
ZPMML8	0	0	Promega

Paternity Conclusions

TABLE 6

WebCode	Conclusion	WebCode	Conclusion
2MTFF2	Excluded	F97NYL	Excluded
3BGA2R	Excluded	FC7X3V	Excluded
3Y4A6Y	Excluded	GJYRBD	Excluded
489GJY	Excluded	GLPQUH	Excluded
4BE3C6	Excluded	GUJZXL	Excluded
4BP4X4	Excluded	GVCR88	Excluded
6GJF4W	Excluded	GVT93Z	Excluded
6JYTB3	Excluded	GZB7WH	Excluded
6MX483	Excluded	H83Z8L	Excluded
6WCT8V	Excluded	HGP7ZH	Excluded
78PUB3	Excluded	J6C2R2	Excluded
7U4E94	Excluded	J6UC4F	Excluded
82R8NX	Excluded	JFELR9	Excluded
8JXCCB	Excluded	JG6K9T	Excluded
9ECAHA	Excluded	JZJYLG	Excluded
AAK3Y2	Excluded	KD6V36	Excluded
ALDLFT	Excluded	KF667F	Excluded
AVGZXK	Excluded	KHV4PK	Excluded
B9Y9BW	Excluded	KLVEHY	Excluded
BBAQWM	Excluded	KNMB8T	Excluded
BEMXUL	Excluded	LA4PAE	Excluded
BMF7EC	Excluded	MRZE4M	Excluded
C2F64U	Excluded	NB6ABK	Excluded
C79AVD	Excluded	NDBH43	Excluded
CBHMDC	Excluded	NMYQYL	Excluded
CDTABQ	Excluded	P6RB6A	Excluded
D7QETH	Excluded	PBYXXD	Excluded
DMTEFC	Excluded	PV78XB	Excluded
EAH7DK	Excluded	Q26C6K	Excluded
EDJA4L	Excluded	QM9X7C	Excluded
EMARJF	Excluded	QR4Q3R	Excluded

TABLE 6

WebCode	Conclusion	WebCode	Conclusion
QTVMQL	Excluded		
QUB7BJ	Excluded		
RHZB3A	Excluded		
RRJ8VZ	Excluded		
RZECN2	Excluded		
TYC274	Excluded		
VAN9U3	Excluded		
VURUWU	Excluded		
VZKTDB	Excluded		
W2QX44	Excluded		
WHXYX7	Excluded		
WTVTB3	Excluded		
XJLQP3	Excluded		
XU8R6C	Excluded		
Y4QLWY	Excluded		
Z6GBDX	Excluded		
ZCGQZK	Excluded		
ZD9PG4	Excluded		
ZHNEB9	Excluded		
ZPMML8	Excluded		

Response Summary		Total: 82
Responses	Not Excluded	0
	Excluded	82
	Inconclusive	0

Kinship Likelihood Ratio Results

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D1S1656	3Y4A6Y	(2p+1/2)/4p	p=15	1.3367
	4BP4X4	(1+4p)/8p	p = 15	1.335
	6JYTB3	(1+4p)/8p	p=15	1.3356
	6MX483	(1+4p)/8p	p=15	1.335561
	8JXCCB	(1+4p)/8p	p=15	1.3356
	AAK3Y2	(K1+2K0a)/2a	15	1.335561497
	BBAQWM	(4p+1)/8p	p=15	1.336
	CDTABQ	(1+4p)/8p	p=15	1.335
	EAH7DK	((1/4p)+(((1)+(1))/2))/2	p=15	1.336
	EMARJF	(1+4p)/8p	p=15	1.3356
	GZB7WH	(1+4p)/8p	p=15	1.3356
	HGP7ZH	(1/4b(4a+1))/2ab	a=15, b=17.3	1.336
	J6UC4F	(1+4q)/8q	q=15	1.3356
	JG6K9T	(K1+2K0a)/2a	15	1.3355614973262
	JZJYLG	(1+4p)/8p	p=15	1.3356
	KF667F	(1+4p)/8p	p=15	1.3356
	KNMB8T	(1+4p)/8p	p=15	1.336
	PBYXXD	(1+4t)/8t	t=15	1.34
	PV78XB	(1+4p)/8p	p=15	1.3356
	Q26C6K	(0,5+0,5p)*q(2-q)+q*p(2-p)-0,5q*2pq	p=15, q=17.3	1.3
	VZKTDB	(1+4p)/8p	p = 15	1.33556
	WHXYX7	(1+4q)/8q	q = 15	1.336
	WTVTB3	(1+4t)/8t	t = 15	1.33556
	XU8R6C	(1+4p)/8p	p=15	1.336
	Y4QLWY	1+4p/8p	p=15	1.335561497
	ZPMML8	0.25+p/2p	p=15	1.3356

Statistical Analysis Summary of D1S1656

Likelihood Ratio (Grand Mean): **1.336**   Standard Deviation: **0.0009**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D2S1338	3Y4A6Y	1/2	different heterozygotes	0.5
	4BP4X4	1/2		0.5
	6JYTB3	2/4	p=19, q=24, r=16, s=17	0.5
	6MX483	1/2		0.5
	8JXCCB	1/2		0.5000
	AAK3Y2	K0		0.5
	BBAQWM	1/2		0.5
	CDTABQ	1/2	-	0.5000
	EAH7DK	((0)+(((1)+(1))/2))/2		0.500
	EMARJF	1/2		0.5
	GZB7WH	1/2		0.5
	HGP7ZH	ab/2ab	a=16, b=17	0.500
	J6UC4F	1/2		0.5
	JG6K9T	K0		0.5
	JZJYLG	1/2	-	0.5000
	KF667F	1/2	-	0.5000
	KNMB8T	1/2	N/A	0.5
	PBYXXD	1/2		0.5
	PV78XB	1/2	--	0.5000
	Q26C6K	p*q(2-q)+q*p(2-p)	p=16, q=17	0.53
	VZKTDB	0.5		0.5
	WHXYX7	1/2	N/A	0.5000
	WTVTB3	1/2		0.50000
	XU8R6C	1/2	-	0.5
	Y4QLWY	1/2	-	0.5
	ZPMML8			0.5

Statistical Analysis Summary of D2S1338

Likelihood Ratio (Grand Mean): **0.500**   Standard Deviation: **0.0000**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D2S441	3Y4A6Y	$(2p+1/2)/4p$	p=11	0.8639
	4BP4X4	$(1+4p)/8p$	p = 11	0.863
	6JYTB3	$(1+4p)/8p$	p=11	0.8639
	6MX483	$(1+4p)/8p$	p=11	0.863901
	8JXCCB	$(1+4p)/8p$	p=11	0.8639
	AAK3Y2	$(K1+2K0a)/2a$	11	0.863901019
	BBAQWM	$(4p+1)/8p$	p=11	0.864
	CDTABQ	$(1+4p)/8p$	p=11	0.8639
	EAH7DK	$((1/4p)+(((1)+(1))/2))/2$	p=11	0.864
	EMARJF	$(1+4p)/8p$	p=11	0.86390
	GZB7WH	$(1+4p)/8p$	p=11	0.8639
	HGP7ZH	$(1/4b(4a+1))/2ab$	a=11, b=11.3	0.864
	J6UC4F	$(1+4p)/8p$	p=11	0.8639
	JG6K9T	$(K1+2K0a)/2a$	11	0.863901019
	JZJYLG	$(1+4p)/8p$	p=11	0.8639
	KF667F	$(1+4p)/8p$	p=11	0.8639
	KNMB8T	$(1+4p)/8p$	p=11	0.864
	PBYXXD	$(1+4p)/8p$	p=11	0.86
	PV78XB	$(1+4p)/8p$	p=11	0.8639
	Q26C6K	$(0,5+0,5p)$ $*q(2-q)+q*p(2-p)-0,5q*2pq$	p=11, q=11.3	0.85
	VZKTDB	$(1+4p)/8p$	p = 11	0.8639
	WHXYX7	$(1+4p)/8p$	p = 11	0.8639
	WTVTB3	$(1+4p)/8p$	p = 11	0.86390
	XU8R6C	$(1+4p)/8p$	p=11	0.864
	Y4QLWY	$1+4p/8p$	p=11	0.863901018
	ZPMML8	$0.25+p/2p$	p=11	0.8639

