Collaborative Testing Services, Inc

FORENSIC TESTING PROGRAM

DNA Parentage
Test No. 19-5871 Summary Report

Each participant received a sample pack consisting of four blood samples representing a paternity case. Samples were collected from a mother, a daughter, and two potential fathers. Participants were requested to analyze the samples using their existing protocols. Data were returned from 48 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 four individuals (Items 1-4); a mother, a daughter, and two potential fathers. 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 an uncle and nephew 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, Item 3 (75 μl) was blood from a male donor who was the biological father of the Item 2 female, and Item 4 (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 May 20, 2019.

SAMPLE SET ASSEMBLY: For each sample set, all four Items (1-4) 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 an uncle and nephew 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	16,18.3 10,13 13,17 24,25 18,19	17,20 14,15 15,15 11,13 NM	10,14 16,17 29,31.2 8,20 NM	16,16 18,24 16,16 17,28.2 NM	10,12 10,11 X,X 6,7 NM	* 11,14 11,11 10,12
2	13,16 10,10 16,17 24,24 18,18	19,20 11,14 14,15 9,11 NM	10,14 15,17 28,29 8,8 NM	16,18 22,24 15,16 19,28.2 NM	10,14 9,11 X,X 7,8 NM	* 13,14 11,12 8,10
3	13,17 8,10 16,22 19,24 18,18	19,25 11,14 13,14 9,13 11	10,11 15,16 28,29 15,15 19	14,18 17,22 11,15 19,19 16	11,14 9,13 X,Y 8,9.3 2	* 12,13 12,12 8,8
4	16,16.3 8,9 13,15 18,23 16,18	20,21 12,13 13,13 6,12 11	11,11.3 14,15 29,32.2 7,13 20	15,16 15,23 15,16 18,25.2 17	11,13 9,12 X,Y 8,9.3 2	* 13,13 9,10 8,10

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	38,38 16 38	15 9 12	13,17 12 *	12 19 19	28 29 16	24 12 20	11 16 22	11 11 *	12 24 11
4	37,38 14 41	17 11 12	11,14 10 *	14 19 20	31 31 17	25 16 17	11 15 23	11 11 *	13 23 11

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

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

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 - FBI PopStats	5.2247	1.9172	0.80386	5.9737	41.667	*
	1.6329	7.4627	2.0492	7.7399	2.2472	4.9751
	4.3554	1.6202	6.9638	1.1809	*	2.5491
	3.7994	*	*	10.194	6.1501	1.8018
	5.291					
3PI - NIST STRBASE	4.3706	2.5934	0.9218	4.0683	47.2	*
	1.6276	9.434	2.3596	7.3746	3.0248	3.7453
	4	1.4132	5.0201	1.1742	*	2.6667
	3.5236	2.0703	*	11.236	5.4885	2.061
	5.5525					

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

Summary Comments

The 19-5871 DNA Parentage test was designed to allow participants to assess their proficiency in the analysis and interpretation of four known 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), Item 3 was blood collected from a male donor who is the biological father of the Item 2 female, and Item 4 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 48 participants who returned data reported STR results for all four items. For Item 1, all participants reported data consistent with the consensus. For Item 2, one participant reported "14,18" at D3S1358 where the consensus was "16,18". For both Items 2 and 3, two participants reported inconsistent results at Penta E.

Twenty five participants reported YSTR results for Item 3 and Item 4. Of these participants, the reported individual profiles for both Item 3 and Item 4 were consistent.

Paternity DNA Statistics:
All 48 participants reported that the source of Item 3 could not be excluded as the biological father of Item 2. Most participants reported a value of 99.99 or higher for the probability of paternity. The most frequently reported population databases were NIST-STRBASE followed by FBI PopStats. Several participants reported in their additional comments that an inconsistency was found between the Item 2 female and the Item 3 male at Penta E, with some mentioning the possibility of a null allele.

Kinship DNA Statistics
There were 21 participants who responded for the paper kinship exercise. One participant reported inconsistent likelihood ratio (LR) values at all 23 loci. Another participant reported inconsistent likelihood ratio (LR) values at 12 different loci. One other participant reported an inconsistent LR value at one locus. Approximately 81% of participants reported a combined Kinship Index (KI) between 400 and 402. Three participants reported KI values below this range and one participant reported a KI value above this range. Twenty participants reported that the claim of an uncle and nephew relationship was supported and one participant reported that the relationship was not supported, even though they reported a combined KI value similar to the consensus.

STR Amplification Kit(s) & Results

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

24UE89 — PowerPlex® ESX17 System, CS7 System, Fusion System, GlobalFiler™, NGM SELect

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	16,18.3	17,20	10,14	16,16	10,12	
	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15,15	29,31.2	16,16	X,X	11,11
	24,25	11,13	8,20	17,28.2	6,7	10,12
	18,19					

2NRC6Q — GlobalFiler™

Item						
1	16,18.3	17,20	10,14	16,16	10,12	
	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15,15	29,31.2	16,16	X,X	11,11
	24,25			17,28.2	6,7	10,12
	18,19					

2RM9L4 — PowerPlex® Fusion

Item						
1	16,18.3	17,20	10,14	16	10,12	
	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15	29,31.2	16	X	11
	24,25	11,13	8,20		6,7	10,12
	18,19	NR				

3XC44M — GlobalFiler™

Item						
1	16,18.3	17,20	10,14	16	10,12	
	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15	29,31.2	16	X	11
	24,25			17,28.2	6,7	10,12
	18,19					

4729CE — PowerPlex® Fusion 6C

Item						
1	16,18.3	17,20	10,14	16,16	10,12	
	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15,15	29,31.2	16,16	X,X	11,11
	24,25	11,13	8,20	17,28.2	6,7	10,12
	18,19					

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

6GCZFE — GlobalFiler™ — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,18.3	17,20	10,14	16,16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15,15	29,31.2	16,16	X,X	11,11
24,25			17,28.2	6,7	10,12
18,19	-			-	

7UHFYP — GlobalFiler™ — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,18.3	17,20	10,14	16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15	29,31.2	16	X,X	11
24,25			17,28.2	6,7	10,12
18,19					

8K9D8W — PowerPlex® 5C — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,18.3	17,20	10,14	16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15	29,31.2	16	X	11
24,25	11,13	8,20		6,7	10,12
18,19	--				

9EHDBG — Investigator® 24plex — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,18.3	17,20	10,14	16,16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15,15	29,31.2	16,16	X,X	11,11
24,25			17,28.2	6,7	10,12
18,19	NAO				

ADYREJ — GlobalFiler™ — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,18.3	17,20	10,14	16,16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15,15	29,31.2	16,16	X,X	11,11
24,25			17,28.2	6,7	10,12
18,19	ND			ND	

AJ8D43 — PowerPlex® 21 — Item 1

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,18.3	17,20		16,16	10,12	14,14
10,13	14,15		18,24	10,11	11,14
13,17	15,15	29,31.2		X,X	11,11
24,25	11,13	8,20		6,7	10,12
18,19					

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

APRHTW	PowerPlex® Fusion					
	16,18.3	17,20	10,14	16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15	29,31.2	16	X	11
	24,25	11,13	8,20		6,7	10,12
	18,19	NR				

BZVQG9	PowerPlex® Fusion 6C					
	16,18.3	17,20	10,14	16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15	29,31.2	16	X	11
	24,25	11,13	8,20	17,28.2	6,7	10,12
	18,19					

C3Q39Q	Identifiler®					
		17,20		16	10,12	
1	10,13	14,15			10,11	11,14
	13,17	15	29,31.2		X	11
	24,25				6,7	10,12
	18,19					

CM2Q3C	Investigator® 24plex					
	16,18.3	17,20	10,14	16,16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15,15	29,31.2	16,16	X,X	11,11
	24,25			17,28.2	6,7	10,12
	18,19	NAO				

E2CBCF	GlobalFiler™					
	16,18.3	17,20	10,14	16,16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15,15	29,31.2	16,16	X-X	11,11
	24,25			17,28.2	6,7	10,12
	18,19	-			-	

EDNGP3	GlobalFiler™					
	16,18.3	17,20	10,14	16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15	29,31.2	16	X	11
	24,25			17,28.2	6,7	10,12
	18,19					

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

ETH7JE — Identifiler®

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
		17,20		16,16	10,12	
1	10,13	14,15			10,11	11,14
	13,17	15,15	29,31.2		X,X	11,11
	24,25				6,7	10,12
	18,19					

FDKDD4 — PowerPlex® Fusion 6C

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	16,18.3	17,20	10,14	16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15	29,31.2	16	X	11
	24,25	11,13	8,20	17,28.2	6,7	10,12
	18,19	NR	NR	NR		

GHR9NQ — PowerPlex® Fusion

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	16,18.3	17,20	10,14	16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15	29,31.2	16	X	11
	24,25	11,13	8,20		6,7	10,12
	18,19	NR				

GJ4YXU — PowerPlex® 21

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	16,18.3	17,20	-	16,16	10,12	14,14
1	10,13	14,15	-	18,24	10,11	11,14
	13,17	15,15	29,31.2	-	X,X	11,11
	24,25	11,13	8,20	-	6,7	10,12
	18,19	-	-	-	-	

GM4AUU — GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	16,18.3	17,20	10,14	16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15	29,31.2	16	X,X	11
	24,25			17,28.2	6,7	10,12
	18,19	NR			NR	

H22LZD — GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	16,18.3	17,20	10,14	16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15	29,31.2	16	X,X	11
	24,25			17,28.2	6,7	10,12
	18,19					

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

JEG6RK — GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	16,18.3	17,20	10,14	16,16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15,15	29,31.2	16,16	X,X	11,11
	24,25			17,28.2	6,7	10,12
	18,19					

LZED67 — PowerPlex® PP21

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	16,18.3	17,20		16	10,12	14
1	10,13	14,15		18,24	10,11	11,14
	13,17	15	29,31.2		X	11
	24,25	11,13	8,20		6,7	10,12
	18,19					

MZWMT2 — Investigator® 24plex

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	16,18.3	17,20	10,14	16,16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15,15	29,31.2	16,16	X,X	11,11
	24,25			17,28.2	6,7	10,12
	18,19	NAO				

N2L8YW — GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	16,18.3	17,20	10,14	16,16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15,15	29,31.2	16,16	X,X	11,11
	24,25			17,28.2	6,7	10,12
	18,19					

N6JXYG — PowerPlex® Fusion

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	16,18.3	17,20	10,14	16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15	29,31.2	16	X	11
	24,25	11,13	8,20		6,7	10,12
	18,19	NR				

NL9YYT — GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	16,18.3	17,20	10,14	16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15	29,31.2	16	X	11
	24,25			17,28.2	6,7	10,12
	18,19					

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

PDTMDF — PowerPlex®

16,18.3	17,20	10,14	16,16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15,15	29,31.2	16,16	X,X	11,11
24,25	11,13	8,20		6,7	10,12
18,19					

Item: 1

QK44KF — PowerPlex® Fusion System

16,18.3	17,20	10,14	16,16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15,15	29,31.2	16,16	X,X	11,11
24,25	11,13	8,20		6,7	10,12
18,19					

Item: 1

TC6FMZ — Identifiler® Direct

	17,20		16,16	10,12	
10,13	14,15			10,11	11,14
13,17	15,15	29,31.2		X,X	11,11
24,25				6,7	10,12
18,19					

Item: 1

U6FFKT — GlobalFiler™

16,18.3	17,20	10,14	16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15	29,31.2	16	X	11
24,25			17,28.2	6,7	10,12
18,19					

Item: 1

U7A43N — GlobalFiler™

16,18.3	17,20	10,14	16,16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15,15	29,31.2	16,16	X,X	11
24,25			17,28.2	6,7	10,12
18,19					

Item: 1

UDAKDU — PowerPlex® Fusion 5C

16,18.3	17,20	10,14	16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15	29,31.2	16	X	11
24,25	11,13	8,20		6,7	10,12
18,19					

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

V79PVL   GlobalFiler™

16,18.3	17,20	10,14	16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15	29,31.2	16	X	11
24,25			17,28.2	6,7	10,12
18,19					

Item: 1

VW6DYR   PowerPlex® Fusion

16,18.3	17,20	10,14	16,16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15,15	29,31.2	16,16	X,X	11,11
24,25	11,13	8,20		6,7	10,12
18,19					

Item: 1

VXFHAV   GlobalFiler™

16,18.3	17,20	10,14	16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15	29,31.2	16	X	11
24,25			17,28.2	6,7	10,12
18,19					

Item: 1

VXY2HM   GlobalFiler™

16,18.3	17,20	10,14	16,16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15,15	29,31.2	16,16	X,X	11,11
24,25			17,28.2	6,7	10,12
18,19	-			-	

Item: 1

WD9AVV   PowerPlex® 6C

16,18.3	17,20	10,14	16,16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15,15	29,31.2	16,16	X,X	11,11
24,25	11,13	8,20	17,28.2	6,7	10,12
18,19					

Item: 1

WEHGXN   Verifiler Express

16,18.3	17,20	10,14	16,16	10,12	14,14
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15,15	29,31.2	16,16	X,X	11,11
24,25	11,13	8,20		6,7	10,12
18,19					

Item: 1

TABLE 1

WebCode / Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
Amplification Kits (Probabilistic Genotyping)	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

WZUGYA — Identifiler® plus — Item 1

	17,20		16,16	10,12	
10,13	14,15			10,11	11,14
13,17	15,15	29,31.2		X,X	11,11
24,25				6,7	10,12
18,19					

X279VW — GlobalFiler™ — Item 1

16,18.3	17,20	10,14	16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15	29,31.2	16	X	11
24,25			17,28.2	6,7	10,12
18,19	NR			NR	

X68CKX — GlobalFiler™ — Item 1

16,18.3	17,20	10,14	16,16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15,15	29,31.2	16,16	X,X	11,11
24,25			17,28.2	6,7	10,12
18,19	NR			NR	

XGZYTE — PowerPlex® 21 — Item 1

16,18.3	17,20		16,16	10,12	14,14
10,13	14,15		18,24	10,11	11,14
13,17	15,15	29,31.2		X,X	11,11
24,25	11,13	8,20		6,7	10,12
18,19					

XRLZAN — GlobalFiler™ — Item 1

16,18.3	17,20	10,14	16	10,12	
10,13	14,15	16,17	18,24	10,11	11,14
13,17	15	29,31.2	16	X	11
24,25			17,28.2	6,7	10,12
18,19					

Z9U3BB — Item 1

16,18.3	17,20	10,14	16	10,12	
10,13	14,15	16,17		10,11	11,14
13,17	15	29,31.2	16	X	11
24,25			17,28.2	6,7	10,12
18,19					

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

ZM2UPJ	GlobalFiler™ Express					
	16,18.3	17,20	10,14	16	10,12	
1	10,13	14,15	16,17	18,24	10,11	11,14
	13,17	15	29,31.2	16	X	11
	24,25			17,28.2	6,7	10,12
	18,19					

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

24UE89   PowerPlex® ESX17 System, CS7 System, Fusion System, GlobalFiler™, NGM SELect

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
	13,16	19,20	10,14	16,18	10,14	
2	10,10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X,X	11,12
	24,24	9,11	8,8	19,28.2	7,8	8,10
	18,18					

2NRC6Q   GlobalFiler™

Item						
	13,16	19,20	10,14	16,18	10,14	
2	10,10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X,X	11,12
	24,24			19,28.2	7,8	8,10
	18,18					

2RM9L4   PowerPlex® Fusion

Item						
	13,16	19,20	10,14	16,18	10,14	
2	10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X	11,12
	24	9,11	8		7,8	8,10
	18	NR				

3XC44M   GlobalFiler™

Item						
	13,16	19,20	10,14	16,18	10,14	
2	10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X	11,12
	24			19,28.2	7,8	8,10
	18					

4729CE   PowerPlex® Fusion 6C

Item						
	13,16	19,20	10,14	16,18	10,14	
2	10,10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X,X	11,12
	24,24	9,11	8,8	19,28.2	7,8	8,10
	18,18					

6GCZFE   GlobalFiler™

Item						
	13,16	19,20	10,14	16,18	10,14	
2	10,10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X,X	11,12
	24,24			19,28.2	7,8	8,10
	18,18	-			-	

