



## **DNA Parentage Test No. 15-5871 Summary Report**

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This proficiency test was sent to 38 participants. Each participant received a sample pack consisting of the standard paternity trio, collected from a mother, son, and alleged father. Participants were requested to analyze the samples using their existing protocols. Data were returned from 32 participants (84% response rate) and are compiled into the following tables:

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

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

## **Manufacturer's Information**

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

**SAMPLE PREPARATION:** All stains were prepared from human whole blood which was drawn into EDTA tubes. Item 1 (75  $\mu$ l) was created using blood collected from a female (mother) donor, Item 2 (75  $\mu$ l) was from a male (son) donor and Item 3 (75  $\mu$ l) was created using blood collected from one male (the biological father) donor. Each different Item was prepared at separate times and all three items were packaged once they were thoroughly dried. Completed sample sets were stored at -20°C until shipment on May 11, 2015.

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

**KINSHIP EXERCISE:** This exercise included allelic results representing a nephew/uncle relationship.

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

**Manufacturer's Information, continued****Amelogenin and STR Results**

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

<b>Item</b>	<b>D1S1656</b> <b>D8S1179</b> <b>D19S433</b> <b>Penta D</b>	<b>D2S1338</b> <b>D10S1248</b> <b>D21S11</b> <b>Penta E</b>	<b>D2S441</b> <b>D12S391</b> <b>D22S1045</b> <b>SE33</b>	<b>D3S1358</b> <b>D13S317</b> <b>Amelogenin</b> <b>TH01</b>	<b>D5S818</b> <b>D16S539</b> <b>CSF1PO</b> <b>TPOX</b>	<b>D7S820</b> <b>D18S51</b> <b>FGA</b> <b>vWA</b>
1	* 13,14 15,16 *	17,19 * 30,30.2 *	* * * *	17,18 12,12 X,X 7,8	12,12 11,13 12,13 8,8	8,11 13,14 20,24 15,16
2	* 13,15 14,16 *	19,23 * 30,30.2 *	* * * *	16,17 8,12 X,Y 7,8	12,13 10,11 10,13 8,8	8,8 13,15 20,24 15,19
3	* 12,15 14,14 *	18,23 * 29,30 *	* * * *	15,16 8,13 X,Y 7,9.3	12,13 9,11 10,10 8,8	8,10 15,18 20,22 17,19

**YSTR Results**

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

<b>Item</b>	<b>DYS19</b> <b>DYS437</b> <b>DYS549</b>	<b>DYS385</b> <b>DYS438</b> <b>DYS570</b>	<b>DYS389-I</b> <b>DYS439</b> <b>DYS576</b>	<b>DYS389-II</b> <b>DYS448</b> <b>DYS635</b>	<b>DYS390</b> <b>DYS456</b> <b>DYS643</b>	<b>DYS391</b> <b>DYS458</b> <b>Y GATA H4</b>	<b>DYS392</b> <b>DYS481</b> <b>Y Indel</b>	<b>DYS393</b> <b>DYS533</b>
2	14 16 *	13,14 10 *	12 11 *	28 20 22	23 14 *	10 17 11	11 * *	13 * *
3	14 16 *	13,14 10 *	12 11 *	28 20 22	23 14 *	10 17 11	11 * *	13 * *