Statistical Analysis Summary of D2S441

Likelihood Ratio (Grand Mean): **0.864**   Standard Deviation: **0.0008**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D3S1358	3Y4A6Y	(p/2+2pq+q/2)/4pq	p=14, q=15	2.1307
	4BP4X4	(p+q+4pq)/8pq	p = 14, q = 15	2.130
	6JYTB3	(p+q+4pq)/8pq	p=14, q=15	2.1307
	6MX483	(p+q+4pq)/8pq	p=14, q=15	2.130651
	8JXCCB	(p+q+4pq)/8pq	p=14, q=15	2.1307
	AAK3Y2	(K1a+K1b+K02ab)/2ab	14,15	2.130651119
	BBAQWM	(4pq+p+q)/8pq	p=14, q=15	2.131
	CDTABQ	(p+q+4pq)/8pq	p=14, q=15	2.1307
	EAH7DK	(((p+q)/4pq)+(((1)+(1))/2))/2	p=15, q=15	2.131
	EMARJF	(p+q+4pq)/8pq	p=14, q=15	2.1307
	GZB7WH	(p+q+4pq)/8pq	p = 14, q = 15	2.1307
	HGP7ZH	a+b+4ab/8ab	a=14, b=15	2.131
	J6UC4F	(p+q+4pq)/8pq	p=14, q=15	2.1307
	JG6K9T	(K1+K1b+K02ab)/2ab	14,15	2.130651119
	JZJYLG	(p+q+4pq)/8pq	p=14, q=15	2.1307
	KF667F	(p+q+4pq)/8pq	p=14, q=15	2.1307
	KNMB8T	(p+q+4pq)/8pq	p=14, q=15	2.131
	PBYXXD	(p+q+4pq)/8pq	p=14, q=15	2.13
	PV78XB	(p+q+4pq)/8pq	p=14, q=15	2.1307
	Q26C6K	(0,5+0,5p)*q(2-q)+(0,5+0,5q)*p(2-p)-0,5(p+q)*2pq	p=14, q=15	2.02
	VZKTDB	(p+q+4pq)/8pq	p = 14, q = 15	2.13065
	WHXYX7	(p+q+4pq)/8pq	p = 14, q = 15	2.131
	WTVTB3	(p+q+4pq)/8pq	p=14, q=15	2.13065
	XU8R6C	(p+q+4pq)/8pq	p=14, q=15	2.131
	Y4QLWY	(p+q+4pq)/8pq	p=14, q=15	2.130651119
	ZPMML8	0.25*p+0.25*q+pq/2pq	p=14, q=15	2.1306

Statistical Analysis Summary of D3S1358

Likelihood Ratio (Grand Mean): **2.131**   Standard Deviation: **0.0003**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D5S818	3Y4A6Y	$(1/2+p)/2p$	$p=12$	1.1447
	4BP4X4	$(1+2p)/4p$	$p = 12$	1.144
	6JYTB3	$(1+2p)/4p$	$p=12$	1.1447
	6MX483	$(2+4p)/8p$	$p=12$	1.144662
	8JXCCB	$(1+2p)/4p$	$p=12$	1.1447
	AAK3Y2	$(K1+K0a)/a$	12	1.144662197
	BBAQWM	$(2p+1)/4p$	$p=12$	1.145
	CDTABQ	$(1+2p)/4p$	$p=12$	1.1447
	EAH7DK	$((1/2p)+(((1)+(1))/2))/2$	$p=12$	1.145
	EMARJF	$(1+2p)/4p$	$p=12$	1.1447
	GZB7WH	$(1+2p)/4p$	$p=12$	1.1447
	HGP7ZH	$1/4a(2a+1)/a\char`\^2$	$a=12$	1.145
	J6UC4F	$(1+2p)/4p$	$p=12$	1.1447
	JG6K9T	$(K1+K0a)/a$	12	1.144662197
	JZJYLG	$(1+2p)/4p$	$p=12$	1.1447
	KF667F	$(1+2p)/4p$	$p=12$	1.1447
	KNMB8T	$(1+2p)/4p$	$p=12$	1.145
	PBYXXD	$(1+2p)/4p$	$p=12$	1.14
	PV78XB	$(1+2p)/4p$	$p=12$	1.1447
	Q26C6K	$(0,5+0,5p)*(p(2-p))$	$p=12$	1.11
	VZKTDB	$(1+2p)4p$	$p = 12$	1.14466
	WHXYX7	$(1+2p)/4p$	$p = 12$	1.145
	WTVTB3	$(1+2p)/4p$	$p=12$	1.14466
	XU8R6C	$(1+2p)/4p$	$p=12$	1.145
	Y4QLWY	$(1+2p)/4p$	$p=12$	1.144662197
	ZPMML8	$0.5+.25*p/p$	$p=12$	1.1447

Statistical Analysis Summary of D5S818

Likelihood Ratio (Grand Mean): **1.145**   Standard Deviation: **0.0010**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D7S820	3Y4A6Y	(2p+1/2)/4p	p=9	1.2458
	4BP4X4	(1+4p)/8p	p = 9	1.245
	6JYTB3	(1+4p)/8p	p=9	1.2458
	6MX483	(1+4p)/8p	p=9	1.245823
	8JXCCB	(1+4p)/8p	p=9	1.2458
	AAK3Y2	(K1+2K0a)/2a	9	1.245823389
	BBAQWM	(4p+1)/8p	p=9	1.246
	CDTABQ	(1+4p)/8p	p=9	1.2458
	EAH7DK	((1/4p)+(((1)+(1))/2))/2	p=9	1.246
	EMARJF	(1+4p)/8p	p=9	1.2458
	GZB7WH	(1+4p)/8p	p=9	1.2458
	HGP7ZH	(1/4b(4a+1))/2ab	a=9, b=11	1.246
	J6UC4F	(1+4p)/8p	p=9	1.2458
	JG6K9T	(K1+2K0a)/2a	9	1.245823389
	JZJYLG	(1+4p)/8p	p=9	1.2458
	KF667F	(1+4p)/8p	p=9	1.2458
	KNMB8T	(1+4p)/8p	p=9	1.246
	PBYXXD	(1+4p)/8p	p=9	1.25
	PV78XB	(1+4p)/8p	p=9	1.2458
	Q26C6K	(0,5+0,5p) *q(2-q)+q*p(2-p)-0,5q*2pq	p=9, q=11	1.22
	VZKTDB	(1+4p)/8p	p = 9	1.24582
	WHXYX7	(1+4r)/8r	r = 9	1.246
	WTVTB3	(1+4p)/8p	p=9	1.24582
	XU8R6C	(1+4p)/8p	p=9	1.246
	Y4QLWY	(1+4p)/8p	p=9	1.245823389
	ZPMML8	0.25+p/2p	p=9	1.2458

Statistical Analysis Summary of D7S820

Likelihood Ratio (Grand Mean): **1.246**   Standard Deviation: **0.0009**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D8S1179	3Y4A6Y	$(2q+1/2)/4q$	q=13	0.8792
	4BP4X4	$(1+4p)/8p$	p = 13	0.879
	6JYTB3	$(1+4p)/8p$	p=13	0.8792
	6MX483	$(1+4p)/8p$	p=13	0.879247
	8JXCCB	$(1+4p)/8p$	p=13	0.8792
	AAK3Y2	$(K1+2K0a)/2a$	13	0.879247573
	BBAQWM	$(4p+1)/8p$	p=13	0.879
	CDTABQ	$(1+4p)/8p$	p=13	0.8792
	EAH7DK	$((1/4q)+(((1)+(1))/2))/2$	q=13	0.879
	EMARJF	$(1+4p)/8p$	p=13	0.87925
	GZB7WH	$(1+4p)/8p$	p=13	0.8792
	HGP7ZH	$(1/4b(4a+1))/2ab$	a=13, b=11	0.879
	J6UC4F	$(1+4q)/8q$	q=13	0.8792
	JG6K9T	$(K1+2K0a)/2a$	13	0.879247573
	JZJYLG	$(1+4p)/8p$	p=13	0.8792
	KF667F	$(1+4p)/8p$	p=13	0.8792
	KNMB8T	$(1+4p)/8p$	p=13	0.879
	PBYXXD	$(1+4s)/8s$	s=13	0.88
	PV78XB	$(1+4p)/8p$	p=13	0.8792
	Q26C6K	$(0,5+0,5p)$ $*q(2-q)+q*p(2-p)-0,5q*2pq$	p=13, q=11	0.87
	VZKTDB	$(1+4p)/8p$	p = 13	0.87925
	WHXYX7	$(1+4r)/8r$	r = 13	0.8792
	WTVTB3	$(1+4s)/8s$	s=13	0.87925
	XU8R6C	$(1+4p)/8p$	p=13	0.879
	Y4QLWY	$(1+4p)/8p$	p=13	0.879247572
	ZPMML8	$0.25+p/2p$	p=13	0.8792

Statistical Analysis Summary of D8S1179	
Likelihood Ratio (Grand Mean): **0.879**	Standard Deviation: **0.0018**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D10S1248	3Y4A6Y	(2p+1/2)/4p	p=15	1.1355
	4BP4X4	(1+4p)/8p	p = 15	1.135
	6JYTB3	(1+4p)/8p	p=15	1.1355
	6MX483	(1+4p)/8p	p=15	1.135485
	8JXCCB	(1+4p)/8p	p=15	1.1355
	AAK3Y2	(K1+2K0a)/2a	15	1.135485511
	BBAQWM	(4p+1)/8p	p=15	1.135
	CDTABQ	(1+4p)/8p	p=15	1.1355
	EAH7DK	((1/4p)+(((1)+(1))/2))/2	p=15	1.136
	EMARJF	(1+4p)/8p	p=15	1.1355
	GZB7WH	(1+4p)/8p	p=15	1.1355
	HGP7ZH	(1/4b(4a+1))/2ab	a=15, b=16	1.135
	J6UC4F	(1+4q)/8q	q=15	1.1355
	JG6K9T	(K1+2K0a)/2a	15	1.135485511
	JZJYLG	(1+4p)/8p	p=15	1.1355
	KF667F	(1+4p)/8p	p=15	1.1355
	KNMB8T	(1+4p)/8p	p=15	1.135
	PBYXXD	(1+4r)/8r	r=15	1.14
	PV78XB	(1+4p)/8p	p=15	1.1355
	Q26C6K	(0,5+0,5p) *q(2-q)+q*p(2-p)-0,5q*2pq	p=15, q=16	1.11
	VZKTDB	(1+4p)/8p	p = 15	1.13549
	WHXYX7	(1+4q)/8q	q = 15	1.135
	WTVTB3	(1+4r)/8r	r=15	1.13549
	XU8R6C	(1+4p)/8p	p=15	1.135
	Y4QLWY	(1+4p)/8p	p=15	1.135485511
	ZPMML8	0.25+p/2p	p=15	1.1355