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

7UHFYP	GlobalFiler™					
	13,16	19,20	10,14	16,18	10,14	
2	10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X,X	11,12
	24			19,28.2	7,8	8,10
	18					
8K9D8W	PowerPlex® 5C					
	13,16	19,20	10,14	16,18	10,14	
2	10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X	11,12
	24	9,11	8		7,8	8,10
	18	--				
9EHDBG	Investigator® 24plex					
	13,16	19,20	10,14	16,18	10,14	
2	10,10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X,X	11,12
	24,24			19,28.2	7,8	8,10
	18,18	NAO				
ADYREJ	GlobalFiler™					
	13,16	19,20	10,14	16,18	10,14	
2	10,10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X,X	11,12
	24,24			19,28.2	7,8	8,10
	18,18	ND			ND	
AJ8D43	PowerPlex® 21					
	13,16	19,20		16,18	10,14	12,14
2	10,10	11,14		22,24	9,11	13,14
	16,17	14,15	28,29		X,X	11,12
	24,24	9,11	8,-		7,8	8,10
	18,18					
APRHTW	PowerPlex® Fusion					
	13,16	19,20	10,14	16,18	10,14	
2	10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X	11,12
	24	9,11	8		7,8	8,10
	18	NR				

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

BZVQG9 — PowerPlex® Fusion 6C — Item 2

13,16	19,20	10,14	16,18	10,14	
10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X	11,12
24	9,11	8	19,28.2	7,8	8,10
18					

C3Q39Q — Identifiler® — Item 2

	19,20		16,18	10,14	
10	11,14			9,11	13,14
16,17	14,15	28,29		X	11,12
24				7,8	8,10
18					

CM2Q3C — Investigator® 24plex — Item 2

13,16	19,20	10,14	16,18	10,14	
10,10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X,X	11,12
24,24			19,28.2	7,8	8,10
18,18	NAO				

E2CBCF — GlobalFiler™ — Item 2

13,16	19,20	10,14	16,18	10,14	
10,10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X-X	11,12
24,24			19,28.2	7,8	8,10
18,18	-			-	

EDNGP3 — GlobalFiler™ — Item 2

13,16	19,20	10,14	16,18	10,14	
10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X	11,12
24			19,28.2	7,8	8,10
18					

ETH7JE — Identifiler® — Item 2

	19,20		16,18	10,14	
10,10	11,14			9,11	13,14
16,17	14,15	28,29		X,X	11,12
24,24				7,8	8,10
18,18					

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

FDKDD4 — PowerPlex® Fusion 6C

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
	13,16	19,20	10,14	16,18	10,14	
2	10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X	11,12
	24	9,11	8	19,28.2	7,8	8,10
	18	NR	NR	NR		

GHR9NQ — PowerPlex® Fusion

Item						
	13,16	19,20	10,14	16,18	10,14	
2	10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X	11,12
	24	9,11	8		7,8	8,10
	18	NR				

GJ4YXU — PowerPlex® 21

Item						
	13,16	19,20	-	16,18	10,14	12,14
2	10,10	11,14	-	22,24	9,11	13,14
	16,17	14,15	28,29	-	X,X	11,12
	24,24	9,11	8,8	-	7,8	8,10
	18,18	-	-	-	-	

GM4AUU — GlobalFiler™

Item						
	13,16	19,20	10,14	16,18	10,14	
2	10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X,X	11,12
	24			19,28.2	7,8	8,10
	18	NR			NR	

H22LZD — GlobalFiler™

Item						
	13,16	19,20	10,14	16,18	10,14	
2	10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X,X	11,12
	24			19,28.2	7,8	8,10
	18					

JEG6RK — GlobalFiler™

Item						
	13,16	19,20	10,14	16,18	10,14	
2	10,10	11,14	15,17	22,24	9,11	13,14
	16,17	14,15	28,29	15,16	X,X	11,12
	24,24			19,28.2	7,8	8,10
	18,18					

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

LZED67 — PowerPlex® PP21 (Item 2)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,16	19,20		16,18	10,14	12,14
10	11,14		22,24	9,11	13,14
16,17	14,15	28,29		X	11,12
24	9,11	8		7,8	8,10
18					

MZWMT2 — Investigator® 24plex (Item 2)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,16	19,20	10,14	14,18	10,14	
10,10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X,X	11,12
24,24			19,28.2	7,8	8,10
18,18	NAO				

N2L8YW — GlobalFiler™ (Item 2)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,16	19,20	10,14	16,18	10,14	
10,10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X,X	11,12
24,24			19,28.2	7,8	8,10
18,18					

N6JXYG — PowerPlex® Fusion (Item 2)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,16	19,20	10,14	16,18	10,14	
10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X	11,12
24	9,11	8		7,8	8,10
18	NR				

NL9YYT — GlobalFiler™ (Item 2)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,16	19,20	10,14	16,18	10,14	
10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X	11,12
24			19,28.2	7,8	8,10
18					

PDTMDF — PowerPlex® (Item 2)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,16	19,20	10,14	16,18	10,14	
10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X,X	11,12
24,24	9,11	8,8		7,8	8,10
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

QK44KF — PowerPlex® Fusion System

13,16	19,20	10,14	16,18	10,14	
10,10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X,X	11,12
24,24	9,11	8,8		7,8	8,10
18,18					

Item: 2

TC6FMZ — Identifiler® Direct

	19,20		16,18	10,14	
10,10	11,14			9,11	13,14
16,17	14,15	28,29		X,X	11,12
24,24				7,8	8,10
18,18					

Item: 2

U6FFKT — GlobalFiler™

13,16	19,20	10,14	16,18	10,14	
10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X	11,12
24			19,28.2	7,8	8,10
18					

Item: 2

U7A43N — GlobalFiler™

13,16	19,20	10,14	16,18	10,14	
10,10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X,X	11,12
24,24			19,28.2	7,8	8,10
18,18					

Item: 2

UDAKDU — PowerPlex® Fusion 5C

13,16	19,20	10,14	16,18	10,14	
10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X	11,12
24	9,11	8		7,8	8,10
18					

Item: 2

V79PVL — GlobalFiler™

13,16	19,20	10,14	16,18	10,14	
10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X	11,12
24			19,28.2	7,8	8,10
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

VW6DYR — PowerPlex® Fusion — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,16	19,20	10,14	16,18	10,14	
10,10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X,X	11,12
24,24	9,11	8,8		7,8	8,10
18,18					

VXFHAV — GlobalFiler™ — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,16	19,20	10,14	16,18	10,14	
10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X	11,12
24			19,28.2	7,8	8,10
18					

VXY2HM — GlobalFiler™ — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,16	19,20	10,14	16,18	10,14	
10,10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X,X	11,12
24,24			19,28.2	7,8	8,10
18,18	-			-	

WD9AVV — PowerPlex® 6C — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,16	19,20	10,14	16,18	10,14	
10,10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X,X	11,12
24,24	9,11	8,8	19,28.2	7,8	8,10
18,18					

WEHGXN — Verifiler Express — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,16	19,20	10,14	16,18	10,14	12,14
10,10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X,X	11,12
24,24	9,11	8,8		7,8	8,10
18,18					

WZUGYA — Identifiler® Plus — Item 2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	19,20		16,18	10,14	
10,10	11,14			9,11	13,14
16,17	14,15	28,29		X,X	11,12
24,24				7,8	8,10
18,18					

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

X279VW — GlobalFiler™

13,16	19,20	10,14	16,18	10,14	
10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X	11,12
24			19,28.2	7,8	8,10
18	NR			NR	

(Item 2)

X68CKX — GlobalFiler™

13,16	19,20	10,14	16,18	10,14	
10,10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X,X	11,12
24,24			19,28.2	7,8	8,10
18,18	NR			NR	

(Item 2)

XGZYTE — PowerPlex® 21

13,16	19,20		16,18	10,14	12,14
10,10	11,14		22,24	9,11	13,14
16,17	14,15	28,29		X,X	11,12
24,24	9,11	8,-		7,8	8,10
18,18					

(Item 2)

XRLZAN — GlobalFiler™

13,16	19,20	10,14	16,18	10,14	
10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X	11,12
24			19,28.2	7,8	8,10
18					

(Item 2)

Z9U3BB

13,16	19,20	10,14	16,18	10,14	
10	11,14	15,17		9,11	13,14
16,17	14,15	28,29	15,16	X	11,12
24			19,28.2	7,8	8,10
18					

(Item 2)

ZM2UPJ — GlobalFiler™ Express

13,16	19,20	10,14	16,18	10,14	
10	11,14	15,17	22,24	9,11	13,14
16,17	14,15	28,29	15,16	X	11,12
24			19,28.2	7,8	8,10
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 3 - STR Results

24UE89 — PowerPlex® ESX17 System, CS7 System, Fusion System, GlobalFiler™, NGM SELect — Item 3

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
13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24	9,13	15,15	19,19	8,9.3	8,8
18,18	11			2	

2NRC6Q — GlobalFiler™ — Item 3

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24			19,19	8,9.3	8,8
18,18	11			2	

2RM9L4 — PowerPlex® Fusion — Item 3

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24	9,13	15		8,9.3	8
18	11				

3XC44M — GlobalFiler™ — Item 3

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24			19	8,9.3	8
18	11			2	

4729CE — PowerPlex® Fusion 6C — Item 3

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24	9,13	15,15	19,19	8,9.3	8,8
18,18	11	19	16		

6GCZFE — GlobalFiler™ — Item 3

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24			19,19	8,9.3	8,8
18,18	11			2	

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

7UHFYP — GlobalFiler™ — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24			19	8,9.3	8
18	11			2	

8K9D8W — PowerPlex® 5C — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24	9,13	15		8,9.3	8
18	11				

9EHDBG — Investigator® 24plex — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24			19,19	8,9.3	8,8
18,18	11				

ADYREJ — GlobalFiler™ — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24			19,19	8,9.3	8,8
18,18	11			2	

AJ8D43 — PowerPlex® 21 — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,17	19,25		14,18	11,14	12,13
8,10	11,14		17,22	9,13	12,13
16,22	13,14	28,29		X,Y	12,12
19,24	9,13	15,-		8,9.3	8,8
18,18					

APRHTW — PowerPlex® Fusion — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24	9,13	15		8,9.3	8
18	11				

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

BZVQG9 PowerPlex® Fusion 6C

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	13,17	19,25	10,11	14,18	11,14	
3	8,10	11,14	15,16	17,22	9,13	12,13
	16,22	13,14	28,29	11,15	X,Y	12
	19,24	9,13	15	19	8,9.3	8
	18	11	19	16		

C3Q39Q Identifiler®

		19,25		14,18	11,14	
3	8,10	11,14			9,13	12,13
	16,22	13,14	28,29		X,Y	12
	19,24				8,9.3	8
	18					

CM2Q3C Investigator® 24plex

	13,17	19,25	10,11	14,18	11,14	
3	8,10	11,14	15,16	17,22	9,13	12,13
	16,22	13,14	28,29	11,15	X,Y	12,12
	19,24			19,19	8,9.3	8,8
	18,18	11				

E2CBCF GlobalFiler™

	13,17	19,25	10,11	14,18	11,14	
3	8,10	11,14	15,16	17,22	9,13	12,13
	16,22	13,14	28,29	11,15	X-Y	12,12
	19,24			19,19	8,9.3	8,8
	18,18	11			2	

EDNGP3 GlobalFiler™

	13,17	19,25	10,11	14,18	11,14	
3	8,10	11,14	15,16	17,22	9,13	12,13
	16,22	13,14	28,29	11,15	X,Y	12
	19,24			19	8,9.3	8
	18	11			2	

ETH7JE Identifiler®

		19,25		14,18	11,14	
3	8,10	11,14			9,13	12,13
	16,22	13,14	28,29		X,Y	12,12
	19,24				8,9.3	8,8
	18,18					

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 3 - STR Results

FDKDD4 — PowerPlex® Fusion 6C — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24	9,13	15	19	8,9.3	8
18	11	19	16		

GHR9NQ — PowerPlex® Fusion — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24	9,13	15		8,9.3	8
18	11				

GJ4YXU — PowerPlex® 21 — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,17	19,25	-	14,18	11,14	12,13
8,10	11,14	-	17,22	9,13	12,13
16,22	13,14	28,29	-	X,Y	12,12
19,24	9,13	15,15	-	8,9.3	8,8
18,18	-	-	-	-	

GM4AUU — GlobalFiler™ — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24			19	8,9.3	8
18	11			2	

H22LZD — GlobalFiler™ — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24			19	8,9.3	8
18	11			2	

JEG6RK — GlobalFiler™ — Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24			19,19	8,9.3	8,8
18,18	11			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

LZED67 PowerPlex® PP21

13,17	19,25		14,18	11,14	12,13
8,10	11,14		17,22	9,13	12,13
16,22	13,14	28,29		X,Y	12
19,24	9,13	15		8,9.3	8
18					

Item: 3

MZWMT2 Investigator® 24plex

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24			19,19	8,9.3	8,8
18,18	11				

Item: 3

N2L8YW GlobalFiler™

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24			19,19	8,9.3	8,8
18,18	11			2	

Item: 3

N6JXYG PowerPlex® Fusion

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24	9,13	15		8,9.3	8
18	11				

Item: 3

NL9YYT GlobalFiler™

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24			19	8,9.3	8
18	11			2	

Item: 3

PDTMDF PowerPlex®

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24	9,13	15,15		8,9.3	8,8
18,18	11				

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

QK44KF — PowerPlex® Fusion System — Item 3

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24	9,13	15,15		8,9.3	8,8
18,18	11				

TC6FMZ — Identifiler® Direct — Item 3

	19,25		14,18	11,14	
8,10	11,14			9,13	12,13
16,22	13,14	28,29		X,Y	12,12
19,24				8,9.3	8,8
18,18					

U6FFKT — GlobalFiler™ — Item 3

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24			19	8,9.3	8
18	11			2	

U7A43N — GlobalFiler™ — Item 3

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24			19,19	8,9.3	8,8
18,18	11			2	

UDAKDU — PowerPlex® Fusion 5C — Item 3

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24	9,13	15		8,9.3	8
18	11				

V79PVL — GlobalFiler™ — Item 3

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24			19	8,9.3	8
18	11			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

VW6DYR — PowerPlex® Fusion

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24	9,13	15,15		8,9.3	8,8
18,18	11				

(Item 3)

VXFHAV — GlobalFiler™

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24			19	8,9.3	8
18	11			2	

(Item 3)

VXY2HM — GlobalFiler™

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24			19,19	8,9.3	8,8
18,18	11			2	

(Item 3)

WD9AVV — PowerPlex® 6C

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24	9,13	15,15	19,19	8,9.3	8,8
18,18	11	19	16		

(Item 3)

WEHGXN — Verifiler Express

13,17	19,25	10,11	14,18	11,14	12,13
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24	9,13	15,15		8,9.3	8,8
18,18				2	

(Item 3)

WZUGYA — Identifiler® Plus (Investigator IDproof Software)

	19,25		14,18	11,14	
8,10	11,14			9,13	12,13
16,22	13,14	28,29		X,Y	12,12
19,24				8,9.3	8,8
18,18					

(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

X279VW — GlobalFiler™

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24			19	8,9.3	8
18	11			2	

Item: 3

X68CKX — GlobalFiler™ (eDNA)

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12,12
19,24			19,19	8,9.3	8,8
18,18	11			2	

Item: 3

XGZYTE — PowerPlex® 21

13,17	19,25		14,18	11,14	12,13
8,10	11,14		17,22	9,13	12,13
16,22	13,14	28,29		X,Y	12,12
19,24	9,13	15,-		8,9.3	8,8
18,18					

Item: 3

XRLZAN — GlobalFiler™

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24			19	8,9.3	8
18	11			2	

Item: 3

Z9U3BB

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16		9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24			19	8,9.3	8
18					

Item: 3

ZM2UPJ — GlobalFiler™

13,17	19,25	10,11	14,18	11,14	
8,10	11,14	15,16	17,22	9,13	12,13
16,22	13,14	28,29	11,15	X,Y	12
19,24			19	8,9.3	8
18	11			2	

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 4 - STR Results

24UE89 — PowerPlex® ESX17 System, CS7 System, Fusion System, GlobalFiler™, NGM SELect

Item						
	16,16.3	20,21	11,11.3	15,16	11,13	
4	8,9	12,13	14,15	15,23	9,12	13,13
	13,15	13,13	29,32.2	15,16	X,Y	9,10
	18,23	6,12	7,13	18,25.2	8,9.3	8,10
	16,18	11			2	