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

**Manufacturer's Information, continued**

<b>Paternity Indices</b>						
<i>Median Paternity Index results compiled from predistribution laboratories and a consensus of at least 10 participants.</i>						
<b>Database</b>	<b>D1S1656</b> <b>D8S1179</b> <b>D19S433</b> <b>Penta D</b>	<b>D2S1338</b> <b>D10S1248</b> <b>D21S11</b> <b>Penta E</b>	<b>D2S441</b> <b>D12S391</b> <b>D22S1045</b> <b>SE33</b>	<b>D3S1358</b> <b>D13S317</b> <b>Amelogenin</b> <b>TH01</b>	<b>D5S818</b> <b>D16S539</b> <b>CSF1PO</b> <b>TPOX</b>	<b>D7S820</b> <b>D18S51</b> <b>FGA</b> <b>vWA</b>
3PI-FBI	*	*	*	2.15	3.42	3.06
Popstats	4.56	*	*	5.03	*	3.92
	*	1.85	*		3.96	1.77
	*	*	*	1.67	1.83	5.94
3PI-NIST	*	4.694	*	2.085	3.5	3.47
STRBASE	4.755	*	*	4.1495	*	2.93
	2.76	1.6	*		4.54	1.94
	*	*	*	1.7235	1.9025	4.81

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

## **Summary Comments**

The 15-5871 DNA Parentage test was designed to allow participants to assess their proficiency in the analysis and interpretation of a standard trio of blood stains on FTA Micro cards. Item 1 was blood collected from a female donor (mother), Item 2 was blood collected from a male donor (son) and Item 3 was blood collected from a male donor (potential father of Item 2). Participants were requested to analyze the samples and provide allelic and statistical results and relationship conclusions regarding the potential father. Sample sets also included a kinship exercise provided on the data sheets where participants were requested to evaluate the provided DNA profiles and report the kinship index and relationship conclusions. [Refer to the Manufacturer's Information for preparation details]

For Paternity DNA Statistics (Table 5), 29 participants reported the Combined Paternity Index and 27 reported the Probability of Paternity. Although the majority of these participants reported using either the NIST-STRBASE or the FBI-Popstats database for their calculations, the statistical responses varied. Of the 30 that reported a paternity conclusion (Table 6), 28 reported that the potential father (Item 3) could not be excluded as the biological parent of the son (Item 2) and two reported inconclusive.

For Kinship DNA Statistics (Table 7), a variety of responses were provided for the kinship index. Of the 10 responding participants, seven reported that the genetic evidence supported the claim of an Avuncular relationship, two stated that they do not perform testing on this type of kinship relationship or that they do not have reporting guidelines for this type of kinship relationship and one reported that this claim was not supported by the genetic evidence. Statistical responses for both paternity and kinship questions varied even though some participants used the same population database.

Only one participant reported allelic results that differed from the consensus/predistribution results. This participant reported inconsistent alleles for multiple loci in Item 2.

# Amelogenin & STR Results

TABLE 1

WebCode	Item	D1S1656 D8S1179 D19S433 Penta D	D2S1338 D10S1248 D21S11 Penta E	D2S441 D12S391 D22S1045 SE33	D3S1358 D13S317 Amelogenin TH01	D5S818 D16S539 CSF1PO TPOX	D7S820 D18S51 FGA vWA
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## Item 1

32UBHG	<i>COfiler® and Profiler Plus®</i>						
	1				17,18	12,12	8,11
		13,14			12,12	11,13	13,14
			30,30.2		X,X	12,13	20,24
				7,8	8,8	15,16	
3ZL2QJ	<i>Identifiler® Plus</i>						
	1		17,19		17,18	12	8,11
		13,14			12	11,13	13,14
		15,16	30,30.2		X	12,13	20,24
				7,8	8	15,16	
4VM87N	<i>Identifiler® Plus</i>						
	1		17,19		17,18	12,12	8,11
		13,14			12,12	11,13	13,14
		15,16	30,30.2		X,X	12,13	20,24
				7,8	8,8	15,16	
6D3XJD	<i>COfiler® and Profiler Plus®</i>						
	1				17,18	12,12	8,11
		13,14			12,12	11,13	13,14
			30,30.2		X,X	12,13	20,24
				7,8	8,8	15,16	
ABXYBF	<i>Globalfiler</i>						
	1	12,15.3	17,19	10,14	17,18	12,12	8,11
		13,14	14,15	16,19	12,12	11,13	13,14
		15,16	30,30.2	15,16	X,X	12,13	20,24
			16,23	7,8	8,8	15,16	
B98RR4	<i>Identifiler® Plus</i>						
	1		17,19		17,18	12,12	8,11
		13,14			12,12	11,13	13,14
		15,16	30,30.2		X,X	12,13	20,24
				7,8	8,8	15,16	
BWWKPC	<i>Identifiler® Direct</i>						
	1	-	17,19	-	17,18	12	8,11
		13,14	-	-	12	11,13	13,14
		15,16	30,30.2	-	X,X	12,13	20,24
	-	-	-	7,8	8	15,16	
DJFERE	<i>COfiler® and Profiler Plus®</i>						
	1				17,18	12,12	8,11
		13,14			12,12	11,13	13,14
			30,30.2		X,X	12,13	20,24
				7,8	8,8	15,16	