Statistical Analysis Summary of D10S1248

Likelihood Ratio (Grand Mean): **1.136**   Standard Deviation: **0.0010**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D12S391	3Y4A6Y	(1/2+p)/2p	p=19	2.5048
	4BP4X4	(1+2p)/4p	p = 19	2.504
	6JYTB3	(1+2p)/4p	p=19	2.5048
	6MX483	(2+4p)/8p	p=19	2.504811
	8JXCCB	(1+2p)/4p	p=19	2.5048
	AAK3Y2	(K1+K0a)/a	19	2.504811548
	BBAQWM	(2p+1)/4p	p=19	2.505
	CDTABQ	(1+2p)/4p	p=19	2.5048
	EAH7DK	((1/2p)+(((1)+(1))/2))/2	p=19	2.505
	EMARJF	Locus omitted		
	GZB7WH	(1+2p)/4p	p=19	2.5048
	HGP7ZH	$1/4a(2a+1)/a^2$	a=19	2.505
	J6UC4F	(1+2p)/4p	p=19	2.5048
	JG6K9T	(K1+K0a)/a	19	2.504811548
	JZJYLG	(1+2p)/4p	p=19	2.5048
	KF667F	(1+2p)/4p	p=19	2.5048
	KNMB8T	(1+2p)/4p	p=19	2.505
	PBYXXD	(1+2p)/4p	p=19	2.50
	PV78XB	(1+2p)/4p	p=19	2.5048
	Q26C6K	(0,5+0,5p)*(p(2-p))	p=19	2.4
	VZKTDB	(1+2p)4p	p = 19	2.50481
	WHXYX7	(1+2p)/4p	p = 19	2.505
	WTVTB3	(1+2p)/4p	p=19	2.50481
	XU8R6C	(1+2p)/4p	p=19	2.505
	Y4QLWY	(1+2p)/4p	p=19	2.504811548
	ZPMML8	0.5+.25*p/p	p=19	2.5048

Statistical Analysis Summary of D12S391

Likelihood Ratio (Grand Mean): **2.505**	Standard Deviation: **0.0010**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D13S317	3Y4A6Y	1/2	different heterozygotes	0.5
	4BP4X4	1/2		0.5
	6JYTB3	2/4	p=11, q=12, r=8, s=9	0.5
	6MX483	1/2		0.5
	8JXCCB	1/2		0.5000
	AAK3Y2	K0		0.5
	BBAQWM	1/2		0.5
	CDTABQ	1/2	-	0.5000
	EAH7DK	((0)+(((1)+(1))/2))/2		0.500
	EMARJF	1/2		0.5
	GZB7WH	1/2		0.5
	HGP7ZH	ab/2ab	a=8, b=9	0.500
	J6UC4F	1/2		0.5
	JG6K9T	K0		0.5
	JZJYLG	1/2	-	0.5000
	KF667F	1/2	--	0.500
	KNMB8T	1/2	N/A	0.5
	PBYXXD	1/2		0.5
	PV78XB	1/2	--	0.500
	Q26C6K	p*q(2-q)+q*p(2-p)	p=8, q=9	0.53
	VZKTDB	0.5		0.5
	WHXYX7	1/2	N/A	0.5000
	WTVTB3	1/2		0.50000
	XU8R6C	1/2	-	0.5
	Y4QLWY	1/2	-	0.5
	ZPMML8			0.5

Statistical Analysis Summary of D13S317

Likelihood Ratio (Grand Mean): **0.500**   Standard Deviation: **0.0000**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D16S539	3Y4A6Y	(2p+1/2)/4p	p=11	0.8976
	4BP4X4	(1+4p)/8p	p = 11	0.897
	6JYTB3	(1+4p)/8p	p=11	0.8976
	6MX483	(1+4p)/8p	p=11	0.897582
	8JXCCB	(1+4p)/8p	p=11	0.8976
	AAK3Y2	(K1+2K0a)/2a	11	0.897582697
	BBAQWM	(4p+1)/8p	p=11	0.898
	CDTABQ	(1+4p)/8p	p=11	0.8976
	EAH7DK	((1/4p)+(((1)+(1))/2))/2	p=11	0.878
	EMARJF	(1+4p)/8p	p=11	0.89758
	GZB7WH	(1+4p)/8p	p=11	0.8976
	HGP7ZH	(1/4b(4a+1))/2ab	a=11, b=12	0.898
	J6UC4F	(1+4p)/8p	p=11	0.8976
	JG6K9T	(K1+2K0a)/2a	11	0.897582697
	JZJYLG	(1+4p)/8p	p=11	0.8976
	KF667F	(1+4p)/8p	p=11	0.8976
	KNMB8T	(1+4p)/8p	p=11	0.898
	PBYXXD	(1+4p)/8p	p=11	0.90
	PV78XB	(1+4p)/8p	p=11	0.8976
	Q26C6K	(0,5+0,5p) *q(2-q)+q*p(2-p)-0,5q*2pq	p=11, q=12	0.93
	VZKTDB	(1+4p)/8p	p = 11	0.89758
	WHXYX7	(1+4p)/8p	p = 11	0.8976
	WTVTB3	(1+4p)/8p	p=11	0.89758
	XU8R6C	(1+4p)/8p	p=11	0.898
	Y4QLWY	(1+4p)/8p	p=11	0.897582697
	ZPMML8	0.25+p/2p	p=11	0.8976

Statistical Analysis Summary of D16S539

Likelihood Ratio (Grand Mean): **0.898**   Standard Deviation: **0.0005**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D18S51	3Y4A6Y	(2q+1/2)/4q	q=15	1.2336
	4BP4X4	(1+4p)/8p	p = 15	1.233
	6JYTB3	(1+4p)/8p	p=15	1.2336
	6MX483	(1+4p)/8p	p=15	1.233568
	8JXCCB	(1+4p)/8p	p=15	1.2336
	AAK3Y2	(K1+2K0a)/2a	15	1.233568075
	BBAQWM	(4p+1)/8p	p=15	1.234
	CDTABQ	(1+4p)/8p	p=15	1.2336
	EAH7DK	((1/4q)+(((1)+(1))/2))/2	q=15	1.234
	EMARJF	(1+4p)/8p	p=15	1.2336
	GZB7WH	(1+4p)/8p	p=15	1.2336
	HGP7ZH	(1/4b(4a+1))/2ab	a=15, b=12	1.234
	J6UC4F	(1+4q)/8q	q=15	1.2336
	JG6K9T	(K1+2K0a)/2a	15	1.233568075
	JZJYLG	(1+4p)/8p	p=15	1.2336
	KF667F	(1+4p)/8p	p=15	1.2336
	KNMB8T	(1+4p)/8p	p=15	1.234
	PBYXXD	(1+4s)/8s	s=15	1.23
	PV78XB	(1+4p)/8p	p=15	1.2336
	Q26C6K	(0,5+0,5p) *q(2-q)+q*p(2-p)-0,5q*2pq	p=15, q=12	1.20
	VZKTDB	(1+4p)/8p	p = 15	1.23357
	WHXYX7	(1+4r)/8r	r = 15	1.234
	WTVTB3	(1+4s)/8s	s=15	1.23357
	XU8R6C	(1+4p)/8p	p=15	1.234
	Y4QLWY	(1+4p)/8p	p=15	1.233568075
	ZPMML8	0.25+p/2p	p=15	1.2336

Statistical Analysis Summary of D18S51

Likelihood Ratio (Grand Mean): **1.234**   Standard Deviation: **0.0008**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D19S433	3Y4A6Y	$(1+2q)/4q$	$q=14$	1.1916
	4BP4X4	$(1+2p)/4p$	$p = 14$	1.191
	6JYTB3	$(1+2p)/4p$	$p=14$	1.1916
	6MX483	$(2+4p)/8p$	$p=14$	1.191562
	8JXCCB	$(1+2p)/4p$	$p=14$	1.1916
	AAK3Y2	$(K1+K0a)/a$	14	1.191562932
	BBAQWM	$(2p+1)/4p$	$p=14$	1.192
	CDTABQ	$(1+2p)/4p$	$p=14$	1.1916
	EAH7DK	$((1/2q)+(((1)+(1))/2))/2$	$q=14$	1.191
	EMARJF	$(1+2p)/4p$	$p=14$	1.1916
	GZB7WH	$(1+2p)/4p$	$p=14$	1.1916
	HGP7ZH	$1/2b(2a+1)/2ab$	$a=14, b=13$	1.192
	J6UC4F	$(1+2q)/4q$	$q=14$	1.1916
	JG6K9T	$(K1+K0a)/a$	14	1.191562932
	JZJYLG	$(1+2p)/4p$	$p=14$	1.1916
	KF667F	$(1+2p)/4p$	$p=14$	1.1916
	KNMB8T	$(1+2p)/4p$	$p=14$	1.192
	PBYXXD	$(1+2q)/4q$	$q=14$	1.19
	PV78XB	$(1+2p)/4p$	$p=14$	1.1916
	Q26C6K	$q(2-q)+q*(p(2-p)-2pq)$	$p=14,\ q=13$	1.11
	VZKTDB	$(1+4p)/8p$	$p = 14$	1.19156
	WHXYX7	$(1+2q)/4q$	$q = 14$	1.192
	WTVTB3	$(1+2q)/4q$	$q=14$	1.19156
	XU8R6C	$(1+2p)/4p$	$p=14$	1.192
	Y4QLWY	$(1+2p)/4p$	$p=14$	1.191562932
	ZPMML8	$0.5+.25*p/p$	$p=14$	1.1916