2NRC6Q — GlobalFiler™

Item						
	16,16.3	20,21	11,11.3	15,16	11,13	
4	8,9	12,13	14,15	15,23	9,12	13,13
	13,15	13,13	29,32.2	15,16	X,Y	9,10
	18,23			18,25.2	8,9.3	8,10
	16,18	11			2	

2RM9L4 — PowerPlex® Fusion

Item						
	16,16.3	20,21	11,11.3	15,16	11,13	
4	8,9	12,13	14,15	15,23	9,12	13
	13,15	13	29,32.2	15,16	X,Y	9,10
	18,23	6,12	7,13		8,9.3	8,10
	16,18	11				

3XC44M — GlobalFiler™

Item						
	16,16.3	20,21	11,11.3	15,16	11,13	
4	8,9	12,13	14,15	15,23	9,12	13
	13,15	13	29,32.2	15,16	X,Y	9,10
	18,23			18,25.2	8,9.3	8,10
	16,18	11			2	

4729CE — PowerPlex® Fusion 6C

Item						
	16,16.3	20,21	11,11.3	15,16	11,13	
4	8,9	12,13	14,15	15,23	9,12	13,13
	13,15	13,13	29,32.2	15,16	X,Y	9,10
	18,23	6,12	7,13	18,25.2	8,9.3	8,10
	16,18	11	20	17		

6GCZFE — GlobalFiler™

Item						
	16,16.3	20,21	11,11.3	15,16	11,13	
4	8,9	12,13	14,15	15,23	9,12	13,13
	13,15	13,13	29,32.2	15,16	X,Y	9,10
	18,23			18,25.2	8,9.3	8,10
	16,18	11			2	

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 4 - STR Results

7UHFYP — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

Item 4

8K9D8W — PowerPlex® 5C

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23	6,12	7,13		8,9.3	8,10
16,18	11				

Item 4

9EHDBG — Investigator® 24plex

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11				

Item 4

ADYREJ — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

Item 4

AJ8D43 — PowerPlex® 21

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21		15,16	11,13	12,12
8,9	12,13		15,23	9,12	13,13
13,15	13,13	29,32.2		X,Y	9,10
18,23	6,12	7,13		8,9.3	8,10
16,18					

Item 4

APRHTW — PowerPlex® Fusion

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23	6,12	7,13		8,9.3	8,10
16,18	11				

Item 4

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 4 - STR Results

BZVQG9 — PowerPlex® Fusion 6C

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
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23	6,12	7,13	18,25.2	8,9.3	8,10
16,18	11	20	17		

C3Q39Q — Identifiler®

	20,21		15,16	11,13	
8,9	12,13			9,12	13
13,15	13	29,32.2		X,Y	9,10
18,23				8,9.3	8,10
16,18					

CM2Q3C — Investigator® 24plex

16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11				

E2CBCF — GlobalFiler™

16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X-Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

EDNGP3 — GlobalFiler™

16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

ETH7JE — Identifiler®

	20,21		15,16	11,13	
8,9	12,13			9,12	13,13
13,15	13,13	29,32.2		X,Y	9,10
18,23				8,9.3	8,10
16,18					

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 4 - STR Results

FDKDD4 — PowerPlex® Fusion 6C

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
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23	6,12	7,13	18,25.2	8,9.3	8,10
16,18	11	20	17		

GHR9NQ — PowerPlex® Fusion

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
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23	6,12	7,13		8,9.3	8,10
16,18	11				

GJ4YXU — PowerPlex® 21

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
16,16.3	20,21	-	15,16	11,13	12,12
8,9	12,13	-	15,23	9,12	13,13
13,15	13,13	29,32.2	-	X,Y	9,10
18,23	6,12	7,13	-	8,9.3	8,10
16,18	-	-	-	-	

GM4AUU — GlobalFiler™

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
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

H22LZD — GlobalFiler™

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
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

JEG6RK — GlobalFiler™

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
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

All items labeled **4** in the Item column.

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 4 - STR Results

LZED67 — PowerPlex® PP21 (Item 4)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21		15,16	11,13	12
8,9	12,13		15,23	9,12	13
13,15	13	29,32.2		X,Y	9,10
18,23	6,12	7,13		8,9.3	8,10
16.18					

MZWMT2 — Investigator® 24plex (Item 4)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11				

N2L8YW — GlobalFiler™ (Item 4)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

N6JXYG — PowerPlex® Fusion (Item 4)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23	6,12	7,13		8,9.3	8,10
16,18	11				

NL9YYT — GlobalFiler™ (Item 4)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

PDTMDF — PowerPlex® (Item 4)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X,Y	9,10
18,23	6,12	7,13		8,9.3	8,10
16,18	11				

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 4 - STR Results

QK44KF — PowerPlex® Fusion System

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X,Y	9,10
18,23	6,12	7,13		8,9.3	8,10
16,18	11				

Item: 4

TC6FMZ — Identifiler® Direct

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
	20,21		15,16	11,13	
8,9	12,13			9,12	13,13
13,15	13,13	29,32.2		X,Y	9,10
18,23				8,9.3	8,10
16,18					

Item: 4

U6FFKT — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

Item: 4

U7A43N — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

Item: 4

UDAKDU — PowerPlex® Fusion 5C

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23	6,12	7,13		8,9.3	8,10
16,18	11				

Item: 4

V79PVL — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

Item: 4

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 4 - STR Results

VW6DYR — PowerPlex® Fusion — Item 4

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
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X,Y	9,10
18,23	6,12	7,13		8,9.3	8,10
16,18	11				

VXFHAV — GlobalFiler™ — Item 4

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
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

VXY2HM — GlobalFiler™ — Item 4

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
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

WD9AVV — PowerPlex® 6C — Item 4

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
16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X,Y	9,10
18,23	6,12	7,13	18,25.2	8,9.3	8,10
16,18	11	20	17		

WEHGXN — Verifiler Express — Item 4

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
16,16.3	20,21	11,11.3	15,16	11,13	12,12
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X,Y	9,10
18,23	6,12	7,13		8,9.3	8,10
16,18				2	

WZUGYA — Identifiler® Plus (-) — Item 4

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
	20,21		15,16	11,13	
8,9	12,13			9,12	13,13
13,15	13,13	29,32.2		X,Y	9,10
18,23				8,9.3	8,10
16,18					

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 4 - STR Results

X279VW — GlobalFiler™

16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

Item: 4

X68CKX — GlobalFiler™

16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13,13
13,15	13,13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

Item: 4

XGZYTE — PowerPlex® 21

16,16.3	20,21		15,16	11,13	12,12
8,9	12,13		15,23	9,12	13,13
13,15	13,13	29,32.2		X,Y	9,10
18,23	6,12	7,13		8,9.3	8,10
16,18					

Item: 4

XRLZAN — GlobalFiler™

16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

Item: 4

Z9U3BB

		11,11.3	15,16	11,13	
8,9	12,13	14,15		9,12	13
13,15	13	29,32.2	15,16		9,10
18,23			18,25.2	8,9.3	8,10
16,18					

Item: 4

ZM2UPJ — GlobalFiler™

16,16.3	20,21	11,11.3	15,16	11,13	
8,9	12,13	14,15	15,23	9,12	13
13,15	13	29,32.2	15,16	X,Y	9,10
18,23			18,25.2	8,9.3	8,10
16,18	11			2	

Item: 4

Paternity Index Results

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

24UE89	NIST-STRBASE					
	4.37	2.59	0.92	4.07	58.82	
3PI	1.63	9.43	2.36	7.37	3.02	3.75
	4.00	1.41	5.02	1.17		2.67
	3.52	2.06		11.24	5.49	2.06
	5.55					

2NRC6Q	FBI PopStats					
	5.2247	1.9172	0.80386	5.9737	41.667	
3PI	1.6329	7.4627	2.0492	7.7399	2.2472	4.9751
	4.3554	1.6202	6.9638	1.1809		2.5491
	3.7994			10.194	6.1501	1.8018
	5.2910					

2RM9L4	NIST-STRBASE					
	4.3706	2.5933	0.9218	4.0683	47.2000	
3PI	1.6276	9.4339	2.3596	7.3746	3.0248	3.7453
	4.0000	1.4132	5.0200	1.1742		2.6666
	3.5236	2.0703			5.4884	2.0610
	5.5524					

3XC44M	FBI PopStats					
	5.2247	1.9172	0.80386	5.9737	41.667	
3PI	1.6329	7.4627	2.0492	7.7399	2.2472	4.9751
	4.3554	1.6202	6.9638	1.1809		2.5491
	3.7994			10.194	6.1501	1.8018

4729CE	FBI PopStats					
	5.2247	1.9172	0.80386	5.9737	41.667	
3PI	1.6329	7.4627	2.0492	7.7399	2.2472	4.9751
	4.3554	1.6202	6.9638	1.1809		2.5491
	3.7994	2.5176	0.0020016	10.194	6.1501	1.8018
	5.2910					

6GCZFE	FBI PopStats					
	5.2247	1.9172	0.80386	5.9737	41.667	
3PI	1.6329	7.4627	2.0492	7.7399	2.2472	4.9751
	4.3554	1.6202	6.9638	1.1809		2.5491
	3.7994			10.194	6.1501	1.8018
	5.2910					

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

7UHFYP   NIST-STRBASE

4.3706	2.5934	0.9218	4.0683	58.8235	
1.6276	9.4340	2.3596	7.3746	3.0248	3.7453
4.0000	1.4132	5.0201	1.1743		2.6667
3.5236			11.2360	5.4885	2.0610
5.5525					

3PI

8K9D8W   FBI PopStats, Promega/NIST

4.61	1.9	0.893	5.82	40.7	
1.62	7.83	2.49	7.83	2.26	4.85
4.24	1.55	7.02	1.2		2.54
3.91	2.66	0.0073		5.99	1.8
5.09					

3PI

9EHDBG   NIST-STRBASE

4.3706	2.5934	.92183	4.0683	47.170	
1.6276	9.434	2.3596	7.3746	3.0248	3.7453
4.0000	1.4132	5.0201	1.1743		2.6667
3.5236			11.236	5.4885	2.061
5.5525					

3PI

ADYREJ   NIST-STRBASE

4.37	2.59	0.92	4.07	58.82	
1.63	9.43	2.36	7.37	3.02	3.75
4.00	1.41	5.02	1.17		2.67
3.52			11.24	5.49	2.06
5.55					

3PI

AJ8D43   NIST-STRBASE

4.3706	2.5934		4.0683	47.2	2.4331
1.6276	9.4340		7.3746	3.0248	3.7453
4.0000	1.4132	5.0201			2.6667
3.5236	2.0704	-		5.4885	2.0610
5.5525					

3PI

APRHTW   laboratory specific database

4.3706	2.5933	0.9218	4.0683	47.2000	
1.6276	9.4339	2.3596	7.3746	3.0248	3.7453
4.0000	1.4132	5.0200	1.1742		2.6666
3.5236	2.0703			5.4884	2.0610
5.5524					

3PI

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

BZVQG9 — NIST-STRBASE

4.3706	2.5934	0.92183	4.0683	47.17	
1.6276	9.434	2.3596	7.3746	3.0248	3.7453
4.0	1.4132	5.0201	1.1743		2.6667
3.5236	2.061	0.0024479	11.236	5.4885	2.061
5.5525					

3PI

C3Q39Q — NIST-STRBASE

	2.59		4.06	58.82	
1.62	9.43			3.02	3.74
4.00	1.41	5.02			2.66
3.52				5.48	2.06
5.55					

3PI

CM2Q3C — FBI PopStats

4.3706	2.5934	0.92183	4.0683	47.170	
1.6276	9.4340	2.3596	7.3746	3.0248	3.7453
4.0000	1.4132	5.0201	1.1743		2.6667
3.5236			11.236	5.4885	2.0610
5.5525					

3PI

E2CBCF — Personal database

5.68	4.71	1.13	3.35	62.5	
1.73	6.09	2.5	6.66	7.93	3.03
3.75	1.52	3.90	1.49		3.11
3.40			12.19	4	1.82
4.31					

3PI

EDNGP3 — FBI PopStats

5.2247	1.9172	0.80386	5.9737	41.667	
1.6329	7.4627	2.0492	7.7399	2.2472	4.9751
4.3554	1.6202	6.9638	1.1809		2.5491
3.7994			10.194	6.1501	1.8018

3PI

GHR9NQ — NIST-STRBASE

4.3706	2.5933	0.9218	4.0683	47.2000	
1.6276	9.4339	2.3596	7.3746	3.0248	3.7453
4.0000	1.4132	5.0200	1.1742		2.6666
3.5236	2.0703			5.4884	2.0610
5.5524					

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

GJ4YXU   local population database

3PI					
6.202	3.816	-	3.155	16.802	1.857
1.662	5.431	-	3.819	4.928	2.567
3.184	1.407	2.917	-		2.903
2.969	2.196	7.404E-05	-	4.272	1.825
3.848					

GM4AUU   NIST-STRBASE

3PI					
3.866	2.511	0.885	3.652	14.250	
1.522	6.695	2.314	5.691	2.863	3.417
3.603	1.460	4.304	1.230		2.572
2.757			7.449	4.604	2.054
4.118					

H22LZD   NIST-STRBASE

3PI					
4.371	2.593	0.922	4.068	58.824	
1.628	9.434	2.360	7.375	3.025	3.745
4.000	1.413	5.020	1.174		2.667
3.524			11.236	5.489	2.061
5.553					

JEG6RK   NIST-STRBASE

3PI					
4.3704	2.5934	0.9219	4.069	47.2	
1.6276	9.44	2.36	7.375	3.0256	3.746
4	1.4132	5.0213	1.1741		2.6667
3.5224			11.238	5.4884	2.0611
5.5529					

LZED67   Promega

3PI					
4.3706	2.5934		4.0683	47.1698	2.4331
1.6276	9.4340		7.3746	3.0248	3.7453
4.0000	1.4132	5.0201			2.6667
3.5236	2.0704	0.0004		5.4885	2.0610
5.5525					

MZWMT2   NIST-STRBASE

3PI					
4.3706	2.5934	0.92183	4.0683	47.170	
1.6276	9.4340	2.3596	7.3746	3.0248	3.7453
4.0000	1.4132	5.0201	1.1743		2.6667
3.5236			11.236	5.4885	2.0610
5.5525					

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

N2L8YW — [Country] Caucasian Database

D1S1656 / D7S820 / D18S51 / FGA / vWA	D2S1338 / D8S1179 / D19S433 / Penta D	D2S441 / D10S1248 / D21S11 / Penta E	D3S1358 / D12S391 / D22S1045 / SE33	D5S818 / D13S317 / Amelogenin / TH01	D6S1043 / D16S539 / CSF1PO / TPOX
7.30	4.00	0.994	3.52	58.67	
2.02	7.65	2.57	4.19	6.21	2.90
4.40	1.42	3.14	1.25		3.16
3.80			14.87	4.36	1.87
5.20					

N6JXYG — NIST-STRBASE

4.3706	2.5933	0.9218	4.0683	47.2000	
1.6276	9.4339	2.3596	7.3746	3.0248	3.7453
4.0000	1.4132	5.0200	1.1742		2.6666
3.5236	2.0703			5.4884	2.0610
5.5524					

NL9YYT — FBI PopStats

5.22	1.92	0.804	5.97	41.7	
1.63	7.46	2.05	7.74	2.25	4.98
4.36	1.62	6.96	1.18		2.55
3.80			10.2	6.15	1.80
N/A					

PDTMDF — NIST-STRBASE

4.3706	2.5934	0.9218	4.0683	58.8235	
1.6276	9.4340	2.3596	7.3746	3.0248	3.7453
4.0000	1.4132	5.0201	1.1743		2.6667
3.5236	2.0610	0.0005		5.4885	2.0610
5.5525					

QK44KF — NIST-STRBASE

4.37037037	2.593406593	0.921875	4.068965517	59	
1.627586207	9.44	2.36	7.375	3.025641026	3.746031746
4	1.413173653	5.021276596	1.174129353		2.666666667
3.52238806	2.061403509	2.524064171		5.488372093	2.061135371
5.552941176					

TC6FMZ — FBI PopStats

	1.91743		5.97143	104.49321	
1.63281	7.46425			2.24731	4.97621
4.35415	1.62016	6.9667			2.54878
3.8				6.14704	1.80172
5.29115					

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

U6FFKT — Life Technologies Database

	2.20			5.57	58.14
1.82	8.53			2.30	4.33
4.27	1.58	5.47			2.52
3.26				5.92	2.01
5.42					