TABLE 1

WebCode	Item	D1S1656 D8S1179 D19S433 Penta D	D2S1338 D10S1248 D21S11 Penta E	D2S441 D12S391 D22S1045 SE33	D3S1358 D13S317 Amelogenin TH01	D5S818 D16S539 CSF1PO TPOX	D7S820 D18S51 FGA vWA
<b>Item 1</b>							
E3B8CD	<i>Identifiler® Plus</i>						
	1	17,19			17,18	12,12	8,11
		13,14			12,12	11,13	13,14
		15,16	30,30.2		X,X	12,13	20,24
					7,8	8,8	15,16
E3C6M9	<i>GoldenEye 20A</i>						
	1	17,19			17,18	12	8,11
		13,14		16,19	12	11,13	13,14
		15,16	30,30.2		X	12,13	20,24
		13,14	11,14		7,8	8	15,16
EJVXCC	<i>PowerPlex® PP21</i>						
	1	12,15.3	17,19		17,18	12,12	8,11
		13,14		16,19	12,12	11,13	13,14
		15,16	30,30.2		X,X	12,13	20,24
		13,14	11,14		7,8	8,8	15,16
FURLHY	<i>PowerPlex® fusion</i>						
	1	12,15.3	17,19	10,14	17,18	12,12	8,11
		13,14	14,15	16,19	12,12	11,13	13,14
		15,16	30,30.2	15,16	X,X	12,13	20,24
		13,14	11,14		7,8	8,8	15,16
G4UZ4X	<i>GlobalFiler™ Express</i>						
	1	12,15.3	17,19	10,14	17,18	12,12	8,11
		13,14	14,15	16,19	12,12	11,13	13,14
		15,16	30,30.2	15,16	X,X	12,13	20,24
		NA	NA	16,13	7,8	8,8	15,16
G9N37C	<i>Identifiler® Plus</i>						
	1	17,19			17,18	12	8,11
		13,14			12	11,13	13,14
		15,16	30,30.2		X	12,13	20,24
					7,8	8	15,16
J4A4P4	<i>Identifiler® Plus</i>						
	1	17,19			17,18	12	8,11
		13,14			12	11,13	13,14
		15,16	30,30.2		X	12,13	20,24
					7,8	8	15,16
JAXL6Z	<i>COfiler® and Profiler Plus®</i>						
	1				17,18	12,12	8,11
		13,14			12,12	11,13	13,14
		30,30.2			X,X	12,13	20,24
					7,8	8,8	15,16