Statistical Analysis Summary of D19S433

Likelihood Ratio (Grand Mean): **1.192**   Standard Deviation: **0.0004**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D21S11	3Y4A6Y	$(2p+1/2)/4p$	p=28	1.2847
	4BP4X4	$(1+4p)/8p$	p = 28	1.284
	6JYTB3	$(1+4p)/8p$	p=28	1.2847
	6MX483	$(1+4p)/8p$	p=28	1.284682
	8JXCCB	$(1+4p)/8p$	p=28	1.2847
	AAK3Y2	$(K1+2K0a)/2a$	28	1.284682988
	BBAQWM	$(4p+1)/8p$	p=28	1.285
	CDTABQ	$(1+4p)/8p$	p=28	1.2847
	EAH7DK	$((1/4p)+(((1)+(1))/2))/2$	p=28	1.285
	EMARJF	$(1+4p)/8p$	p=28	1.2847
	GZB7WH	$(1+4p)/8p$	p=28	1.2847
	HGP7ZH	$(1/4b(4a+1))/2ab$	a=28, b=29	1.285
	J6UC4F	$(1+4p)/8p$	p=28	1.2847
	JG6K9T	$(K1+2K0a)/2a$	28	1.284682988
	JZJYLG	$(1+4p)/8p$	p=28	1.2847
	KF667F	$(1+4p)/8p$	p=28	1.2847
	KNMB8T	$(1+4p)/8p$	p=28	1.285
	PBYXXD	$(1+4p)/8p$	p=28	1.28
	PV78XB	$(1+4p)/8p$	p=28	1.2847
	Q26C6K	$(0,5+0,5p)$ $*q(2-q)+q*p(2-p)-0,5q*2pq$	p=28, q=29	1.26
	VZKTDB	$(1+4p)/8p$	p = 28	1.28468
	WHXYX7	$(1+4p)/8p$	p = 28	1.285
	WTVTB3	$(1+4p)/8p$	p=28	1.28468
	XU8R6C	$(1+4p)/8p$	p=28	1.285
	Y4QLWY	$(1+4p)/8p$	p=28	1.284682988
	ZPMML8	$0.25+p/2p$	p=28	1.2847

Statistical Analysis Summary of D21S11

Likelihood Ratio (Grand Mean): **1.285**   Standard Deviation: **0.0010**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D22S1045	3Y4A6Y	$(2q+1/2)/4q$	q=16	0.8270
	4BP4X4	$(1+4p)/8p$	p = 16	0.826
	6JYTB3	$(1+4p)/8p$	p=16	0.8270
	6MX483	$(1+4p)/8p$	p=16	0.826968
	8JXCCB	$(1+4p)/8p$	p=16	0.8270
	AAK3Y2	$(K1+2K0a)/2a$	16	0.826968349
	BBAQWM	$(4p+1)/8p$	p=16	0.827
	CDTABQ	$(1+4p)/8p$	p=16	0.8270
	EAH7DK	$((1/4q)+(((1)+(1))/2))/2$	q=16	0.8270
	EMARJF	$(1+4p)/8p$	p=16	0.82697
	GZB7WH	$(1+4p)/8p$	p=16	0.8270
	HGP7ZH	$(1/4b(4a+1))/2ab$	a=16, b=15	0.827
	J6UC4F	$(1+4q)/8q$	q=16	0.8270
	JG6K9T	$(K1+2K0a)/2a$	16	0.826968349
	JZJYLG	$(1+4p)/8p$	p=16	0.8270
	KF667F	$(1+4p)/8p$	p=16	0.8270
	KNMB8T	$(1+4p)/8p$	p=16	0.827
	PBYXXD	$(1+4u)/8u$	u=16	0.83
	PV78XB	$(1+4p)/8p$	p=16	0.8270
	Q26C6K	$(0,5+0,5p)$ $*q(2-q)+q*p(2-p)-0,5q*2pq$	p=16, q=15	0.88
	VZKTDB	$(1+4p)/8p$	p = 16	0.82697
	WHXYX7	$(1+4r)/8r$	r = 16	0.8270
	WTVTB3	$(1+4u)/8u$	u=16	0.82697
	XU8R6C	$(1+4p)/8p$	p=16	0.827
	Y4QLWY	$(1+4p)/8p$	p=16	0.826968349
	ZPMML8	$0.25+p/2p$	p=16	0.827

Statistical Analysis Summary of D22S1045	
Likelihood Ratio (Grand Mean): **0.827**	Standard Deviation: **0.0006**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
CSF1PO	3Y4A6Y	$(2q+1/2)/4q$	$q=12$	0.8471
	4BP4X4	$(1+4p)/8p$	$p = 12$	0.847
	6JYTB3	$(1+4p)/8p$	$p=12$	0.8471
	6MX483	$(1+4p)/8p$	$p=12$	0.847125
	8JXCCB	$(1+4p)/8p$	$p=12$	0.8471
	AAK3Y2	$(K1+2K0a)/2a$	12	0.847125798
	BBAQWM	$(4p+1)/8p$	$p=12$	0.847
	CDTABQ	$(1+4p)/8p$	$p=12$	0.8471
	EAH7DK	$((1/4q)+(((1)+(1))/2))/2$	$q=12$	0.8471
	EMARJF	$(1+4p)/8p$	$p=12$	0.84713
	GZB7WH	$(1+4p)/8p$	$p=12$	0.8471
	HGP7ZH	$(1/4b(4a+1))/2ab$	$a=12, b=11$	0.847
	J6UC4F	$(1+4q)/8q$	$q=12$	0.8471
	JG6K9T	$(K1+2K0a)/2a$	12	0.847125798
	JZJYLG	$(1+4p)/8p$	$p=12$	0.8471
	KF667F	$(1+4p)/8p$	$p=12$	0.8471
	KNMB8T	$(1+4p)/8p$	$p=12$	0.847
	PBYXXD	$(1+4r)/8r$	$r=12$	0.85
	PV78XB	$(1+4p)/8p$	$p=12$	0.8471
	Q26C6K	$(0,5+0,5p)$ $*q(2-q)+q*p(2-p)-0,5q*2pq$	$p=12,\ q=11$	0.89
	VZKTDB	$(1+4p)/8p$	$p = 12$	0.84713
	WHXYX7	$(1+4r)/8r$	$r = 12$	0.8471
	WTVTB3	$(1+4r)/8r$	$r=12$	0.84713
	XU8R6C	$(1+4p)8p$	$p=12$	0.847
	Y4QLWY	$(1+4p)/8p$	$p=12$	0.847125798
	ZPMML8	$0.25+p/2p$	$p=12$	0.8471

Statistical Analysis Summary of CSF1PO	
Likelihood Ratio (Grand Mean): **0.847**	Standard Deviation: **0.0006**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
FGA	3Y4A6Y	$(2q+1/2)/4q$	$q=22$	1.1098
	4BP4X4	$(1+4p)/8p$	$p = 22$	1.109
	6JYTB3	$(1+4p)/8p$	$p=22$	1.1098
	6MX483	$(1+4p)/8p$	$p=22$	1.109756
	8JXCCB	$(1+4p)/8p$	$p=22$	1.1098
	AAK3Y2	$(K1+2K0a)/2a$	22	1.109756098
	BBAQWM	$(4p+1)/8p$	$p=22$	1.110
	CDTABQ	$(1+4p)/8p$	$p=22$	1.1098
	EAH7DK	$((1/4q)+(((1)+(1))/2))/2$	$q=22$	1.110
	EMARJF	$(1+4p)/8p$	$p=22$	1.1098
	GZB7WH	$(1+4p)/8p$	$p=22$	1.1098
	HGP7ZH	$(1/4b(4a+1))/2ab$	$a=22, b=20$	1.110
	J6UC4F	$(1+4q)/8q$	$q=22$	1.1098
	JG6K9T	$(K1+2K0a)/2a$	22	1.109756098
	JZJYLG	$(1+4p)/8p$	$p=22$	1.1098
	KF667F	$(1+4p)/8p$	$p=22$	1.1098
	KNMB8T	$(1+4p)/8p$	$p=22$	1.11
	PBYXXD	$(1+4r)/8r$	$r=22$	1.11
	PV78XB	$(1+4p)/8p$	$p=22$	1.1098
	Q26C6K	$(0,5+0,5p)$ $*q(2-q)+q*p(2-p)-0,5q*2pq$	$p=22, \ q=20$	1.08
	VZKTDB	$(1+4p)/8p$	$p = 22$	1.10976
	WHXYX7	$(1+4q)/8q$	$q = 22$	1.110
	WTVTB3	$(1+4r)/8r$	$r=22$	1.10976
	XU8R6C	$(1+4p)/8p$	$p=22$	1.110
	Y4QLWY	$(1+4p)/8p$	$p=22$	1.109756098
	ZPMML8	$0.25+p/2p$	$p=22$	1.1098