3PI

U7A43N — FBI PopStats

5.2247	1.9172	0.80386	5.9737	41.667	
1.6329	7.4627	2.0492	7.7399	2.2472	4.9751
4.3554	1.6202	6.9638	1.1809		2.5491
3.7994			10.194	6.1501	1.8018
5.2910					

3PI

UDAKDU — NIST-STRBASE

4.37	2.593	0.922	4.069	47.2	
1.622	9.44	2.36	7.375	3.026	3.746
4.00	1.413	5.021	1.174		2.66
3.498	2.061	0.389		5.488	2.057
5.522					

3PI

V79PVL — FBI PopStats

5.2247	1.9172	0.80386	5.9737	41.667	
1.6329	7.4627	2.0492	7.7399	2.2472	4.9751
4.3554	1.6202	6.9638	1.1809		2.5491
3.7994			10.194	6.1501	1.8018

3PI

VW6DYR — FBI PopStats

4.3706	1.9186	0.9218	5.9737	38.4615	
1.6329	8.1169	2.3596	7.3746	2.2810	4.9505
4.3178	1.5605	7.2464	1.1743		2.5491
3.9809	2.5907	0.0019		6.1501	1.8018
5.1387					

3PI

VXFHAV — FBI PopStats

5.2247	1.9172	0.80386	5.9737	41.667	
1.6329	7.4627	2.0492	7.7399	2.2472	4.9751
4.3554	1.6202	6.9638	1.1809		2.5491
3.7994			10.194	6.1501	1.8018

3PI

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

VXY2HM	FBI PopStats					
	5.2247	1.9172	0.80386	5.9737	41.667	
3PI	1.6329	7.4627	2.0492	7.7399	2.2472	4.9751
	4.3554	1.6202	6.9638	1.1809		2.5491
	3.7994			10.194	6.1501	1.8018
	5.2910					

WD9AVV	NIST-STRBASE					
	4.3706	2.5934	0.9218	4.0683	59.0000	
3PI	1.6276	9.4400	2.3596	7.3750	3.0248	3.7453
	4.0000	1.4132	5.0213	1.1741		2.6667
	3.5224	2.0614		11.2381	5.4884	2.0611
	5.5529					

WEHGXN						
	8.32	4.44	0.99	3.54	54.8	1.93
3PI	1.83	6.95	2.57	4.45	6.12	2.78
	3.57	1.42	3.22	1.25		3.13
	3.79	2.33	0		5.11	1.85
	4.79					

WZUGYA	NIST-STRBASE					
		2.6246		4.4802	35.7142	
3PI	1.9230	9.0744			2.9585	3.9062
	4.4802	1.4421	4.6685			3.0211
	3.6127				5.5991	1.7793
	5.6465					

X279VW	Laboratory Specific Database					
	5.225	1.917	0.804	5.974	41.667	
3PI	1.633	7.463	2.049	7.740	2.247	4.975
	4.355	1.620	6.964	1.181		2.549
	3.799			10.194	6.150	1.802
	5.291					

X68CKX	NIST-STRBASE					
	4.3706	2.5934	0.9218	4.0683	58.8235	
3PI	1.6276	9.4340	2.3596	7.3746	3.0248	3.7453
	4.0000	1.4132	5.0201	1.1743		2.6667
	3.5236			11.2360	5.4885	2.0610
	5.5525					

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

XGZYTE	NIST-STRBASE					
3PI	4.3706	2.5934		4.0683	47.2000	2.4331
	1.6276	9.4340		7.3746	3.0248	3.7453
	4.0000	1.4132	5.0201			2.6667
	3.5236	2.0704	-		5.4885	2.0610
	5.5525					

XRLZAN	FBI PopStats					
3PI	5.2247	1.9172	0.80386	5.9737	41.667	
	1.6329	7.4627	2.0492	7.7399	2.2472	4.9751
	4.3554	1.6202	6.9638	1.1809		2.5491
	3.7994			10.194	6.1501	1.8018
	5.2910					

ZM2UPJ	FBI PopStats					
3PI	5.2247	1.9172	0.80386	5.9737	41.667	
	1.6329	7.4627	2.0492		2.2472	4.9751
	4.3554	1.6202	6.9638	1.1809		2.5491
	3.7994			10.194	6.1501	1.8018
	5.2910					

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 4PI - Paternity Index Results

7UHFYP NIST-STRBASE

D1S1656 / D7S820 / D18S51 / FGA / vWA	D2S1338 / D8S1179 / D19S433 / Penta D	D2S441 / D10S1248 / D21S11 / Penta E	D3S1358 / D12S391 / D22S1045 / SE33	D5S818 / D13S317 / Amelogenin / TH01	D6S1043 / D16S539 / CSF1PO / TPOX
0.0000	0.0000	0.0000	0.0000	0.0000	
0.0000	0.0000	2.5419	0.0000	6.4433	6.1200
0.0000	0.0000	0.0000	1.5562		0.0000
0.0000			0.0000	5.2301	0.9526
2.4728					

8K9D8W FBI PopStats, Promega/NIST

0	0	0	0	0	
0	0	2.54	0	6.34	6.04
0	0	0	1.56		0
0	0	0		3.91	0.913
2.23					

9EHDBG NIST-STRBASE

		2.5419		6.4433	6.12
			1.5562		
				5.2301	.95256
2.4728					

AJ8D43 NIST-STRBASE

0	0		0	0	4.2230
0	0		0	6.4433	6.1200
0	0	0			0
0	0	-		5.2301	0.9526
2.4728					

C3Q39Q NIST-STRBASE

	0		0	0	
0	0			6.44	6.11
0	0	0			0
0				5.23	0.952
2.47					

CM2Q3C FBI PopStats

		2.5419		6.4433	6.1200
			1.5562		
				5.2301	0.95256
2.4728					

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 4PI - Paternity Index Results

E2CBCF — Personal database

5.68	0	0	0	0	
0	0	2.5	0	7.93	6.06
0	0	3.90	1.49		0
0			0	4	0.91
2.15					

(4PI)

GJ4YXU — local population database

0.000	0.000	-	0.000	0.000	3.471
0.000	0.000	-	0.000	4.928	4.680
0.000	0.000	0.000	-		0.000
0.000	0.000	0.000	-	4.272	0.945
2.075					

(4PI)

H22LZD — NIST-STRBASE

0.000	0.000	0.000	0.000	0.000	
0.000	0.000	2.542	0.000	6.443	6.120
0.000	0.000	0.000	1.556		0.000
0.000			0.000	5.230	0.953
2.473					

(4PI)

LZED67 — Promega

0	0		0	0	4.2230
0	0		0	6.4433	6.1200
0	0	0			0
0	0	0		5.2301	0.9526
2.4728					

(4PI)

MZWMT2 — NIST-STRBASE

		2.5419		6.4433	6.1200
			1.5562		
				5.2301	0.95256
2.4728					

(4PI)

N2L8YW — [Country] Caucasian Database

		2.57		6.21	5.80
			1.25		
				4.36	0.94
2.60					

(4PI)

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 4PI - Paternity Index Results

PDTMDF — NIST-STRBASE

D1S1656 / D7S820 / D18S51 / FGA / vWA	D2S1338 / D8S1179 / D19S433 / Penta D	D2S441 / D10S1248 / D21S11 / Penta E	D3S1358 / D12S391 / D22S1045 / SE33	D5S818 / D13S317 / Amelogenin / TH01	D6S1043 / D16S539 / CSF1PO / TPOX
0.0000	0.0000	0.0000	0.0000	0.0000	
0.0000	0.0000	2.5419	0.0000	6.4433	6.1200
0.0000	0.0000	0.0000	1.5562		0.0000
0.0000	0.0000	0.0000		5.2301	0.9526
2.4728					

(4PI)

QK44KF — NIST-STRBASE

0	0	0	0	0	
0	0	2.542253521	0	6.446428571	6.118644068
0	0	0	1.556034483		0
0	0	0		5.231884058	0.952506596
2.47260274					

(4PI)

TC6FMZ — FBI PopStats

	0		0	0	
0	0			6.66667	6.84932
0	0	0			0
0				5.95238	0.93458
2.5					

(4PI)

U6FFKT — Life Technologies Database

	0		0	0	
0	0			6.46	5.97
0	0	0			0
0				4.36	0.94
2.22					

(4PI)

UDAKDU — NIST-STRBASE

		2.542		6.446	6.082
			1.556		
				5.232	0.953
2.460					

(4PI)

VW6DYR — FBI PopStats

0.0000	0.0000	0.0000	0.0000	0.0000	
0.0000	0.0000	2.5419	0.0000	6.5359	6.0901
0.0000	0.0000	0.0000	1.5562		0.0000
0.0000	0.0000	0.0000		3.9620	0.9141
2.2533					

(4PI)

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 4PI - Paternity Index Results

VXY2HM FBI PopStats

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
		2.8852		6.1200	6.1200
			1.3740		
				3.9620	0.91408
2.2957					

4PI

WD9AVV NIST-STRBASE

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
0	0	0	0	0	
0	0	2.3600	0	3.0256	7.4921
0	0	0	1.1741		0
0	0	0	0	5.4884	1.0306
2.7765					

4PI

WEHGXN

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
0	0	0	0	0	3.86
0	0	2.57	0	6.12	5.57
0	0	0	1.25		0
0	0	0		5.11	0.92
2.39					

4PI

X279VW Laboratory Specific Database

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
0.000	0.000	0.000	0.000	0.000	
0.000	0.000	2.885	0.000	6.120	6.120
0.000	0.000	0.000	1.374		0.000
0.000			0.000	3.962	0.914
2.296					

4PI

X68CKX NIST-STRBASE

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
0.0000	0.0000	0.0000	0.0000	0.0000	
0.0000	0.0000	2.5419	0.0000	6.4433	6.1200
0.0000	0.0000	0.0000	1.5562		0.0000
0.0000			0.0000	5.2301	0.9526
2.4728					

4PI

XGZYTE NIST-STRBASE

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D6S1043
0	0		0	0	4.2230
0	0		0	6.4433	6.1200
0	0	0			0
0	0	-		5.2301	0.9526
2.4728					

4PI

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 4PI - Paternity Index Results

ZM2UPJ   FBI PopStats

4PI			2.8852		6.1200	6.1200
				1.3740		
					3.9620	0.91408
	2.2957					

YSTR Amplification Kit(s) & Results

TABLE 3

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

Item 3 - YSTR Results

WebCode / 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
24UE89 3 — PowerPlex® Y 23 System		15	13,17	12	28	24	11	11	12
	16	9	12	19		12	16		24
		12	13	19	16		22	9	11
2NRC6Q 3 — PowerPlex® Y 23		15	13,17	12	28	24	11	11	12
	16	9	12	19		12	16		24
		12	13	19	16		22	9	11
3XC44M 3 — Yfiler® Plus	38	15	13,17	12	28	24	11	11	12
	16	9	12	19	29	12	16	11	24
	38	12		19	16	20	22		11
6GCZFE 3 — Yfiler® Plus	38,38	15	13,17	12	28	24	11	11	12
	16	9	12	19	29	12	16	11	24
	38	12		19	16	20	22		11
8K9D8W 3 — PowerPlex® Y 23		15	13,17	12	28	24	11	11	12
	16	9	12	19		12	16		24
		12	13	19	16		22	9	11
APRHTW 3 — PowerPlex Fusion							11		
C3Q39Q 3 — Yfiler®		15	13,17	12	28	24	11	11	12
	16	9	12	19		12	16		
							22		11
EDNGP3 3 — Yfiler® Plus	38	15	13,17	12	28	24	11	11	12
	16	9	12	19	29	12	16	11	24
	38	12		19	16	20	22		11
GJ4YXU 3 — Yfiler®		15	13,17	12	28	24	11	11	12
	16	9	12	19		12	16		
							22		11
JEG6RK 3 — Yfiler® Plus	38,38	15	13,17	12	28	24	11	11	12
	16	9	12	19	29	12	16	11	24
	38	12		19	16	20	22		11

TABLE 3

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

Item 3 - YSTR Results

WebCode Item	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
LZED67 — PowerPlex® Y Y23									
3		15	13,17	12	28	24	11	11	12
	16	9	12	19		12	16		24
		12	13	19	16		22	9	11
NL9YYT — Yfiler® Plus									
3	38	15	13,17	12	28	24	11	11	12
	16	9	12	19	29	12	16	11	24
	38	12		19	16	20	22		11
PDTMDF — Yfiler®									
3		15	13,17	12	28	24	11	11	12
	16	9	12	19		12	16		
							22		11
QK44KF — PowerPlex® Y 23 System									
3		15	13,17	12	28	24	11	11	12
	16	9	12	19		12	16		24
		12	13	19	16		22	9	11
TC6FMZ — PowerPlex® Y 23									
3		15	13,17	12	28	24	11	11	12
	16	9	12	19		12	16		24
		12	13	19	16		22	9	11
U7A43N — Yfiler® Plus									
3	38,38	15	13,17	12	28	24	11	11	12
	16	9	12	19	29	12	16	11	24
	38	12		19	16	20	22		11
UDAKDU — PowerPlex® Y 23									
3		15	13,17	12	28	24	11	11	12
	16	9	12	19		12	16		24
		12	13	19	16		22	9	11
V79PVL — Yfiler® Plus									
3	38	15	13,17	12	28	24	11	11	12
	16	9	12	19	29	12	16	11	24
	38	12		19	16	20	22		11
VW6DYR — PowerPlex® Y 23									
3		15	13,17	12	28	24	11	11	12
	16	9	12	19		12	16		24
		12	13	19	16		22	9	11
VXFHAV — Yfiler® Plus									
3	38	15	13,17	12	28	24	11	11	12
	16	9	12	19	29	12	16	11	24
	38	12		19	16	20	22		11

TABLE 3

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

Item 3 - YSTR Results

WebCode 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
VXY2HM — Yfiler® Plus									
3	38,38	15	13,17	12	28	24	11	11	12
	16	9	12	19	29	12	16	11	24
	38	12		19	16	20	22		11
WD9AVV — PowerPlex® Y 23									
3		15	13,17	12	28	24	11	11	12
	16	9	12	19		12	16		24
		12	13	19	16		22	9	11
WZUGYA — Yfiler®									
3		15	13,17	12	28	24	11	11	12
	16	9	12	19		-	16		
							22		11
XRLZAN — Yfiler®									
3		15	13,17	12	28	24	11	11	12
	16	9	12	19		12	16		
							22		11
ZM2UPJ — Yfiler® Plus									
3	38	15	13,17	12	28	24	11	11	12
	16	9	12	19	29	12	16	11	24
	38	12		19	16	20	22		11

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 4 - YSTR Results

24UE89 — 4 — PowerPlex® Y 23 System

	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
		17	11,14	14	31	25	11	11	13
	14	11	10	19		16	15		23
		12	12	20	17		23	11	11

2NRC6Q — 4 — PowerPlex® Y 23

		17	11,14	14	31	25	11	11	13
	14	11	10	19		16	15		23
		12	12	20	17		23	11	11

3XC44M — 4 — Yfiler® Plus

	37,38	17	11,14	14	31	25	11	11	13
	14	11	10	19	31	16	15	11	23
	41	12		20	17	17	23		11

6GCZFE — 4 — Yfiler® Plus

	37,38	17	11,14	14	31	25	11	11	13
	14	11	10	19	31	16	15	11	23
	41	12		20	17	17	23		11

8K9D8W — 4 — PowerPlex® Y 23

		17	11,14	14	31	25	11	11	13
	14	11	10	19		16	15		23
		12	12	20	17		23	11	11

APRHTW — 4 — PowerPlex Fusion

							11		

C3Q39Q — 4 — Yfiler®

		17	11,14	14	31	25	11	11	13
	14	11	10	19		16	15		
							23		11

EDNGP3 — 4 — Yfiler® Plus

	37,38	17	11,14	14	31	25	11	11	13
	14	11	10	19	31	16	15	11	23
	41	12		20	17	17	23		11

GJ4YXU — 4 — Yfiler®

		17	11,14	14	31	25	11	11	13
	14	11	10	19		16	15		
							23		11

JEG6RK — 4 — Yfiler® Plus

	37,38	17	11,14	14	31	25	11	11	13
	14	11	10	19	31	16	15	11	23
	41	12		20	17	17	23		11

TABLE 3

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

Item 4 - YSTR Results

LZED67 — 4 — PowerPlex® Y Y23

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
		17	11,14	14	31	25	11	11	13
	14	11	10	19		16	15		23
		12	12	20	17		23	11	11

NL9YYT — 4 — Yfiler® Plus

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	37,38	17	11,14	14	31	25	11	11	13
	14	11	10	19	31	16	15	11	23
	41	12		20	17	17	23		11

PDTMDF — 4 — Yfiler®

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
		17	11,14	14	31	25	11	11	13
	14	11	10	19		16	15		
							23		11

QK44KF — 4 — PowerPlex® Y 23 System

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
		17	11,14	14	31	25	11	11	13
	14	11	10	19		16	15		23
		12	12	20	17		23	11	11

TC6FMZ — 4 — PowerPlex® Y 23

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
		17	11,14	14	31	25	11	11	13
	14	11	10	19		16	15		23
		12	12	20	17		23	11	11

U7A43N — 4 — Yfiler® Plus

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	37,38	17	11,14	14	31	25	11	11	13
	14	11	10	19	31	16	15	11	23
	41	12		20	17	17	23		11

UDAKDU — 4 — PowerPlex® Y 23

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
		17	11,14	14	31	25	11	11	13
	14	11	10	19		16	15		23
		12	12	20	17		23	11	11

V79PVL — 4 — Yfiler® Plus

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	37,38	17	11,14	14	31	25	11	11	13
	14	11	10	19	31	16	15	11	23
	41	12		20	17	17	23		11

VW6DYR — 4

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
		17	11,14	14	31	25	11	11	13
	14	11	10	19		16	15		23
		12	12	20	17		23	11	11

VXFHAV — 4 — Yfiler® Plus

	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	37,38	17	11,14	14	31	25	11	11	13
	14	11	10	19	31	16	15	11	23
	41	12		20	17	17	23		11

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 4 - YSTR Results

VXY2HM — Yfiler® Plus

Item	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
4	37,38	17	11,14	14	31	25	11	11	13
DYS437...	14	11	10	19	31	16	15	11	23
DYS518...	41	12		20	17	17	23		11

WD9AVV — PowerPlex® Y 23

4		17	11,14	14	31	25	11	11	13
	14	11	10	19		16	15		23
		12	12	20	17		23	11	11

WZUGYA — Yfiler®

4		17	11,14	14	31	25	11	11	13
	14	11	10	19		16	15		
							23		11

XRLZAN — Yfiler®

4		17	11,14	14	31	25	11	11	13
	14	11	10	19		16	15		
							23		11

ZM2UPJ — Yfiler® Plus

4	37,38	17	11,14	14	31	25	11	11	13
	14	11	10	19	31	16	15	11	23
	41	12		20	17	17	23		11

Additional DNA & PI Results

TABLE 4

Locus	WebCode	Item 1	Item 2	Item 3	Item 3 PI	Item 4	Item 4 PI
F13A01	24UE89	3.2,5	3.2,5	5,5	2.45	7,7	
	LZED67	3.2,5	3.2,5	5	2.4456	7	0
F13B	24UE89	9,10	8,10	8,8	5.36	8,8	
	LZED67	9,10	8,10	8	5.3648	8	4.0783
FESFPS	24UE89	10,12	10,12	11,12	1.19	10,11	
	LZED67	10,12	10,12	11,12	1.1979	10,11	0.9653
LPL	24UE89	10,12	10,12	10,10	1.43	11,12	
	LZED67	10,12	10,12	10	1.4345	11,12	0.7600
PENTA C	24UE89	9,12	9,11	11,11	3.03	11,11	
	LZED67	9,12	9,11	11	3.0066	11	2.5246

Paternity DNA Statistics & Conclusions

TABLE 5

WebCode	Chosen Biological Father	Combined Paternity Index	Probability of Paternity	Population Database Used
24UE89	Item 3 - Alleged Father A	232800728654741	99.999999999999	NIST-STRBASE
2NRC6Q	Item 3 - Alleged Father A	1.4550E+12	>99.9999999999	FBI PopStats
2RM9L4	Item 3 - Alleged Father A	247 billion	99.9%	NIST-STRBASE
3XC44M	Item 3 - Alleged Father A	275,000,000,000	>99.99%	FBI PopStats
4729CE	Item 3 - Alleged Father A	7,331,000,000	99.99999998636	FBI PopStats
6GCZFE	Item 3 - Alleged Father A	1.4550E+12	>99.9999999999	FBI PopStats
7UHFYP	Item 3 - Alleged Father A	1,672,496,780,712.7400	99.9999%	NIST-STRBASE
8K9D8W	Item 3 - Alleged Father A	2950000000	99.99999997%	FBI PopStats, Promega/NIST
9EHDBG	Item 3 - Alleged Father A	1.34 trillion	>99.99%	NIST-STRBASE
ADYREJ	Item 3 - Alleged Father A	1.67282E+12	99.9999999999%	NIST-STRBASE
AJ8D43	Item 3 - Alleged Father A	2.356E+011	N/A	NIST-STRBASE
APRHTW	Item 3 - Alleged Father A	2.47×10^{11}	99.9	laboratory specific database
BZVQG9	Item 3 - Alleged Father A	6.7 billion		NIST-STRBASE
C3Q39Q	Item 3 - Alleged Father A	1,772,572,280	99.999%	NIST-STRBASE
CM2Q3C	Item 3 - Alleged Father A	1.34 Trillion	>99.99%	FBI PopStats
E2CBCF	Item 3 - Alleged Father A	3 691 145 234 939	99.99999999997	Personal database
EDNGP3	Item 3 - Alleged Father A	275,000,000,000	>99.99%	FBI PopStats
FDKDD4	Item 3 - Alleged Father A	N/A	See Comments	FBI PopStats

TABLE 5

WebCode	Chosen Biological Father	Combined Paternity Index	Probability of Paternity	Population Database Used
GHR9NQ	Item 3 - Alleged Father A	247 billion	99.9%	NIST-STRBASE
GJ4YXU	Item 3 - Alleged Father A	5.58E+05	99.99982	local population database
GM4AUU	Item 3 - Alleged Father A	8.41e9	0.99999999997	NIST-STRBASE
H22LZD	Item 3 - Alleged Father A	1672496780712.74	99.9999%	NIST-STRBASE
JEG6RK	Item 3 - Alleged Father A	1.3E+12		NIST-STRBASE
LZED67	Item 3 - Alleged Father A	5,602,121,714.5891	99.9999	Promega
MZWMT2	Item 3 - Alleged Father A	1.34 trillion	>99.9999999999	NIST-STRBASE
N2L8YW	Item 3 - Alleged Father A	3,365,275,062,586	99.99999999997%	[Country] Caucasian Database
N6JXYG	Item 3 - Alleged Father A	247 billion	99.9%	NIST-STRBASE
NL9YYT	Item 3 - Alleged Father A	275,000,000,000	>99.99%	FBI PopStats
PDTMDF	Item 3 - Alleged Father A	159,528,341.	99.999999	NIST-STRBASE
QK44KF	Item 3 - Alleged Father A	7.77864E+11	99.99999999987 %	NIST-STRBASE
TC6FMZ	Item 3 - Alleged Father A	4548604741.92933	99.99999998	FBI PopStats
U6FFKT	Item 3 - Alleged Father A	2,156,173,000	99.99	Life Technologies Database
U7A43N	Item 3 - Alleged Father A	1.4 Trillion	>99.9999999999	FBI PopStats
UDAKDU	Item 3 - Alleged Father A	94 billion		NIST-STRBASE
V79PVL	Item 3 - Alleged Father A	275.0 billion	>99.99%	FBI PopStats
VW6DYR	Item 3 - Alleged Father A	768,306,941.9533	0.999999	FBI PopStats

TABLE 5

WebCode	Chosen Biological Father	Combined Paternity Index	Probability of Paternity	Population Database Used
VXFHAV	Item 3 - Alleged Father A	275,000,000,000	>99.99%	FBI PopStats
VXY2HM	Item 3 - Alleged Father A	1.4550E+12	>99.9999999999	FBI PopStats
WD9AVV	Item 3 - Alleged Father A	10,467,183,243,165.80	0.999999999999904	NIST-STRBASE
WEHGXN	Item 3 - Alleged Father A	Inconclusive	Inconclusive	
WZUGYA	Item 3 - Alleged Father A	1,568,748,393	99.99999993	NIST-STRBASE
X279VW	Item 3 - Alleged Father A	1.4 trillion	99.99%	Laboratory Specific Database
X68CKX	Item 3 - Alleged Father A	1,672,496,780,712.7400	99.9999%	NIST-STRBASE
XGZYTE	Item 3 - Alleged Father A	2.356E+011	N/A	NIST-STRBASE
XRLZAN	Item 3 - Alleged Father A	1,455,000,000,000	>99.9999999999	FBI PopStats
Z9U3BB	Item 3 - Alleged Father A	338,677,161,211	99.9999999997%	
ZM2UPJ	Item 3 - Alleged Father A	188,000,000,000	99.999999999468%	FBI PopStats

Response Summary		Participants: 48
Responses	Item 3 - Alleged Father A	48
	Item 4 - Alleged Father B	0
	Inconclusive	0

Kinship Likelihood Ratio Results

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D1S1656	24UE89	(k1+2k0a)/2a	a=14	0.986
	2NRC6Q	[0+(c/2x1/2)+(2acx1/2)]/[2(ac)]	a=14, c=17	0.985814225
	6GCZFE	(0.25+a)/2a	a = 14	0.98581
	7UHFYP	((1/8)(1+4p))/p	p = 14	0.9858
	8K9D8W	(1+4p)/8p	p=0.2573	0.9858
	C3Q39Q	(1+(1/4a)/2	a=14	0.9858
	E2CBCF	(0.25+p)/2p	p=14	0.9858
	GJ4YXU	(1+4p)/8p	p=14	0.9858
	GM4AUU	1/8pa+1/2	a = 14	0.986
	H22LZD	(1/8)(1+4p)/p	p = 14	0.9858
	JEG6RK	(1+4p)/8p	p = 14	0.986
	LZED67	[(1/8)x(1+4p)]/p	p=14	0.9858
	QK44KF	(1+4p)/8p	p=14	0.985814224
	TC6FMZ	q(1+4p)/4	p = 14, q = 17	0.01410
	U7A43N	(0.25+a)/2a	a= 14, b= 17.3, c= 17	0.9858
	VW6DYR	((1/8)(1+4p))/p	p=14	0.9858
	VXY2HM	(0.25+a)/2a	a=14	0.9858
	WD9AVV	(1+4p)/8p	p=14	0.986
	WEHGXN	k1+2k0a/2a	a = 14	0.9858
	WZUGYA	(1+4p)/8p	p=14	0.9858
	X68CKX	((1/8)*(1+4*P))/P	P=14	0.9858

Statistical Analysis Summary of D1S1656

Likelihood Ratio (Grand Mean): **0.986**	Labs Included: **20**
Standard Deviation: **0.0001**	Labs Excluded: **1**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D2S1338	24UE89	K0		0.500
	2NRC6Q	[0+(0x1/2)+(2cdx1/2)]/[2(cd)]	c=17, d=24	0.5
	6GCZFE	cd/2cd=0.5	c = 17, d = 24	0.50000
	7UHFYP	1/2		0.5000
	8K9D8W	1/2		0.5000
	C3Q39Q	1/2		0.5
	E2CBCF	/	/	0.5
	GJ4YXU	2/4		0.5000
	GM4AUU	1/2		0.5
	H22LZD	1/2		0.5000
	JEG6RK	1/2		0.5
	LZED67	1/2		0.5
	QK44KF	1/2		0.5
	TC6FMZ	pq	p = 17, q = 24	0.008405
	U7A43N	N/A		0.5000
	VW6DYR	1/2		0.5000
	VXY2HM	cd/2cd=0.5	c=17, d=24	0.5000
	WD9AVV	1/2	-	0.5
	WEHGXN	k0	na	0.5
	WZUGYA	-	-	1
	X68CKX	1/2	NA	0.5000

Statistical Analysis Summary of D2S1338	
Likelihood Ratio (Grand Mean): **0.500**	Labs Included: **19**
Standard Deviation: **0.0000**	Labs Excluded: **2**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D2S441	24UE89	$(k1+k0a)/a$	$a=11$	1.189
	2NRC6Q	$[0+(a/2x1/2)+(a^2x1/2)]/[a^2]$	$a=11$	1.189464975
	6GCZFE	$(0.25+(b/2))/b$	$b = 11$	1.1895
	7UHFYP	$((1/4)(1+2p))/p$	$p = 11$	1.1895
	8K9D8W	$(1+2p)/4p$	$p=0.3626$	1.1895
	C3Q39Q	$(1+(1/2a)/2$	$a=11$	1.189
	E2CBCF	$0.5+(0.25/p)$	$p=11$	1.1894
	GJ4YXU	$(1+2p)/4p$	$p=11$	1.1895
	GM4AUU	$1/4pa+1/2$	$a = 11$	1.189
	H22LZD	$(1/4)(1+2p)/p$	$p = 11$	1.1895
	JEG6RK	$(1+2p)/4p)$	$p = 11$	1.189
	LZED67	$[(1/4)x(1+2p)]/p$	$p=11$	1.1895
	QK44KF	$(1+2p)/4p$	$p=11$	1.189464975
	TC6FMZ	$p(1+2p)/4$	$p = 11$	0.1564
	U7A43N	$(0.5+a)/2a$	$a= 11, b= 13$	1.1895
	VW6DYR	$((1/4)(1+2p))/p$	$p=11$	1.189
	VXY2HM	$(0.25+(b/2))/b$	$b=11$	1.1895
	WD9AVV	$(1+2p)/4p$	$p=11$	1.189
	WEHGXN	$k1+k0a/a$	$a = 11$	1.189
	WZUGYA	$(1+4p)/8p$	$p=11$	0.8447
	X68CKX	$((1/4)*(1+2*P))/P$	$P=11$	1.1895

Statistical Analysis Summary of D2S441	
Likelihood Ratio (Grand Mean): **1.189**	Labs Included: **19**
Standard Deviation: **0.0002**	Labs Excluded: **2**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D3S1358	24UE89	$(k1+2k0a)/2a$	a=15	0.905
	2NRC6Q	$[0+(c/2 \times 1/2)+(2acx1/2)]/[2(ac)]$	a=15, c=17	0.905186386
	6GCZFE	$(0.25+a)/2a$	a =15	0.90519
	7UHFYP	$((1/8)(1+4p))/p$	p = 15	0.9052
	8K9D8W	$(1+4p)/8p$	p=0.3085	0.9052
	C3Q39Q	$(1+(1/4a)/2$	a=15	0.9051
	E2CBCF	$(0.25+p)/2p$	p=15	0.9051
	GJ4YXU	$(1+4p)/8p$	p=15	0.9052
	GM4AUU	$1/8pa+1/2$	a = 15	0.905
	H22LZD	$(1/8)(1+4p)/p$	p = 15	0.9052
	JEG6RK	$(1+4p)/8p$	p = 15	0.905
	LZED67	$[(1/8)x(1+4p)]/p$	p=15	0.9052
	QK44KF	$(1+4p)/8p$	p=15	0.905186385
	TC6FMZ	$q(1+4p)/4$	p = 15, q = 17	0.1184
	U7A43N	$(0.25+a)/2a$	a= 15, b= 18, c= 17	0.9052
	VW6DYR	$((1/8)(1+4p))/p$	p=15	0.9052
	VXY2HM	$(0.25+a)/2a$	a=15	0.9052
	WD9AVV	$(1+4p)/8p$	p=15	0.905
	WEHGXN	$k1+2k0a/2a$	a = 15	0.905
	WZUGYA	$(1+4p)/8p$	p=15	0.9052
	X68CKX	$((1/8)*(1+4*P))/P$	P=15	0.9052