Statistical Analysis Summary of FGA

Likelihood Ratio (Grand Mean): **1.110**   Standard Deviation: **0.0002**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
PentaD	3Y4A6Y	$(p/2+2pq+q/2)/4pq$	p=9, q=12	1.6013
	4BP4X4	$(p+q+4pq)/8pq$	p = 9, q = 12	1.601
	6JYTB3	$(p+q+4pq)/8pq$	p=9, q=12	1.6013
	6MX483	$(p+q+4pq)/8pq$	p=9, q=12	1.601251
	8JXCCB	$(p+q+4pq)/8pq$	p=9, q=12	1.6013
	AAK3Y2	$(K1a+K1b+K02ab)/2ab$	9,12	1.601251747
	BBAQWM	$(4pq+p+q)/8pq$	p=9, q=12	1.601
	CDTABQ	$(p+q+4pq)/8pq$	p=9, q=12	1.6013
	EAH7DK	$(((p+q)/4pq)+(((1)+(1))/2))/2$	p=9, q=12	1.601
	EMARJF	$(p+q+4pq)/8pq$	p=9, q=12	1.6013
	GZB7WH	$(p+q+4pq)/8pq$	p=9, q=12	1.6013
	HGP7ZH	$a+b+4ab/8ab$	a=9, b=12	1.601
	J6UC4F	$(p+q+4pq)/8pq$	p=9, q=12	1.6013
	JG6K9T	$(K1+K1b+K02ab)/2ab$	9,12	1.601251747
	JZJYLG	$(p+q+4pq)/8pq$	p=9, q=12	1.6013
	KF667F	$(p+q+4pq)/8pq$	p=9, q=12	1.6013
	KNMB8T	$(p+q+4pq)/8pq$	p=9, q=12	1.601
	PBYXXD	$(p+s+4ps)/8ps$	p=9, s=12	1.60
	PV78XB	$(p+q+4pq)/8pq$	p=9, q=12	1.6013
	Q26C6K	$(0,5+0,5p)*q(2-q)+(0,5+0,5q)$ $*p(2-p)-0,5(p+q)*2pq$	p=9, q=12	1.50
	VZKTDB	$(p+q+4pq)/8pq$	p = 9, q = 12	1.60125
	WHXYX7	$(p+q+4pq)/8pq$	p = 12, q = 9	1.601
	WTVTB3	$(p+s+4ps)/8ps$	p=9, s=12	1.60125
	XU8R6C	$(p+q+4pq)/8pq$	p=9, q=12	1.601
	Y4QLWY	$(p+q+4pq)/8pq$	p=9, q=12	1.601251747
	ZPMML8	$0.25*p+0.25*q+pq/2pq$	p=9, q=12	1.6023

Statistical Analysis Summary of PentaD

Likelihood Ratio (Grand Mean): **1.601**   Standard Deviation: **0.0004**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
PentaE	3Y4A6Y	$(2q+1/2)/4q$	q=15	3.4138
	4BP4X4	$(1+4p)/8p$	p = 15	3.413
	6JYTB3	$(1+4p)/8p$	p=15	3.4138
	6MX483	$(1+4p)/8p$	p=15	3.413752
	8JXCCB	$(1+4p)/8p$	p=15	3.4138
	AAK3Y2	$(K1+2K0a)/2a$	15	3.413752914
	BBAQWM	$(4p+1)/8p$	p=15	3.414
	CDTABQ	$(1+4p)/8p$	p=15	3.4138
	EAH7DK	$((1/4q)+(((1)+(1))/2))/2$	q=15	3.414
	EMARJF	$(1+4p)/8p$	p=15	3.4138
	GZB7WH	$(1+4p)/8p$	p=15	3.4138
	HGP7ZH	$(1/4b(4a+1))/2ab$	a=15, b=5	3.414
	J6UC4F	$(1+4p)/8p$	p=15	3.4138
	JG6K9T	$(K1+2K0a)/2a$	15	3.413752914
	JZJYLG	$(1+4p)/8p$	p=15	3.4138
	KF667F	$(1+4p)/8p$	p=15	3.4138
	KNMB8T	$(1+4p)/8p$	p=15	3.414
	PBYXXD	$(1+4u)/8u$	u=15	3.41
	PV78XB	$(1+4p)/8p$	p=15	3.4138
	Q26C6K	$(0,5+0,5p)$ $*q(2-q)+q*p(2-p)-0,5q*2pq$	p=15, q=5	3.36
	VZKTDB	$(1+4p)/8p$	p = 15	3.41375
	WHXYX7	$(1+4p)/8p$	p = 15	3.414
	WTVTB3	$(1+4u)/8u$	u = 15	3.41375
	XU8R6C	$(1+4p)/8p$	p=15	3.414
	Y4QLWY	$(1+4p)/8p$	p=15	3.413752914
	ZPMML8	$0.25+p/2p$	p=15	3.4138

Statistical Analysis Summary of PentaE

Likelihood Ratio (Grand Mean): **3.414**   Standard Deviation: **0.0008**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
SE33	3Y4A6Y	(2q+1/2)/4q	q=28.2	2.1404
	4BP4X4	(1+4p)/8p	p = 28.2	2.140
	6JYTB3	(1+4p)/8p	p=28.2	2.1404
	6MX483	(1+4p)/8p	p=28.2	2.140419
	8JXCCB	(1+4p)/8p	p=28.2	2.1404
	AAK3Y2	(K1+2K0a)/2a	28.2	2.140419948
	BBAQWM	(4p+1)/8p	p=28.2	2.140
	CDTABQ	(1+4p)/8p	p=28.2	2.1404
	EAH7DK	((1/4q)+(((1)+(1))/2))/2	q=28.2	2.140
	EMARJF	(1+4p)/8p	p=28.2	2.1404
	GZB7WH	(1+4p)/8p	p=28.2	2.1404
	HGP7ZH	(1/4b(4a+1))/2ab	a=28.2, b=26.2	2.140
	J6UC4F	(1+4q)/8q	q=28.2	2.1404
	JG6K9T	(K1+2K0a)/2a	28.2,	2.140419948
	JZJYLG	(1+4p)/8p	p=28.2	2.1404
	KF667F	(1+4p)/8p	p=28.2	2.1404
	KNMB8T	(1+4p)/8p	p=28.2	2.14
	PBYXXD	(1+4c)/8c	c=28.2	2.14
	PV78XB	(1+4p)/8p	p=28.2	2.1404
	Q26C6K	(0,5+0,5p) *q(2-q)+q*p(2-p)-0,5q*2pq	p=28.2, q=26.2	2.09
	VZKTDB	(1+4p)/8p	p = 28.2	2.14042
	WHXYX7	(1+4r)/8r	r = 28.2	2.140
	WTVTB3	(1+4c)/8c	c=28.2	2.14042
	XU8R6C	(1+4p)/8p	p=28.2	2.140
	Y4QLWY	(1+4p)/8p	p=28.2	2.140419948
	ZPMML8	0.25+p/2p	p=28.2	2.1404

Statistical Analysis Summary of SE33	
Likelihood Ratio (Grand Mean): **2.140**	Standard Deviation: **0.0002**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
TH01	3Y4A6Y	(1+2q)/4q	q=9.3	1.2248
	4BP4X4	(1+2p)/4p	p = 9.3	1.224
	6JYTB3	(1+2p)/4p	p=9.3	1.2248
	6MX483	(2+4p)/8p	p=9.3	1.224847
	8JXCCB	(1+2p)/4p	p=9.3	1.2248
	AAK3Y2	(K1+K0a)/a	9.3	1.224847782
	BBAQWM	(2p+1)/4p	p=9.3	1.225
	CDTABQ	(1+2p)/4p	p=9.3	1.2248
	EAH7DK	((1/2q)+(((1)+(1))/2))/2	q=9.3	1.225
	EMARJF	(1+2p)/4p	p=9.3	1.2248
	GZB7WH	(1+2p)/4p	p=9.3	1.2248
	HGP7ZH	1/2b(2a+1)/2ab	a=9.3, b=7	1.225
	J6UC4F	(1+2p)/4p	p=9.3	1.2248
	JG6K9T	(K1+K0a)/a	9.3	1.224847782
	JZJYLG	(1+2p)/4p	p=9.3	1.2248
	KF667F	(1+2p)/4p	p=9.3	1.2248
	KNMB8T	(1+2p)/4p	p=9.3	1.225
	PBYXXD	(1+2a)/4a	a=9.3	1.22
	PV78XB	(1+2p)/4p	p=9.3	1.2248
	Q26C6K	q(2-q)+q*(p(2-p)-2pq)	p=9.3, q=7	1.14
	VZKTDB	(1+2p)4p	p = 9.3	1.22485
	WHXYX7	(1+2q)/4q	q = 9.3	1.225
	WTVTB3	(1+2a)/4a	a=9.3	1.22485
	XU8R6C	(1+2p)/4p	p=9.3	1.225
	Y4QLWY	(1+2p)/4p	p=9.3	1.224847782
	ZPMML8	0.5+.25*p/p	p=9.3	1.2248