Statistical Analysis Summary of D3S1358	
Likelihood Ratio (Grand Mean): **0.905**	Labs Included: **20**
Standard Deviation: **0.0001**	Labs Excluded: **1**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D5S818	24UE89	$(k1+2k0a)/2a$	$a=9$	4.382
	2NRC6Q	$[0+(c/2x1/2)+(2acx1/2)]/[2(ac)]$	$a=9, c=11$	4.381987578
	6GCZFE	$(0.25+a)/2a$	$a = 9$	4.3820
	7UHFYP	$((1/8)(1+4r))/r$	$r = 9$	4.3820
	8K9D8W	$(1+4p)/8p$	$p=0.0322$	4.3820
	C3Q39Q	$(1+(1/4a)/2$	$a=9$	4.381
	E2CBCF	$(0.25+p)/2p$	$p=9$	4.3819
	GJ4YXU	$(1+4p)/8p$	$p=9$	4.3820
	GM4AUU	$1/8pa+1/2$	$a = 9$	4.382
	H22LZD	$(1/8)(1+4p)/p$	$p = 9$	4.3820
	JEG6RK	$(1+4p)/8p$	$p = 9$	4.382
	LZED67	$[(1/8)x(1+4r)]/r$	$r=9$	4.3820
	QK44KF	$(1+4p)/8p$	$p=9$	4.381987578
	TC6FMZ	$q(1+4p)/4$	$p = 9, \ q = 11$	0.0661
	U7A43N	$(0.25+a)/2a$	$a= 9, \ b= 10, \ c= 11$	4.3820
	VW6DYR	$((1/8)(1+4r))/r$	$r=9$	4.382
	VXY2HM	$(0.25+a)/2a$	$a=9$	4.3820
	WD9AVV	$(1+4p)/8p$	$p=9$	4.382
	WEHGXN	$k1+2k0a/2a$	$a = 9$	4.381
	WZUGYA	$(1+4p)/8p$	$p=9$	4.3820
	X68CKX	$((1/8)*(1+4*R))/R$	$R=9$	4.3820

Statistical Analysis Summary of D5S818	
Likelihood Ratio (Grand Mean): **4.382**	Labs Included: **20**
Standard Deviation: **0.0003**	Labs Excluded: **1**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D7S820	24UE89	(k1+2k0a)/2a	a=8	1.048
	2NRC6Q	[0+(c/2x1/2)+(2acx1/2)]/[2(ac)]	a=8, c=12	1.048005261
	6GCZFE	(0.25+a)/2a	a = 8,	1.0480
	7UHFYP	((1/8)(1+4r))/r	r = 8	1.0480
	8K9D8W	(1+4p)/8p	p=0.2281	1.0480
	C3Q39Q	(1+(1/4a)/2	a=8	1.048
	E2CBCF	(0.25+p)/2p	p=8	1.0480
	GJ4YXU	(1+4p)/8p	p=8	1.0480
	GM4AUU	1/8pa+1/2	a = 8	1.048
	H22LZD	(1/8)(1+4p)/p	p = 8	1.0480
	JEG6RK	(1+4p)/8p	p = 8	1.048
	LZED67	[(1/8)x(1+4r)]/r	r=8	1.0480
	QK44KF	(1+4p)/8p	p=8	1.048005261
	TC6FMZ	q(1+4p)/4	p = 8, q = 12	0.04193
	U7A43N	(0.25+a)/2a	a= 8, b= 10, c= 12	1.0480
	VW6DYR	((1/8)(1+4r))/r	r=8	1.048
	VXY2HM	(0.25+a)/2a	a=8	1.0480
	WD9AVV	(1+4p)/8p	p=8	1.048
	WEHGXN	k1+2k0a/2a	a = 8	1.048
	WZUGYA	(1+4p)/8p	p=8	1.0480
	X68CKX	((1/8)*(1+4*R))/R	R=8	1.0480

Statistical Analysis Summary of D7S820

Likelihood Ratio (Grand Mean): **1.048**　　　　　　　　　　Labs Included: **20**
Standard Deviation: **0.0000**　　　　　　　　　　　　　　Labs Excluded: **1**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D8S1179	24UE89	$(k1+2k0a)/2a$	$a=14$	0.925
	2NRC6Q	$[0+(c/2 \times 1/2)+(2bc \times 1/2)]/[2(bc)]$	$b=14, c=13$	0.925314733
	6GCZFE	$(0.25+c)/2c$	$c = 14$	0.92531
	7UHFYP	$((1/8)(1+4q))/q$	$q = 14$	0.9253
	8K9D8W	$(1+4u)/8u$	$u=0.2939$	0.9253
	C3Q39Q	$(1+(1/4a)/2$	$a=14$	0.9253
	E2CBCF	$(0.25+p)/2p$	$p=14$	0.9253
	GJ4YXU	$(1+4p)/8p$	$p=14$	0.9253
	GM4AUU	$1/8pa+1/2$	$a = 14$	0.925
	H22LZD	$(1/8)(1+4p)/p$	$p = 14$	0.9253
	JEG6RK	$(1+4p)/8p$	$p = 14$	0.925
	LZED67	$[(1/8) \times (1+4q)]/q$	$q=14$	0.9253
	QK44KF	$(1+4u)/8u$	$u=14$	0.925314732
	TC6FMZ	$q(1+4p)/4$	$p = 14, q = 13$	0.1193
	U7A43N	$(0.25+a)/2a$	$a= 14, b= 9, c = 13$	0.9253
	VW6DYR	$((1/8)(1+4q))/q$	$q=14$	0.9253
	VXY2HM	$(0.25+c)/2c$	$c=14$	0.9253
	WD9AVV	$(1+4p)/8p$	$p=14$	0.925
	WEHGXN	$k1+2k0a/2a$	$a = 14$	0.9253
	WZUGYA	$(1+4p)/8p$	$p=14$	0.9253
	X68CKX	$((1/8)*(1+4*Q))/Q$	$Q=14$	0.9253

Statistical Analysis Summary of D8S1179

Likelihood Ratio (Grand Mean): **0.925**   Labs Included: **20**
Standard Deviation: **0.0001**   Labs Excluded: **1**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D10S1248	24UE89	$(k1+k0a)/a$	a=15	1.766
	2NRC6Q	$[0+(b/2x1/2)+(b^2x1/2)]/[b^2]$	b=15	1.766464032
	6GCZFE	$(0.25+(b/2))/b$	b = 15	1.7665
	7UHFYP	$((1/4)(1+2q))/q$	q = 15	1.7665
	8K9D8W	$(1+2r)/4r$	r=0.1974	1.7665
	C3Q39Q	$(1+(1/2a)/2$	a=15	1.766
	E2CBCF	$0.5+(0.25/p)$	p=15	1.7664
	GJ4YXU	$(1+2p)/4p$	p=15	1.7665
	GM4AUU	$1/4pa+1/2$	a = 15	1.766
	H22LZD	$(1/4)(1+2p)/p$	p = 15	1.7665
	JEG6RK	$(1+2p)/4p)$	p = 15	1.766
	LZED67	$[(1/4)x(1+2q)]/q$	q=15	1.7665
	QK44KF	$(p+r+4pr)/8pr$	p=13, r=15	1.667648433
	TC6FMZ	$(1+2p)/4$	P = 15	0.3487
	U7A43N	$(0.5+a)/2a$	a= 15, b= 13	1.7665
	VW6DYR	$((1/4)(1+2q))/q$	q=15	1.766
	VXY2HM	$(0.25+(b/2))/b$	b=15	1.7665
	WD9AVV	$(1+2p)/4p$	p=15	1.766
	WEHGXN	$k1+k0a/a$	a = 15	1.766
	WZUGYA	$(1+4p)/8p$	p=15	1.1332
	X68CKX	$((1/4)*(1+2*Q))/Q$	Q=15	1.7665

Statistical Analysis Summary of D10S1248

Likelihood Ratio (Grand Mean): **1.766**	Labs Included: **18**
Standard Deviation: **0.0002**	Labs Excluded: **3**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D12S391	24UE89	$(k1+k0a)/a$	a=19	2.193
	2NRC6Q	$[0+(bx1/2)+(2abx1/2)]/[2(ab)]$	a=19, b=17	2.192620176
	6GCZFE	$(0.5+a)/2a$	a = 19	2.1926
	7UHFYP	$((1/4)(1+2q))/q$	q = 19	2.1926
	8K9D8W	$(1+2r)/4r$	r=0.1477	2.1926
	C3Q39Q	$(1+(1/2a)/2$	a=19	2.192
	E2CBCF	$0.5+(0.25/p)$	p=19	2.1926
	GJ4YXU	$(1+2p)/4p$	p=19	2.1926
	GM4AUU	$1/4pa+1/2$	a = 19	2.193
	H22LZD	$(1/4)(1+2p)/p$	p = 19	2.1926
	JEG6RK	$(1+2p)/4p)$	p = 19	2.193
	LZED67	$[(1/4)x(1+2q)]/q$	q=19	2.1926
	QK44KF	$(1+2r)/4r$	r=19	2.192620176
	TC6FMZ	$q(1+2p)/2$	p = 19, q = 17	0.1080
	U7A43N	$(0.5+a)/2a$	a= 19, b= 17	2.1926
	VW6DYR	$((1/4)(1+2q))/q$	q=19	2.193
	VXY2HM	$(0.5+a)/2a$	a=19	2.1926
	WD9AVV	$(1+2p)/4p$	p=19	2.193
	WEHGXN	$k1+k0a/a$	a = 19	2.192
	WZUGYA	$(1+4p)/8p$	p=19	1.3463
	X68CKX	$((1/4)*(1+2*Q))/Q$	Q=19	2.1926

Statistical Analysis Summary of D12S391

Likelihood Ratio (Grand Mean): **2.193**	Labs Included: **19**
Standard Deviation: **0.0003**	Labs Excluded: **2**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D13S317	24UE89	(k1+k0a)/a	a=11	1.307
	2NRC6Q	[0+(bx1/2)+(2abx1/2)]/[2(ab)]	a=11, b=14	1.306711843
	6GCZFE	(0.5+a)/2a	a = 11	1.3067
	7UHFYP	((1/4)(1+2p))/p	p = 11	1.3067
	8K9D8W	(1+2p)/4p	p=0.3099	1.3067
	C3Q39Q	(1+(1/2a)/2	a=11	1.306
	E2CBCF	0.5+(0.25/p)	p=11	1.3067
	GJ4YXU	(1+2p)/4p	p=11	1.3067
	GM4AUU	1/4pa+1/2	a = 11	1.307
	H22LZD	(1/4)(1+2p)/p	p = 11	1.3067
	JEG6RK	(1+2p)/4p)	p = 11	1.307
	LZED67	[(1/4)x(1+2p)]/p	p=11	1.3067
	QK44KF	(1+2p)/4p	p=11	1.306711843
	TC6FMZ	q(1+2p)/2	p = 11, q = 14	0.03199
	U7A43N	(0.5+a)/2a	a= 11, b= 14	1.3067
	VW6DYR	((1/4)(1+2p))/p	p=11	1.307
	VXY2HM	(0.5+a)/2a	a=11	1.3067
	WD9AVV	(1+2p)/4p	p=11	1.307
	WEHGXN	k1+k0a/a	a = 11	1.306
	WZUGYA	(1+4p)/8p	p=11	0.9034
	X68CKX	((1/4)*(1+2*P))/P	P=11	1.3067

Statistical Analysis Summary of D13S317

Likelihood Ratio (Grand Mean): **1.307**   Labs Included: **19**
Standard Deviation: **0.0003**   Labs Excluded: **2**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D16S539	24UE89	K0		0.500
	2NRC6Q	[0+(0x1/2)+(2bcx1/2)]/[2(bc)]	b=9, c=13	0.5
	6GCZFE	cd/2cd=0.5	c = 9, d = 13	0.50000
	7UHFYP	1/2		0.5000
	8K9D8W	1/2		0.5000
	C3Q39Q	1/2		0.5
	E2CBCF	/	/	0.5
	GJ4YXU	2/4		0.5000
	GM4AUU	1/2		0.5
	H22LZD	1/2		0.5000
	JEG6RK	1/2		0.5
	LZED67	1/2		0.5
	QK44KF	1/2		0.5
	TC6FMZ	pq	p = 9, q = 13	0.02244
	U7A43N	N/A		0.5000
	VW6DYR	1/2		0.5000
	VXY2HM	cd/2cd=0.5	c=9, d=13	0.5000
	WD9AVV	1/2	-	0.5
	WEHGXN	k0	na	0.5
	WZUGYA	-	-	1
	X68CKX	1/2	NA	0.5000

Statistical Analysis Summary of D16S539	
Likelihood Ratio (Grand Mean): **0.500**	Labs Included: **19**
Standard Deviation: **0.0000**	Labs Excluded: **2**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D18S51	24UE89	K0		0.500
	2NRC6Q	[0+(0x1/2)+(2cdx1/2)]/[2(cd)]	c=13, d=17	0.5
	6GCZFE	cd/2cd=0.5	c = 13, d = 17	0.50000
	7UHFYP	1/2		0.5000
	8K9D8W	1/2		0.5000
	C3Q39Q	1/2		0.5
	E2CBCF	/	/	0.5
	GJ4YXU	2/4		0.5000
	GM4AUU	1/2		0.5
	H22LZD	1/2		0.5000
	JEG6RK	1/2		0.5
	LZED67	1/2		0.5
	QK44KF	1/2		0.5
	TC6FMZ	pq	p = 13, q = 17	0.006217
	U7A43N	N/A		0.5000
	VW6DYR	1/2		0.5000
	VXY2HM	cd/2cd=0.5	c=13, d=17	0.5000
	WD9AVV	1/2	-	0.5
	WEHGXN	k0	na	0.5
	WZUGYA	-	-	1
	X68CKX	1/2	NA	0.5000

Statistical Analysis Summary of D18S51	
Likelihood Ratio (Grand Mean): **0.500**	Labs Included: **19**
Standard Deviation: **0.0000**	Labs Excluded: **2**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D19S433	24UE89	K0		0.500
	2NRC6Q	[0+(0x1/2)+(2cdx1/2)]/[2(cd)]	c=12.2, d=13	0.5
	6GCZFE	cd/2cd=0.5	c = 12.2, d = 13	0.50000
	7UHFYP	1/2		0.5000
	8K9D8W	1/2		0.5000
	C3Q39Q	1/2		0.5
	E2CBCF	/	/	0.5
	GJ4YXU	2/4		0.5000
	GM4AUU	1/2		0.5
	H22LZD	1/2		0.5000
	JEG6RK	1/2		0.5
	LZED67	1/2		0.5
	QK44KF	1/2		0.5
	TC6FMZ	pq	p = 12.2, q = 13	0.008964
	U7A43N	N/A		0.5000
	VW6DYR	1/2		0.5000
	VXY2HM	cd/2cd=0.5	c=12.2, d=13	0.5000
	WD9AVV	1/2	-	0.5
	WEHGXN	k0	na	0.5
	WZUGYA	-	-	1
	X68CKX	1/2	NA	0.5000

Statistical Analysis Summary of D19S433

Likelihood Ratio (Grand Mean): **0.500**	Labs Included: **19**
Standard Deviation: **0.0000**	Labs Excluded: **2**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D21S11	24UE89	(k1+k0a)/a	a=30	1.974
	2NRC6Q	$[0+(a/2x1/2)+(a^2x1/2)]/[a^2]$	a=30	1.974056604
	6GCZFE	(0.25+(b/2))/b	b = 30	1.9741
	7UHFYP	((1/4)(1+2p))/p	p = 30	1.9741
	8K9D8W	(1+2p)/4p	p=0.1696	1.9741
	C3Q39Q	(1+(1/2a)/2	a=30	1.974
	E2CBCF	0.5+(0.25/p)	p=30	1.9740
	GJ4YXU	(1+2p)/4p	p=30	1.9741
	GM4AUU	1/4pa+1/2	a = 30	1.974
	H22LZD	(1/4)(1+2p)/p	p = 30	1.9740
	JEG6RK	(1+2p)/4p)	p = 30	1.974
	LZED67	[(1/4)x(1+2p)]/p	p=30	1.9741
	QK44KF	(1+2p)/4p	p=30	1.974056604
	TC6FMZ	p(1+2p)/4	p = 30	0.05678
	U7A43N	(0.5+a)/2a	a= 30, b= 33	1.9741
	VW6DYR	((1/4)(1+2p))/p	p=30	1.974
	VXY2HM	(0.25+(b/2))/b	b=30	1.9741
	WD9AVV	(1+2p)/4p	p=30	1.974
	WEHGXN	k1+k0a/a	a = 30	1.974
	WZUGYA	(1+4p)/8p	p=30	1.2370
	X68CKX	((1/4)*(1+2*P))/P	P=30	1.9741