Statistical Analysis Summary of TH01

Likelihood Ratio (Grand Mean): **1.225**   Standard Deviation: **0.0010**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
TPOX	3Y4A6Y	(1+2p)/4p	p=8	0.9763
	4BP4X4	(1+2p)/4p	p = 8	0.976
	6JYTB3	(1+2p)/4p	p=8	0.9763
	6MX483	(2+4p)/8p	p=8	0.976281
	8JXCCB	(1+2p)/4p	p=8	0.9763
	AAK3Y2	(K1+K0a)/a	8	0.976281196
	BBAQWM	(2p+1)/4p	p=8	0.976
	CDTABQ	(1+2p)/4p	p=8	0.9763
	EAH7DK	((1/2p)+(((1)+(1))/2))/2	p=8	0.976
	EMARJF	(1+2p)/4p	p=8	0.97628
	GZB7WH	(1+2p)/4p	p=8	0.9763
	HGP7ZH	1/2b(2a+1)/2ab	a=8, b=9	0.976
	J6UC4F	(1+2p)/4p	p=8	0.9763
	JG6K9T	(K1+K0a)/a	8	0.976281196
	JZJYLG	(1+2p)/4p	p=8	0.9763
	KF667F	(1+2p)/4p	p=8	0.9763
	KNMB8T	(1+2p)/4p	p=8	0.976
	PBYXXD	(1+2p)/4p	p=8	0.98
	PV78XB	(1+2p)/4p	p=8	0.9763
	Q26C6K	q(2-q)+q*(p(2-p)-2pq)	p=8, q=9	0.91
	VZKTDB	(1+2p)4p	p = 8	0.97628
	WHXYX7	(1+2p)/4p	p = 8	0.9763
	WTVTB3	(1+2p)/4p	p=8	0.97628
	XU8R6C	(1+2p)/4p	p=8	0.976
	Y4QLWY	(1+2p)/4p	p=8	0.976281196
	ZPMML8	0.5+.25*p/p	p=8	0.9763

Statistical Analysis Summary of TPOX

Likelihood Ratio (Grand Mean): **0.976**   Standard Deviation: **0.0008**

TABLE 7

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
vWA	3Y4A6Y	$(1+2p)/4p$	p=17	1.3806
	4BP4X4	$(1+2p)/4p$	p = 17	1.380
	6JYTB3	$(1+2p)/4p$	p=17	1.3806
	6MX483	$(2+4p)/8p$	p=17	1.380591
	8JXCCB	$(1+2p)/4p$	p=17	1.3806
	AAK3Y2	$(K1+K0a)/a$	17	1.380591758
	BBAQWM	$(2p+1)/4p$	p=17	1.381
	CDTABQ	$(1+2p)/4p$	p=17	1.3806
	EMARJF	Locus omitted		
	GZB7WH	$(1+2p)/4p$	p=17	1.3806
	HGP7ZH	$1/2b(2a+1)/2ab$	a=17, b=19	1.381
	J6UC4F	$(1+2p)/4p$	p=17	1.3806
	JG6K9T	$(K1+K0a)/a$	17	1.380591758
	JZJYLG	$(1+2p)/4p$	p=17	1.3806
	KF667F	$(1+2p)/4p$	p=17	1.3806
	KNMB8T	$(1+2p)/4p$	p=17	1.381
	PBYXXD	$(1+2p)/4p$	p=17	1.38
	PV78XB	$(1+2p)/4p$	p=17	1.3806
	Q26C6K	$q(2-q)+q*(p(2-p)-2pq)$	p=17, q=19	1.28
	VZKTDB	$(1+2p)4p$	p = 17	1.38059
	WHXYX7	$(1+2p)/4p$	p = 17	1.381
	WTVTB3	$(1+2p)/4p$	p=17	1.38059
	XU8R6C	$(1+2p)/4p$	p=17	1.381
	Y4QLWY	$(1+2p)/4p$	p=17	1.380591758
	ZPMML8	$0.5+.25*p/p$	p=17	1.3806

Statistical Analysis Summary of vWA	
Likelihood Ratio (Grand Mean): **1.381**	Standard Deviation: **0.0003**

Kinship DNA Statistics

Is the claim of the following relationship supported by the genetic evidence: **Grandparent and Grandchild**?

TABLE 8

WebCode	Kinship Index	Claim Supported?
3Y4A6Y	55.78402	No
4BP4X4	55.22	yes
6JYTB3	LR=55.7840; probability = 98,2389% for a hypothet that they are related.	Genetic evidence suports the hypothesis that they are related: LR=55.7840
6MX483	55.784	Yes, with a probability of 98.2389%
8JXCCB	55.7939	Yes it does.
AAK3Y2	55,78401618	YES
BBAQWM	55.784	Yes
CDTABQ	55.7840	Yes
EAH7DK	40.406	Supported
EMARJF	16.13	moderate support
GZB7WH	55,7939	Yes
HGP7ZH	55.784	Yes, LR is bigger than 1
J6UC4F	Combined Relationship Index(CRI)=55.7939	Yes
JG6K9T	55,78401618	Yes
JZJYLG	55.7840	YES
KF667F	55.7840	Yes
KNMB8T	56	Yes
PBYXXD	55.7880	98.24
PV78XB	55.7840	yes
Q26C6K	LR=36.3286	not excluded
VZKTDB	55.78401618	yes
WHXYX7	CRI = 55.78	There is limited support for the proposed relationship.
WTVTB3	55.78402	Inconclusive
XU8R6C	40.4059	Yes
Y4QLWY	55.78401599	Yes
ZPMML8	55.8261	Yes

Additional Kinship Statistical Results

TABLE 9

WebCode	Additional Statistical Results
3Y4A6Y	For part II calculations PATPCR was employed. Familias 3.1.9.6 and Genetica Forense Final were used to calculte the kinship index.
AAK3Y2	It is suggested to increase genetic markers and according to kinship do additional tests such as cormosome Y and mitochondrial.
BBAQWM	A potential Caucasian Grandparent (A) and Grandchild (B) are possible to be relationship with probability 98.24%
CBHMDC	This laboratory does not conduct relationship testing between Grandparent and Grandchild.
EMARJF	Our laboratory protocol is not to include vWA or D12S391 when calculating statistics for parentage or kinship cases because analysis of the CEPH pedigree families demonstrated a degree of linkage between vWA and D12S391 that does not support the assumption of independence for kinship analysis. Our laboratory uses the GlobalFiler amplification kit which does not include Penta D or Penta E; however, those loci were included for completeness.
HGP7ZH	Although the LR is bigger than 1, showing that relationship is supported by the genetic evidence, the apriori value in favor of relationship must be above 0.5, in order to take decision.
J6C2R2	Grandparent : Grandchild relationships are not calculated by this laboratory.
J6UC4F	On comparison of the DNA profiles obtained, I found that the donor of "A" is consistent being a biological grandparent of the donor of "B".The probability of kinship is 98.2392% as calculated based in NIST STRBASE population database.
JG6K9T	It is suggested to use other uniparental markers to increase the kinship index.
PBYXXD	The Grandparentage relationship is probable. AABB RT Standard 5.3.8.2 states that likelihood ratios greater than 10 shall be considered genetic evidence supporting the tested relationship. 100% of the ratios above this value have been found to be associated with a true second-degree relationship between the tested parties.
VZKTDB	The total LR is 55.78401618, which means that it is 55.78401618 times more likely that A and B are grandparent - grandchild than unrelated. The probability of grandparent - grandchild relationship is 98.23894105 %.
WHXYX7	Population substructure was not considered.
WTVTB3	According to our laboratory policies a Kinship Index between 0 - 1,000 is an inconclusive result, therefore the relationship grandparent-grandchilder is not supported under this consideration.
Y4QLWY	The results show that the hypothesis of A and B having the proposed relation, is 55.78401599 times more probable than the hypothesis of them being genetically unrelated.
ZPMML8	According to AABB standards, this would be reported as "It is 55.8261 times more likely that the grandparent and grandchild are related as second degree relatives. The probability that they are related as second degree relatives is 98.24%. The genetic evidence supports the relationship of the grandparent and the grandchild. Calculations for grandparentage are preformed in the same manner as half sibships. Pu and Linacre have shown at a likelihood ratio >33 that STR test results correctly confirm half-sibship among known half-sibling pairs >99% of the time. (Increasing the confidence in half-sibship determination based upon 15 STR loci. Pu and Linacre. Journal of Forensic and Legal Medicine 15 (2008) 373–377.)."

Additional Comments

TABLE 10

WebCode	Additional Comments
2MTFF2	The paternity index is not calculated for excluded alleged parents as per laboratory procedures.
3BGA2R	No Paternity Index or Probability of Paternity calculated due to alleged father being excluded as possible biological parent of child. No Kinship DNA calculated - Our Department does not offer kinship analysis for alleged grandparent-grandchild relationships.
3Y4A6Y	PART II [Table 2: Item 3 Paternity Index Results]: The laboratory does not perform any statistical analysis if more than three exclusions are observed. For that reason, the blanks provided for PI of the excluded systems were filled as "Exclusion".
489GJY	Based on our laboratory's procedure, when there are three or more genetic inconsistencies, the alleged parent will be excluded as a possible biological parent of the child. We do not calculate PI for individual locus if the alleged father is excluded. In addition, our laboratory does not perform grandparent-grandchild relationship testing.
4BE3C6	1.- it is not possible to establish a relationship, they do not share information in eight genetic markers between item 2 (daughter) and item 3 (parent alleged). 2.- no statistical calculations are apply
6WCT8V	Our laboratory does not perform the Probability of Paternity and half-sibling KIs.
9ECAHA	[Laboratory] does not use a Southeast Hispanic database. The Southwest Hispanic database will be used instead. Part I [Table 1: STR Amplification Kit(s) & Results]: DNA analysis for item 3: The PI box was left blank when the alleged father did not possess the obligate paternal allele at the locus. Part II [Table 5: Paternity DNA Statistics]: Paternity DNA Statistics: The combined paternity index value and probability of Paternity boxes were left blank because the alleged father is excluded as a possible biological father of the child.
AVGZXK	Our laboratory does not calculate a likelihood ratio for grandparent-grandchild relationships or for exclusions.
BEMXUL	Part III [Table 7: Kinship Likelihood Ratio Results; Table 8: Kinship DNA Statistics] was not completed as our laboratory does not calculate grandparent-grandchild relationship statistics.
BMF7EC	Alleged father excluded as the biological father. No statistics calculated with exclusions. Laboratory does not perform kinship comparisons between grandparents and grandchildren.
C2F64U	NR = No Results
C79AVD	VWA and SE33 not used due to the fact the lab does not use those loci to calculate statistics. Further the lab only does parentage testing so the kindship DNA test was not done.
CDTABQ	1. On comparison of the DNA profiles obtained, I found that the source of stained-blood specimen "Item 3" is not the biological father of 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. Extraction: Item 1, Item 2 and Item 3 were extracted using in-situ method. 3. Amplification: Item 1, Item 2 and Item 3 were amplified using AmpFISTR Direct Kit. All the amplification process were carried out on ProFlex PCR System. 4. Electrophoresis: Electrophoresis was carried out using Applied Biosystem 3500xL Genetic Analyzer for Item 1, Item 2 and Item 3. (GlobalFiler Express) 5. Quality Control: Reagent blank, positive control and negative control were incorporated into the overall analysis and gave designated results. 6. The statistical formula was derived from DNAView Statistical Software and calculated using Microsoft Excel.
D7QETH	PI not calculated at my laboratory if alleged parent is eliminated based on observed profiles. Half-sibling statistics not performed at my laboratory.

TABLE 10

WebCode	Additional Comments
EMARJF	PI calculations were not performed because the alleged father was excluded as the biological father.
F97NYL	Our laboratory does not perform the Probability of Paternity and half-sibling KIs.
FC7X3V	Part II [Table 5: Paternity DNA Statistics]: The analysis results indicate that the alleged parent (Item 3) is excluded as a possible biological parent of child (Item 2) because the alleged parent's DNA profile does not have the obligate paternal allele in eight autosomal markers. In such exclusion cases, our laboratory does not produce Paternity Index calculations. Part III [Table 7: Kinship Likelihood Ratio Results; Table 8: Kinship DNA Statistics]: Our laboratory does not perform grandparent-grandchild kinship DNA statistics calculations.
GJYRBD	My laboratory does not generate paternity statistics when the Alleged Father is eliminated as the biological parent (father).
GLPQUH	Blood stain labeled with (item 3) is not the biological father of the donor of blood stain labeled with (item 2).
GVCR88	Part III [Table 7: Kinship Likelihood Ratio Results; Table 8: Kinship DNA Statistics] was not completed because the [Laboratory] does not evaluate or calculate kinship statistics for alleged grandparent-grandchild relationships.
H83Z8L	Part 2 [Table 5: Paternity DNA Statistics] we do not calculate statistics (CPI and PROBABILITY) for an exclusion scenario at this laboratory , thus the CPI and PROBABILITY in part 2 is not reported. Part 3 [Table 7: Kinship Likelihood Ratio Results; Table 8: Kinship DNA Statistics]: this laboratory uses a kinship software program to calculate a grandparent-grandchild relationship to calculate and it is not required to calculate by hand. This laboratory does not use NIST STRBASE database and therefore no participation in PART 3
J6C2R2	Given my interpretation that the alleged parent (item 3) is excluded as a possible biological parent of the child (item 2) a likelihood ratio and PI was NOT calculated for individual loci.
J6UC4F	1. The PI values are not calculated as Item 3 has been excluded as a possible biological father of the child (Item 2). 2. Amplification of Item 1, Item 2 and Item 3 were carried out via Thermal Cycler Geneamp PCR System 9700. 3. Electrophoresis process was carried out by Genetic Analyzer 3500xl for all items. 4. Positive and negative control were carried out along with the analysis and all gave the intended results.
JFELR9	NR = No results
JZJYLG	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. Extraction: Item 1, Item 2 and Item 3 were extracted using in-situ method. 3. Amplification: Item1, Item 2 and Item 3 were amplified using Global Filer Express. All the amplification process were carried out on Proflex PCR System. 4. Electrophoresis: Electrophoresis was carried out using Applied Biosystem 3500xl Genetic Analyzer for Item 1, Item 2 and Item 3. 5. Quality Control: Reagent blank, positive control and negative control were incorporated into the overall analysis and gave designated results. 6. The statistical formula was derived from DNAView Statistical Software and calculated using Microsoft Excel.
KD6V36	The lab only calculates a PI when an inclusion is being reported. In an instance like this, once it is determined that the alleged father is excluded, no statistical calculations are performed.

TABLE 10

WebCode	Additional Comments
KF667F	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. Extraction: Item 1, Item 2 and Item 3 were extracted using in-situ method. 3. Amplification: Item1, Item 2 and Item 3 were amplified using Globalfiler Express. All the amplification process were carried out on Profelx PCR System. 4. Electrophoresis: Electrophoresis was carried out using Applied Biosystem 3500xl Genetic Analyzer for Item 1, Item 2 and Item 3. 5. Quality Control: Reagent blank, positive control and negative control were incorporated into the overall analysis and gave designated results. 6. The statistical formula was derived from DNAView Statistical Software and calculated using Microsoft Excel.
KHV4PK	NR = No Results
NDBH43	YSTR and Kinship testing not done at this laboratory; vWA not included in statistic due to known linkage with D12; SE33 not included due to known high mutation rate
PBYXXD	Paternity DNA, Item 3: PentaE locus shows an off-ladder allele sized as a 26. This is reproducible, as it shows up also in the confirmatory run for the exclusion. Including the allele in the results calculation makes this locus heterozygous and not homozygous and change the PI for this locus from 84.2 to 42.1. The overall conclusion of non-paternity is unchanged. The locus was included in the final report as we are convinced it is a real allele.
PV78XB	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. Extraction: Item 1, Item 2 and Item 3 were extracted using in-situ method. 3. Amplification: Item1, Item 2 and Item 3 were amplified using Globalfiler Express. All the amplification process were carried out on Proflex PCR System. 4. Electrophoresis: Electrophoresis was carried out using Applied Biosystem 3500xl Genetic Analyzer for Item 1, Item 2 and Item 3.(GlobalFiler Express).5. Quality Control: Reagent blank,positive control and negative control were incorporated into the overall analysis and gave designated results. 6. The statistical formula was derived from DNAView Statistical Software and calculated using Microsoft Excel.
Q26C6K	In our laboratory, PI calculation is not performed.
QM9X7C	Regarding the theoretical control, our laboratory does not perform this type of statistical analysis, we request more parts to be able to give better statistical value. For accreditation reasons we decide not to report the theoretical control.
QR4Q3R	Part III [Table 7: Kinship Likelihood Ratio Results; Table 8: Kinship DNA Statistics] not completed as these calculations not performed by the laboratory.
RRJ8VZ	Locus vWA was not statistically considered for this test due to the known linkage with D12S391. Locus SE33 was not statistically considered for this test due to laboratory standard operating procedures. Kinship testing was not performed since our laboratory only analyzes parent-child comparisons.
TYC274	Regarding locus specific PI (p.4, Item 3) and Paternity DNA Statistics (p.6, questions 1,2,3) no PI values, CPI or Probability of Paternity is entered because the laboratory would not calculate these values for an obvious exclusion of an Alleged Father (> or = to 3 loci exclusion) observed upon initial comparison of the trio's profiles.
VURUWU	[Laboratory] does not use vWA or SE33 in parentage stats. vWA removed due to linkage with D12S391. SE33 removed due to high mutation. Y-STR analysis and kinship stats not completed because [Laboratory] does not perform Y-STR analysis or kinship stats.
WTVTB3	The dataset "1036 Revised Hispanic" ó "NIST 1036 Revised U.S. Population Dataset" was used for statistical calculations. The form stated that the "NIST 1036 U.S. Population Dataset" but this one was not listed (or found) in the link stated in the form.

TABLE 10

WebCode	Additional Comments
Y4QLWY	Markers with empty boxes indicate that no experiment was performed. Markers filled with a single dash "-" indicate that no alleles resulted.
Z6GBDX	Our laboratory does not evaluate grandparentage relationships for kinship.
ZCGQZK	It is laboratory policy not to calculate a PI for any locus when across the whole profile the alleged father is excluded as being a biological parent.
ZD9PG4	Part II [Table 5: Paternity DNA Statistics]: No statistics (CPI and probability) are calculated for paternity exclusion at this laboratory. Part III [Table 7: Kinship Likelihood Ratio Results; Table 8: Kinship DNA Statistics]: Software is used to calculate statistics at this laboratory for grandparent/grandchild relationships. No calculations by hand are required.
ZPMML8	Item 3 (Alleged father) has an off-ladder allele at Penta E. Our lab policy is to not report any locus where an allele cannot be accurately sized because it is outside the bins of the locus.