Statistical Analysis Summary of D21S11	
Likelihood Ratio (Grand Mean): **1.974**	Labs Included: **19**
Standard Deviation: **0.0000**	Labs Excluded: **2**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
D22S1045	24UE89	(k1+2k0a)/2a	a=16	1.153
	2NRC6Q	[0+(c/2x1/2)+(2bcx1/2)]/[2(bc)]	b=16, c=10	1.152741514
	6GCZFE	(0.25+c)/2c	c = 16	1.1527
	7UHFYP	((1/8)(1+4r))/r	r = 16	1.1527
	8K9D8W	(1+4v)/8v	v=0.1915	1.1527
	C3Q39Q	(1+(1/4a)/2	a=16	1.152
	E2CBCF	(0.25+p)/2p	p=16	1.1527
	GJ4YXU	(1+4p)/8p	p=16	1.1527
	GM4AUU	1/8pa+1/2	a = 16	1.153
	H22LZD	(1/8)(1+4p)/p	p = 16	1.1527
	JEG6RK	(1+4p)/8p	p = 16	1.153
	LZED67	[(1/8)x(1+4r)]/r	r=16	1.1527
	QK44KF	(1+4v)/8v	v=16	1.152741514
	TC6FMZ	q(1+4p)/4	p = 16, q = 10	0.01806
	U7A43N	(0.25+a)/2a	a= 16, b= 14, c= 10	1.1527
	VW6DYR	((1/8)(1+4r))/r	r=16	1.153
	VXY2HM	(0.25+c)/2c	c=16	1.1527
	WD9AVV	(1+4p)/8p	p=16	1.153
	WEHGXN	k1+2k0a/2a	a = 16	1.152
	WZUGYA	(1+4p)/8p	p=16	1.1527
	X68CKX	((1/8)*(1+4*R))/R	R=16	1.1527

Statistical Analysis Summary of D22S1045	
Likelihood Ratio (Grand Mean): **1.153**	Labs Included: **20**
Standard Deviation: **0.0003**	Labs Excluded: **1**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
CSF1PO	24UE89	$(k1+2k0a)/2a$	a=8	2.748
	2NRC6Q	$[0+(c/2x1/2)+(2acx1/2)]/[2(ac)]$	a=8, c=11	2.748201439
	6GCZFE	$(0.25+a)/2a$	a = 8	2.7482
	7UHFYP	$((1/8)(1+4r))/r$	r = 8	2.7482
	8K9D8W	$(1+4p)/8p$	p=0.0556	2.7482
	C3Q39Q	$(1+(1/4a)/2$	a=8	2.748
	E2CBCF	$(0.25+p)/2p$	p=8	2.7482
	GJ4YXU	$(1+4p)/8p$	p=8	2.7482
	GM4AUU	$1/8pa+1/2$	a = 8	2.748
	H22LZD	$(1/8)(1+4p)/p$	p = 8	2.7482
	JEG6RK	$(1+4p)/8p$	p = 8	2.748
	LZED67	$[(1/8)x(1+4r)]/r$	r=8	2.7482
	QK44KF	$(1+4p)/8p$	p=8	2.748201439
	TC6FMZ	$q(1+4p)/4$	p = 8, q = 11	0.07594
	U7A43N	$(0.25+a)/2a$	a= 8, b= 12, c= 11	2.7482
	VW6DYR	$((1/8)(1+4r))/r$	r=8	2.748
	VXY2HM	$(0.25+a)/2a$	a=8	2.7482
	WD9AVV	$(1+4p)/8p$	p=8	2.748
	WEHGXN	$k1+2k0a/2a$	a = 8	2.748
	WZUGYA	$(1+4p)/8p$	p=8	2.7482
	X68CKX	$((1/8)*(1+4*R))/R$	R=8	2.7482

Statistical Analysis Summary of CSF1PO

Likelihood Ratio (Grand Mean): **2.748**	Labs Included: **20**
Standard Deviation: **0.0001**	Labs Excluded: **1**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
FGA	24UE89	K0		0.500
	2NRC6Q	$[0+(0x1/2)+(2cdx1/2)]/[2(cd)]$	c=24, d=26	0.5
	6GCZFE	cd/2cd=0.5	c = 24, d = 26	0.50000
	7UHFYP	1/2		0.5000
	8K9D8W	1/2		0.5000
	C3Q39Q	1/2		0.5
	E2CBCF	/	/	0.5
	GJ4YXU	2/4		0.5000
	GM4AUU	1/2		0.5
	H22LZD	1/2		0.5000
	JEG6RK	1/2		0.5
	LZED67	1/2		0.5
	QK44KF	1/2		0.5
	TC6FMZ	pq	p = 24, q = 26	0.009337
	U7A43N	N/A		0.5000
	VW6DYR	1/2		0.5000
	VXY2HM	cd/2cd=0.5	c=24, d=26	0.5000
	WD9AVV	1/2	-	0.5
	WEHGXN	k0	na	0.5
	WZUGYA	-	-	1
	X68CKX	1/2	NA	0.5000

Statistical Analysis Summary of FGA

Likelihood Ratio (Grand Mean): **0.500**	Labs Included: **19**
Standard Deviation: **0.0000**	Labs Excluded: **2**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
PentaD	24UE89	$(k1+2k0a)/2a$	$a=3.2$	14.705
	2NRC6Q	$[0+(c/2x1/2)+(2acx1/2)]/[2(ac)]$	$a=3.2, c=2.2$	14.70454545
	6GCZFE	$(0.25+a)/2a$	$a = 3.2$	14.705
	7UHFYP	$((1/8)(1+4q))/q$	$q = 3.2$	14.7045
	8K9D8W	$(1+4q)/8q$	$q=0.0088$	14.7045
	C3Q39Q	$(1+(1/4a)/2$	$a=3.2$	14.704
	E2CBCF	$(0.25+p)/2p$	$p=3.2$	14.7045
	GJ4YXU	$(1+4p)/8p$	$p=3.2$	14.7045
	GM4AUU	$1/8pa+1/2$	$a = 3.2$	14.705
	H22LZD	$(1/8)(1+4p)/p$	$p = 3.2$	14.7045
	JEG6RK	$(1+4p)/8p$	$p = 3.2$	14.705
	LZED67	$[(1/8)x(1+4q)]/q$	$q=3.2$	14.7045
	QK44KF	$(1+4q)/8q$	$q=3.2$	14.70454545
	TC6FMZ	$q(1+4p)/4$	$p = 3.2,\ q = 2.2$	0.02950
	U7A43N	$(0.25+a)/2a$	$a= 3.2,\ b= 9,\ c= 2.2$	14.7050
	VW6DYR	$((1/8)(1+4q))/q$	$q=3.2$	14.70
	VXY2HM	$(0.25+a)/2a$	$a=3.2$	14.7045
	WD9AVV	$(1+4p)/8p$	$p=3.2$	14.705
	WEHGXN	$k1+2k0a/2a$	$a = 3.2$	14.704
	WZUGYA	$(1+4p)/8p$	$p=3.2$	14.7045
	X68CKX	$((1/8)*(1+4*P))/P$	$P=3.2$	14.7045

Statistical Analysis Summary of PentaD	
Likelihood Ratio (Grand Mean): **14.704**	Labs Included: **20**
Standard Deviation: **0.0011**	Labs Excluded: **1**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
PentaE	24UE89	(k1+2k0a)/2a	a=8	1.250
	2NRC6Q	[0+(c/2x1/2)+(2acx1/2)]/[2(ac)]	a=8, c=5	1.24985003
	6GCZFE	(0.25+a)/2a	a = 8	1.2499
	7UHFYP	((1/8)(1+4r))/r	r = 8	1.2499
	8K9D8W	(1+4s)/8s	s=0.1667	1.2499
	C3Q39Q	(1+(1/4a)/2	a=8	1.249
	E2CBCF	(0.25+p)/2p	p=8	1.2498
	GJ4YXU	(1+4p)/8p	p=8	1.2499
	GM4AUU	1/8pa+1/2	a = 8	1.250
	H22LZD	(1/8)(1+4p)/p	p = 8	1.2499
	JEG6RK	(1+4p)/8p	p = 8	1.250
	LZED67	[(1/8)x(1+4r)]/r	r=8	1.2499
	QK44KF	(1+4s)/8s	s=8	1.24985003
	TC6FMZ	q(1+4p)/4	p = 8, q = 5	0.03959
	U7A43N	(0.25+a)/2a	a= 8, b= 11, c= 5	1.2499
	VW6DYR	((1/8)(1+4r))/r	r=8	1.250
	VXY2HM	(0.25+a)/2a	a=8	1.2499
	WD9AVV	(1+4p)/8p	p=8	1.250
	WEHGXN	k1+2k0a/2a	a = 8	1.249
	WZUGYA	(1+4p)/8p	p=8	1.2499
	X68CKX	((1/8)*(1+4*P))/P	P=8	1.2499

Statistical Analysis Summary of PentaE

Likelihood Ratio (Grand Mean): **1.250**	Labs Included: **20**
Standard Deviation: **0.0003**	Labs Excluded: **1**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
SE33	24UE89	$(k1+2k0a)/2a$	a=18	1.543
	2NRC6Q	$[0+(c/2 \times 1/2)+(2acx1/2)]/[2(ac)]$	a=18, c=20	1.542535446
	6GCZFE	$(0.25+a)/2a$	a = 18	1.5425
	7UHFYP	$((1/8)(1+4p))/p$	p = 18	1.5425
	8K9D8W	$(1+4p)/8p$	p=0.1199	1.5425
	C3Q39Q	$(1+(1/4a)/2$	a=18	1.542
	E2CBCF	$(0.25+p)/2p$	p=18	1.5425
	GJ4YXU	$(1+4p)/8p$	p=18	1.5425
	GM4AUU	$1/8pa+1/2$	a = 18	1.543
	H22LZD	$(1/8)(1+4p)/p$	p = 18	1.5425
	JEG6RK	$(1+4p)/8p$	p = 18	1.543
	LZED67	$[(1/8) \times (1+4p)]/p$	p=18	1.5425
	QK44KF	$(1+4p)/8p$	p=18	1.542535446
	TC6FMZ	$q(1+4p)/4$	p = 18, q = 20	0.03625
	U7A43N	$(0.25+a)/2a$	a= 18, b= 25.2, c= 20	1.5425
	VW6DYR	$((1/8)(1+4p))/p$	p=18	1.543
	VXY2HM	$(0.25+a)/2a$	a=18	1.5425
	WD9AVV	$(1+4p)/8p$	p=18	1.543
	WEHGXN	$k1+2k0a/2a$	a = 18	1.542
	WZUGYA	$(1+4p)/8p$	p=18	1.5425
	X68CKX	$((1/8)*(1+4*P))/P$	P=18	1.5425

Statistical Analysis Summary of SE33	
Likelihood Ratio (Grand Mean): **1.543**	Labs Included: **20**
Standard Deviation: **0.0003**	Labs Excluded: **1**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
TH01	24UE89	$(k1+2k0a)/2a$	a=9.3	1.795
	2NRC6Q	$[0+(c/2x1/2)+(2bcx1/2)]/[2(bc)]$	b=9.3, c=7	1.795336788
	6GCZFE	$(0.25+c)/2c$	c = 9.3	1.7953
	7UHFYP	$((1/8)(1+4r))/r$	r = 9.3	1.7953
	8K9D8W	$(1+4a)/8a$	a=0.0965	1.7953
	C3Q39Q	$(1+(1/4a)/2$	a=9.3	1.795
	E2CBCF	$(0.25+p)/2p$	p=9.3	1.7953
	GJ4YXU	$(1+4p)/8p$	p=9.3	1.7953
	GM4AUU	$1/8pa+1/2$	a = 9.3	1.795
	H22LZD	$(1/8)(1+4p)/p$	p = 9.3	1.7953
	JEG6RK	$(1+4p)/8p$	p = 9.3	1.795
	LZED67	$[(1/8)x(1+4r)]/r$	r=9.3	1.7953
	QK44KF	$(1+4a)/8a$	a=9.3	1.795336788
	TC6FMZ	$q(1+4p)/4$	p = 9.3, q = 7	0.1413
	U7A43N	$(0.25+a)/2a$	a= 9.3, b= 6, c= 7	1.7953
	VW6DYR	$((1/8)(1+4r))/r$	r=9.3	1.795
	VXY2HM	$(0.25+c)/2c$	c=9.3	1.7953
	WD9AVV	$(1+4p)/8p$	p=9.3	1.795
	WEHGXN	$k1+2k0a/2a$	a = 9.3	1.795
	WZUGYA	$(1+4p)/8p$	p=9.3	1.7953
	X68CKX	$((1/8)*(1+4*R))/R$	R=9.3	1.7953

Statistical Analysis Summary of TH01

Likelihood Ratio (Grand Mean): **1.795**	Labs Included: **20**
Standard Deviation: **0.0001**	Labs Excluded: **1**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
TPOX	24UE89	$(k1+k0a)/a$	a=8	1.179
	2NRC6Q	$[0+(a/2x1/2)+(a\char94 2x1/2)]/[a\char94 2]$	a=8	1.179347826
	6GCZFE	$(0.25+(b/2))/b$	b = 8	1.1793
	7UHFYP	$((1/4)(1+2p))/p$	p = 8	1.1793
	8K9D8W	$(1+2p)/4p$	p=0.368	1.1793
	C3Q39Q	$(1+(1/2a)/2$	a=8	1.179
	E2CBCF	$0.5+(0.25/p)$	p=8	1.1793
	GJ4YXU	$(1+2p)/4p$	p=8	1.1793
	GM4AUU	$1/4pa+1/2$	a = 8	1.179
	H22LZD	$(1/4)(1+2p)/p$	p = 8	1.1793
	JEG6RK	$(1+2p)/4p)$	p = 8	1.179
	LZED67	$[(1/4)x(1+2p)]/p$	p=8	1.1793
	QK44KF	$(1+2p)/4p$	p=8	1.179347826
	TC6FMZ	$p(1+2p)/4$	p = 8	0.1597
	U7A43N	$(0.5+a)/2a$	a= 8, b= 9	1.1793
	VW6DYR	$((1/4)(1+2p))/p$	p=1.179	1.179
	VXY2HM	$(0.25+(b/2))/b$	b=8	1.1793
	WD9AVV	$(1+2p)/4p$	p=8	1.179
	WEHGXN	$k1+k0a/a$	a = 8	1.179
	WZUGYA	$(1+4p)/8p$	p=8	0.8397
	X68CKX	$((1/4)*(1+2*P))/P$	P=8	1.1793

Statistical Analysis Summary of TPOX	
Likelihood Ratio (Grand Mean): **1.179**	Labs Included: **19**
Standard Deviation: **0.0002**	Labs Excluded: **2**

TABLE 6

Locus	WebCode	Formula	Allele Legend	Likelihood Ratio
vWA	24UE89	(k1+k0a)/a	a=16	1.500
	2NRC6Q	[0+(a/2x1/2)+(a^2x1/2)]/ [a^2]	a=16	1.5
	6GCZFE	(0.25+(b/2))/b	b = 16	1.5000
	7UHFYP	((1/4)(1+2p))/p	p = 16	1.5000
	8K9D8W	(1+2p)/4p	p=0.25	1.5000
	C3Q39Q	(1+(1/2a)/2	a=16	1.500
	E2CBCF	0.5+(0.25/p)	p=16	1.5
	GJ4YXU	(1+2p)/4p	p=16	1.5000
	GM4AUU	1/4pa+1/2	a = 16	1.5
	H22LZD	(1/4)(1+2p)/p	p = 16	1.5000
	JEG6RK	(1+2p)/4p)	p = 16	1.500
	LZED67	[(1/4)x(1+2p)]/p	p=16	1.5
	QK44KF	(1+2p)/4p	p=16	1.5
	TC6FMZ	p(1+2p)/4	p = 16	0.09375
	U7A43N	(0.5+a)/2a	a= 16, b= 18	1.5000
	VXY2HM	(0.25+(b/2))/b	b=16	1.5000
	WD9AVV	(1+2p)/4p	p=16	1.5
	WEHGXN	k1+k0a/a	a = 16	1.5
	WZUGYA	(1+4p)/8p	p=16	1
	X68CKX	((1/4)*(1+2*P))/P	P=16	1.5000

Statistical Analysis Summary of vWA	
Likelihood Ratio (Grand Mean): **1.500**	Labs Included: **18**
Standard Deviation: **0.0000**	Labs Excluded: **2**

Kinship DNA Statistics

Is the claim of the following relationship supported by the genetic evidence: **Uncle and Nephew**?