-End of Report-
(Appendix may follow)

Test No. 19-5872: DNA Parentage

DATA MUST BE SUBMITTED BY **Oct. 28, 2019, 11:59 p.m.** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A   WebCode: 4HQQUQ

The Accreditation Release section can be accessed by using the "Continue to Final Submission" button above. This information can be entered at any time prior to submitting to CTS.

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 (Southeast 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") and null responses
- PI = Paternity Index
- If your laboratory does not produce PI calculations, record your explanation within the Part IV: Additional comments section.

Example	D1S1656	D2S1338	D2S441	D3S1358	D5S818
STR	15,18	12,17	10	14	5,13
PI	1.65	3.01	3.16	4.12	5.65

Part I: DNA Analysis for Item 1

STR Amplification Kit(s) Used:

Please check all the brands that apply for this item and record only additional kit specific information in the blank provided (i.e. 16, Plus, Direct, HS, Fusion, etc.).

☐ Identifiler®   ☐ GlobalFiler™   ☐ Investigator® 24plex

☐ PowerPlex®   Other

Report the Probabilistic Genotyping Software Used (if applicable):

*Alleles below are sorted in **Default** order.*

ITEM	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
1						
ITEM	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
1						
ITEM	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
1						
ITEM	FGA	Penta D	Penta E	SE33	TH01	TPOX
1						
ITEM	vWA	DYS391	DYS570	DYS576	Y Indel	
1						

Part I (continued): DNA Analysis for Item 2

STR Amplification Kit(s) Used:

Please check all the brands that apply for this item and record only additional kit specific information in the blank provided (i.e. 16, Plus, Direct, HS, Fusion, etc.).

☐ Identifiler®

☐ GlobalFiler™

☐ Investigator® 24plex

☐ PowerPlex®

Other

Report the Probabilistic Genotyping Software Used (if applicable):

*Alleles below are sorted in **Default** order.*

ITEM	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
2						
ITEM	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
2						
ITEM	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
2						
ITEM	FGA	Penta D	Penta E	SE33	TH01	TPOX
2						
ITEM	vWA	DYS391	DYS570	DYS576	Y Indel	
2						

Part I (continued): DNA Analysis for Item 3

Please refer to the 'Part II: Paternity DNA Statistics' section of this data sheet regarding the suggested Population Database(s) to use to determine PI values. Report a minimum of three significant figures in your PI values.

STR Amplification Kit(s) Used:

Please check all the brands that apply for this item and record only additional kit specific information in the blank provided (i.e. 16, Plus, Direct, HS, Fusion, etc.).

☐ Identifiler®   ☐ GlobalFiler™   ☐ Investigator® 24plex

☐ PowerPlex®   Other

Report the Probabilistic Genotyping Software Used (if applicable):

*Alleles below are sorted in **Default** order.*

ITEM	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
3 STR						
3 PI						
ITEM	D7S820	D8S1179	D10S1248	D12S391	D13S317	D16S539
3 STR						
3 PI						
ITEM	D18S51	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO
3 STR						
3 PI						
ITEM	FGA	Penta D	Penta E	SE33	TH01	TPOX
3 STR						
3 PI						
ITEM	vWA	DYS391	DYS570	DYS576	Y Indel	
3 STR						
3 PI						

YSTR results are for proficiency concordance only.

YSTR Amplification Kit(s) Used:

Please check all the brands that apply for this item and record only additional kit specific information in the blank provided (i.e. Plus, 23, etc.).

☐ YFiler™   ☐ PowerPlex® Y   Other

*Alleles below are sorted in **Default** order.*

ITEM	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
3									
ITEM	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
3									
ITEM	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	Y GATA H4
3									

Part I (continued): DNA Analysis - Additional DNA

- Use this section to report results for loci not currently listed in other sections of the data sheet.
- Report alleles in numerical order, separated by a comma.
- Click "Add Row" to show another row of boxes for entry.

Locus	Item 1	Item 2	Item 3 Alleles	Item 3 PI

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, access the population database by selecting 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 child (Item 2).

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

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

Part III: KINSHIP DNA STATISTICS

Complete the following Kinship DNA Statistics section, **if applicable to your laboratory**, using the instructions below.
- Use the provided scenario for context.
- Use the supplied allele frequencies for calculations (adopted from the NIST STRBASE database).
- Only test the relationship in question (eg. half siblings versus unrelated).
- Complete the entire table including the formula used in the calculation and the allele legend.
- Report a minimum of four significant figures in your likelihood ratio values.

Example: Questioned Half Sibling Relationship

Locus	Profile A	Profile B	Allele Frequencies		Formula Used	Allele Legend	Likelihood Ratio
FGA	18, 26	18, 26	18: 0.0249	26: 0.0263	(p+q+4pq) / 8pq	p = 18 q = 26	10.272
vWA	14, 15	14, 17	14: 0.0928	15: 0.1053	(1+4p)/8p	p = 14	1.847
			17: 0.1053				

Scenario:
The two DNA profiles below are presented as a potential Caucasian Grandparent (A) and Grandchild (B) relationship. Using the allele frequencies shown for the tested loci, calculate the likelihood ratio for support of the proposed relationship versus being unrelated.

Locus	A	B	Allele Frequencies		Formula Used	Allele Legend	Likelihood Ratio
D1S1656	11,15	15,17.3	11: 0.0776	15: 0.1496			
			17.3: 0.1330				
D2S1338	19,24	16,17	16: 0.0374	17: 0.1856			
			19: 0.1205	24: 0.1150			
D2S441	11,15	11,11.3	11: 0.3435	11.3: 0.0609			
			15: 0.0596				
D3S1358	14,15	14,15	14: 0.1066	15: 0.2729			
D5S818	12,13	12,12	12: 0.3878	13: 0.1427			

Locus	A	B	Allele Frequencies		Formula Used	Allele Legend	Likelihood Ratio
D7S820	9,12	9,11	9: 0.1676 12: 0.1593	11: 0.2050			
D8S1179	10,13	11,13	10: 0.1025 13: 0.3296	11: 0.0762			
D10S1248	13,15	15,16	13: 0.3075 16: 0.1330	15: 0.1967			
D12S391	19,20	19,19	19: 0.1247	20: 0.1108			
D13S317	11,12	8,9	8: 0.1205 11: 0.3255	9: 0.0776 12: 0.2687			
D16S539	11,13	11,12	11: 0.3144 13: 0.1634	12: 0.3144			
D18S51	13,15	12,15	12: 0.1136 15: 0.1704	13: 0.1233			
D19S433	14,14	13,14	13: 0.2548	14: 0.3615			
D21S11	28,31.2	28,29	28: 0.1593 31.2: 0.0983	29: 0.2022			
D22S1045	11,16	15,16	11: 0.1399 16: 0.3823	15: 0.3213			

Locus	A	B	Allele Frequencies		Formula Used	Allele Legend	Likelihood Ratio
CSF1PO	10,12	11,12	10: 0.2202 12: 0.3601	11: 0.3089			
FGA	22,26	20,22	20: 0.1233 26: 0.0263	22: 0.2050			
PentaD	9,12	9,12	9: 0.2216	12: 0.2327			
PentaE	15,16	5,15	5: 0.0762 16: 0.0512	15: 0.0429			
SE33	17,28.2	26.2,28.2	17: 0.0623 28.2: 0.0762	26.2: 0.0416			
TH01	9.3,9.3	7,9.3	7: 0.1939	9.3: 0.3449			
TPOX	8,8	8,9	8: 0.5249	9: 0.1274			
vWA	17,17	17,19	17: 0.2839	19: 0.1039			

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

2. Is the relationship of Grandparent and Grandchild supported by the genetic evidence?

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

   Please note: Any additional formatting applied in the free form space below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.

Part IV: ADDITIONAL COMMENTS
Comments regarding any part of this Test.

Please note: *Any additional formatting applied in the free form space below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.*
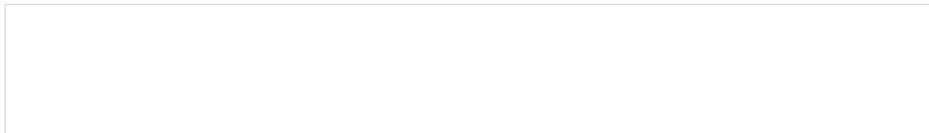
RELEASE OF DATA TO ACCREDITATION BODIES

The Accreditation Release is accessed by pressing the "Continue to Final Submission" button online and can be completed at any time prior to submission to CTS.

CTS submits external proficiency test data directly to ASCLD/LAB, ANAB, and/or 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 below must be completed.)

○ This participant's data is **not** intended for submission to ASCLD/LAB, ANAB, and/or A2LA.

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

ANAB Certificate No.
(Include ASCLD/LAB Certificate here)

A2LA Certificate No.

Step 2: Complete the Laboratory Identifying Information in its entirety

Authorized Contact Person and Title

Laboratory Name

Location (City/State)