TABLE 7

WebCode	Kinship Index	Claim Supported?
24UE89	401.671	No. The relationship of uncle and nephew is not supported by genetic evidence
2NRC6Q	401.6712498	The genetic evidence provides a moderately strong support of the relationship of Uncle and Nephew.
6GCZFE	401.7	Yes
7UHFYP	401.6713	Yes
8K9D8W	401.67	Yes
C3Q39Q	400.015	yes
E2CBCF	401	yes*
GJ4YXU	400	Yes
GM4AUU	401	Y
H22LZD	401.6	Yes
JEG6RK	402	The evidence provides moderate support for the relationship
LZED67	401.6712	Yes
QK44KF	379.2018497	Yes
TC6FMZ	1.347748	Maybe yes
U7A43N	400	Yes
VW6DYR	267.7808	Yes
VXY2HM	401.7	yes
WD9AVV	401.459	Yes
WEHGXN	401.6	Yes
WZUGYA	739.310346	Supported
X68CKX	401.6856	Yes

(85)

Additional Kinship Statistical Results

TABLE 8

WebCode	Additional Statistical Results
24UE89	When performing the comparison between the genetic profile reported as C with the genetic profile reported as D, a kinship index of 401,671 and a kinship probability of 99.751% were obtained. Additional filiation analysis must be performed.
2NRC6Q	Reference: Butler, J. 2010. Fundamentals of Forensic DNA Typing. Elservier Inc.
6GCZFE	AUTOSOMAL STRs: The DNA profile is single source. The kinship index supports the hypothesis that Profile D is the nephew of Profile C using the reference populations listed. The genotype observed for Profile D is "X" times more likely to occur in a nephew of Profile C than in someone unrelated to Profile C from the reference populations listed where "X" equals: African American – 46, Caucasian – 160, Hispanic – 23. Additional notes: The above listed statistics were calculated using the FBI database without Penta E and Penta D per standard laboratory procedure and were entered into the laboratory's information management system, Justicetrax, for reporting purposes. The results reported for part III [Table 7 - Kinship Likelihood Ratio Results], questions 1-2 of the proficiency test were calculated using the NIST database/allele frequencies provided by the proficiency test provider with Penta E and Penta D included.
8K9D8W	Probability of the stated relationship: 99.7517%.
C3Q39Q	DNA evidence supports uncle/nephew relationship.
E2CBCF	It is about 53 more likely to observe these results if the uncle and nephew are related rather than if they are unrelated. *In view of the value of the kinship index and depending on the additional information (paternal or maternal uncle) additional analyzes would be relayed
GJ4YXU	KI provided to 2 significant figures.
GM4AUU	The DNA profile obtained from the C was compared to the DNA profile obtained from D. The DNA evidence is approximately 400 times more likely if D is a nephew of C rather than being an unknown male, unrelated to D. In my opinion, the DNA profiling results provide strong scientific support for the proposition that D is the nephew of C.
JEG6RK	Our protocols would normally take linkage into consideration, however, linkage was not considered in this instance for the purposes of the test.
QK44KF	Our laboratory concludes that, based on the values of the likelihood ratio, the biological relationship of uncle/nephew is moderately supported. Our conclusions are based on the considerations referred by John M. Butler 2014. (Butler, J. M. Advanced Topics in Forensic DNA Typing: Interpretation, Academic Press, 2014) in terms of the interpretation of LR values. In order to strengthen the statistical values for the likelihood ratio, our laboratory suggests the use of other identification systems, as long as they are available.
U7A43N	The kinship index supports the hypothesis that Profile D is the Nephew of Profile C using the reference populations listed. The genotype observed for Profile D is "X" times more likely to occur in a Nephew of Profile C than in someone unrelated to Profile C from the reference populations listed where "X" equals: African American - 46, Caucasian - 160, Hispanic - 23
VW6DYR	vWA ignored due to linkage with D12S391.

TABLE 8

WebCode	Additional Statistical Results
VXY2HM	*Below is what would be reported based on current laboratory procedures, excluding Penta D and Penta E and using the Expanded FBI STR 2015 population database *. AUTOSOMAL STRs: The DNA profile is single source. The kinship index supports the hypothesis that Known DNA profile - Uncle is the uncle of Known DNA profile - Nephew using the reference populations listed. The genotype observed for Known DNA profile - Uncle is "X" times more likely to occur in an uncle of Known DNA profile - Nephew than in someone unrelated to Known DNA profile - Nephew from the reference populations listed where "X" equals: African American – 46, Caucasian – 160, Hispanic – 23
WZUGYA	Kinship Index = 739.310346, Posterior Probability = 0.998649215066, %Probability = 99.8649215%

Additional Comments

TABLE 9

WebCode	Additional Comments
24UE89	PART I [Tables 1-4] COMMENTS: In our laboratory the results of exclusion are confirmed by reprocessing from original samples, a procedure performed in the present test for Item 4. Likewise, our internal protocols establish that for cases with results of confirmed exclusion, it is not necessary to perform probability calculations. PART II [Table 5 - Paternity DNA Statistics & Conclusions] COMMENTS: The probability calculation for Penta E system was not included in the analysis of the present test, because the frequency of the silent allele necessary to obtain the corresponding PI value was not supplied. PART III [Table 7 - Kinship Likelihood Ratio Results] COMMENTS: K0= 0.500, K1= 0.250
2RM9L4	The Penta E locus was determined to be Inconclusive for Paternity analysis due to a possible null allele in Sample 2 (Known Child) and/or Sample 3 (Alleged Father A). This locus is only in the PowerPlex Fusion kits so no further testing could be conducted to confirm the Penta E alleles. NR = No Results
3XC44M	Per laboratory policy, the vWA locus will not be used for statistical evaluations when complete profiles are used for kinship comparisons.
8K9D8W	About the single-locus mismatch in the paternal inclusion case (between the Child--Item2 and AF1--Item3): Extensive testing confirmed possible mutation in the Child's and the Father's PentaE. It is very likely that there is a mutation at the primer binding site for the particular multiplex systems used (PowerPlex Fusion 5C), resulting in the appearance of an allele dropout. And this is likely to be the case for both the child and the father. The mutation index was included in the calculations. The paternity index at this locus was calculated as: (Mutation rate)/(power of exclusion). Paternal mutation rate used for PentaE was: 2.60×10^{-4} (per Ge et al. Investigative Genetics 2012, 3:1 | David Gjertson, Appendix 8, 13th Standards, Appendix 5). The Power of exclusion was extracted from the Promega/NIST database.
9EHDBG	NAO = No allele observed. For Item 4, locus PI is indicated for loci where the locus conclusion is included. At loci where the locus is excluded, no PI was calculated.
ADYREJ	The lab has ceased to performing YSTR amplification in 2019 until further notice.
AJ8D43	Apparent null alleles observed in Items 2 and 3 at Penta E. Locus dropped from calculation of Combined Paternity Index.
APRHTW	The Combined Paternity Index value and Probability of Paternity were calculated without the frequency of Penta E due to a possible null allele for Item 3 - Alleged Father A. NR = No Result
BZVQG9	The Alleged Father A (item 3) may have a null allele at Penta E based on the peak height of the 15 allele. I used the mutation rate 0.002 and Mean Power of Exclusion (0.81704)for this locus (calculated in PopStats). We do not report the probability of paternity.
CM2Q3C	NAO - No Allele observed at this locus. For item 4, locus PI is indicated for loci where the locus conclusion is included. At loci where the locus is excluded, no PI was calculated.
EDNGP3	The parentage evaluation of the profile excluded vWA from only the statistical calculation. vWA was evaluated for allele sharing.
ETH7JE	By studying the DNA profiles of all four donors we clarify the following:- 1- Blood Sample labeled with Item 1 is the biological mother of the donor of Blood Stain labeled with item 2. 2- Blood Sample labeled with Item 3 is the biological father of the donor of Blood Stain labeled with item 2. 3- Blood Sample labeled with Item 4 is not the biological father of the donor of Blood Stain labeled with item 2

TABLE 9

WebCode	Additional Comments
FDKDD4	NR = No Results. My laboratory does not produce PI calculations. For criminal paternity cases, my laboratory calculates the "Random Man Not Excluded" statistical calculation (RMNE). The formula used is: $p^2 + 2p(1\text{-}p) = 2p - p^2$, where p is the frequency of the obligatory allele when one obligatory allele is present, and $= (2p1 - p1^2)+(2p2 - p2^2)-(2p1p2)$ if two obligatory alleles are present. The statistic is calculated for the African American, Caucasian and SE Hispanic population, and then, the most common population statistic of the three populations is reported. In this scenario, the SE Hispanic population was the most common of the three and the one which would be reported. That statistic is as follows: Combined Match Probability (CMP) = 2.167E-13 1/CMP = 4.615E12. The above statistic includes all loci except Penta E as no obligatory allele could be assigned due to a possible mutation between alleged father and child.
GHR9NQ	A possible null allele may be present at Penta E but could not be confirmed due to a lack of an additional kit containing Penta E. NR=No results.
GJ4YXU	Noted Mendelian inconsistency at Penta E for the paternity test. This appears likely to be due to a null allele, however this lab does not have access to estimates of null allele frequencies at this locus. PI (7.404E-05) was determined using a mutation model alone. This PI would be lower than assessing the chance of either a mutation or a null allele at this locus, and would favor non-paternity.
GM4AUU	As per laboratory protocols for the paternity trio calculation linkage has been taken into account by diving the final PI by 4. Also a theta value of 0.03 has been used in calculations.
JEG6RK	PI calculations not provided for Item 4 since alleged father was excluded as being the biological father of donor of Item 2 at profile comparison, therefore calculations not required as per lab protocol.
LZED67	Paternal mutation in AF A at Penta E that affects the RI calculation. Our policy would be to report the locus with the mutation considered in the CRI calculation.
MZWMT2	NAO = No alleles observed. For Item 4, locus PI is indicated for loci where the locus conclusion is included. At loci where the locus is excluded, no PI was calculated.
N6JXYG	A possible null allele was seen at Penta E in Item 2. Since our laboratory does not have another kit with the Penta E locus, no further troubleshooting was done on this sample. Since I cannot confirm whether this locus has a true null allele or is a mutation, the locus is inconclusive and will not be used in the statistical analysis. NR = No results
NL9YYT	Locus vWA not used in our laboratory.
PDTMDF	1) The loci that were not reported were left in blanck in the data sheet section. 2) For the statistical calculations, the Laboratory used the Software PatCan2. Manual calculations were also used to confirm the results. 3) The Laboratory does not perform Kinship studies, this section is left in blank. 4) Additional loci were not included because the Laboratory only uses the PowerPlex Fusion 5C kit. 5) A probable paternal mutation was observed in the Penta E marker for the child (item 2) in reference to the Alleged Father A. To calculate the PI (paternity index), the mutation model based on the power of exclusion was used. 6) In the sample ID Item 3, an allele variant was observed in the YSTR DYS456.
QK44KF	In relation to the paternity study, our laboratory concludes that the alleged father A (Item-3) can not be excluded from being the biological father. During the analysis, a null allele was observed in the Penta E marker for the PowerPlex Fusion System for the daughter (Item-2), so the analysis involved the use of the minimum frequency of the population used for said marker, applying the 5/2n formula according to the recommendation in the National Research Council report (NRCII) "The Evaluation of Forensic DNA Evidence published" in 1996 (where n is the number of individuals in the population, with a value of n = 236 according to the allelic frequency of the 2017 Hispanic population reported in NIST-STRBASE. In order to strengthen the statistical values for the paternity index and the percentage of paternity, our laboratory suggests the use of other identification systems, as long as it has them.

TABLE 9

WebCode	Additional Comments
U7A43N	For the Kinship portion of this test, the NIST database was used for the calculations that were reported to CTS. The FBI population data was used for reporting the statistics on the laboratory's report of examination as well as listed in the 'additional statistical results and relationship conclusions' reported to CTS.
UDAKDU	Our lab does not calculate probability of paternity.
V79PVL	Assuming prior probabilities of 10%, 50%, and 90%, the probability of paternity in this case is greater than 99.99%. The following locus was not used in the statistical calculation: vWA.
VW6DYR	Item 3 (Alleged Father) had a possible null allele at the locus Penta E.
VXFHAV	Our laboratory does not evaluate avuncular relationships for kinship. We do not have a protocol for this evaluation. vWA was not used for kinship calculation.
VXY2HM	Report wording based on current laboratory procedures: Item 001.A.03.a: Biological stain cutting of FTA blood card, item 1, described as alleged father A; Subject, Subject A; ~ 7x7mm cutting consumed; DNA Number D2972. AUTOSOMAL STRs: The DNA profile is single source. The alleged father, Subject A Subject, cannot be excluded as the potential biological father of the child, Child Victim, using Autosomal STRs. These profiles are "X" times more likely to occur if Child Victim is the child of Victim Victim and Subject A Subject than if Child Victim is the child of Victim Victim and a random person from the reference populations listed where "X" equals: African American – 22 trillion, Caucasian – 2.7 trillion, Hispanic – 1.4 trillion. Y-STRs: The DNA profile is single source. Item 001.A.04.a: Biological stain cutting of FTA blood card, item 1, described as alleged father B; Subject, Subject B; ~ 7x7mm cutting consumed; DNA Number D2973. AUTOSOMAL STRs: The DNA profile is single source. The alleged father, Subject B Subject, is excluded as the potential biological father of the child, Child Victim, using Autosomal STRs. Y-STRs: The DNA profile is single source.
WEHGXN	The following comments apply to the Paternity DNA results: A single inconsistency was detected between the Child and Alleged Father A at Penta E. All other loci indicate a parent-child relationship. This inconsistency may be due to the presence of a null allele, or may indicate that Alleged Father A is a close relative of the true parent. Additional testing is recommended.
WZUGYA	In the topic YSTR Kit Specific Loci Ordering For Item 3: Our laboratory uses the YFiler™ Amplification kit for specific Loci. At DYS456 marker of item 3 does not match with bin ladder of YFiler™ Amplification kit. Therefore we cannot call allele in this DYS456 marker of item 3.
XGZYTE	It appears from the DNA profiling results that there is a null allele at Penta E in both of the DNA profiles obtained from Item 3 (Alleged Father A) and Item 2 (Known Child) and as such, the Penta E locus was dropped for statistical analysis. Reference: AP Wagner et al (2006) Estimating relatedness and relationships using microsatellite loci with null alleles - source Dakin & Avice 2004.
ZM2UPJ	CPI was calculated using vWA, but not D12S391, to account for the possibility that these loci could be in linkage disequilibrium for paternity samples.

-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			
D7S820	9,12	9,11	9: 0.1676	11: 0.2050			
			12: 0.1593				

Locus	A	B	Allele Frequencies		Formula Used	Allele Legend	Likelihood Ratio
D8S1179	10,13	11,13	10: 0.1025	11: 0.0762			
			13: 0.3296				
D10S1248	13,15	15,16	13: 0.3075	15: 0.1967			
			16: 0.1330				
D12S391	19,20	19,19	19: 0.1247	20: 0.1108			
D13S317	11,12	8,9	8: 0.1205	9: 0.0776			
			11: 0.3255	12: 0.2687			
D16S539	11,13	11,12	11: 0.3144	12: 0.3144			
			13: 0.1634				
D18S51	13,15	12,15	12: 0.1136	13: 0.1233			
			15: 0.1704				
D19S433	14,14	13,14	13: 0.2548	14: 0.3615			
D21S11	28,31.2	28,29	28: 0.1593	29: 0.2022			
			31.2: 0.0983				
D22S1045	11,16	15,16	11: 0.1399	15: 0.3213			
			16: 0.3823				
CSF1PO	10,12	11,12	10: 0.2202	11: 0.3089			
			12: 0.3601				
FGA	22,26	20,22	20: 0.1233	22: 0.2050			
			26: 0.0263				
PentaD	9,12	9,12	9: 0.2216	12: 0.2327			

Locus	A	B	Allele Frequencies		Formula Used	Allele Legend	Likelihood Ratio
PentaE	15,16	5,15	5: 0.0762	15: 0.0429			
			16: 0.0512				
SE33	17,28.2	26.2,28.2	17: 0.0623	26.2: 0.0416			
			28.2: 0.0762				
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.*
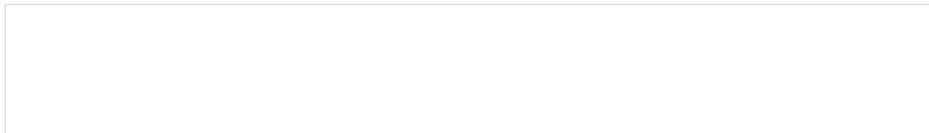
RELEASE OF DATA TO ACCREDITATION BODIES

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)