TABLE 1

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

## Item 1

MDH824	<i>Identifiler® Plus</i>	1	17,19		17,18	12	8,11	
			13,14		12	11,13	13,14	
			15,16	30,30.2		X	12,13	20,24
						7,8	8	15,16
N483QX	<i>Identifiler® Plus</i>	1	17,19		17,18	12	8,11	
			13,14		12	11,13	13,14	
			15,16	30,30.2		X	12,13	20,24
						7,8	8	15,16
NRDNQ2	<i>PowerPlex® PP21</i>	1	12,15.3	17,19	N/A	17,18	12,12	8,11
			13,14	N/A	16,19	12,12	11,13	13,14
			15,16	30,30.2	N/A	X,X	12,13	20,24
			13,14	11,14	N/A	7,8	8,8	15,16
PAXF8Z	<i>Identifiler® Plus</i>	1	17,19		17,18	12,12	8,11	
			13,14		12,12	11,13	13,14	
			15,16	30,30.2		X,X	12,13	20,24
						7,8	8,8	15,16
QCCQJM	<i>Identifiler® Identifiler PLUS</i>	1	-	17,19	-	17,18	12,12	8,11
			13,14	-	-	12,12	11,13	13,14
			15,16	30,30.2	-	X,X	12,13	20,24
			-	-	-	7,8	8,8	15,16
R39XPL	<i>PowerPlex® FUSION, GLOBAL FILER</i>	1	12,15.3	17,19	10,14	17,18	12	8,11
			13,14	14,15	16,19	12	11,13	13,14
			15,16	30,30.2	15,16	X,X	12,13	20,24
			13,14	11,14	16,23	7,8	8	15,16
TBVGJL	<i>Identifiler® , PowerPlex®</i>	1	17,19		17,18	12,12	8,11	
			13,14		12,12	11,13	13,14	
			15,16	30,30.2		X,X	12,13	20,24
			13,14	11,14		7,8	8,8	15,16
VREU9W	<i>COfiler® and Profiler Plus®</i>	1			17,18	12,12	8,11	
			13,14		12,12	11,13	13,14	
				30,30.2		X,X	12,13	20,24
						7,8	8,8	15,16



TABLE 1

WebCode	Item	D1S1656 D8S1179 D19S433 Penta D	D2S1338 D10S1248 D21S11 Penta E	D2S441 D12S391 D22S1045 SE33	D3S1358 D13S317 Amelogenin TH01	D5S818 D16S539 CSF1PO TPOX	D7S820 D18S51 FGA vWA
<b>Item 1</b>							
VXKPRW	<i>Identifiler® Plus</i>						
	1	17,19		17,18	12	8,11	
		13,14		12	11,13	13,14	
		15,16	30,30.2	X	12,13	20,24	
				7,8	8	15,16	
W82UEM	<i>COfiler® and Profiler Plus®</i>						
	1			17,18	12,12	8,11	
		13,14		12,12	11,13	13,14	
		30,30.2		X,X	12,13	20,24	
				7,8	8,8	15,16	
WH2JVN	<i>Identifiler® Identifiler Plus</i>						
	1	17,19		17,18	12	8,11	
		13,14		12	11,13	13,14	
		15,16	30,30.2	X	12,13	20,24	
				7,8	8	15,16	
XD9HRN	<i>Identifiler® Direct</i>						
	1	-	17,19	-	17,18	12	8,11
		13,14	-	-	12	11,13	13,14
		15,16	30,30.2	-	X,X	12,13	20,24
		-	-	-	7,8	8	15,16
XU8UZP	<i>Identifiler® Direct</i>						
	1	-	17,19	-	17,18	12	8,11
		13,14	-	-	12	11,13	13,14
		15,16	30,30.2	-	X,X	12,13	20,24
		-	-	-	7,8	8	15,16
YJQ8RN	<i>PowerPlex® FUSION</i>						
	1	12,15.3	17,19	10,14	17,18	12,12	8,11
		13,14	14,15	16,19	12,12	11,13	13,14
		15,16	30,30.2	15,16	X,X	12,13	20,24
		13,14	11,14		7,8	8,8	15,16
YTVE7N	<i>PowerPlex® 16, Global Filer Express</i>						
	1	12,15.3	17,19	10,14	17,18	12	8,11
		13,14	14,15	16,19	12	11,13	13,14
		15,16	30,30.2	15,16	X	12,13	20,24
		13,14	11,14	16,23	7,8	8	15,16
YWF8HQ	<i>Identifiler® Plus</i>						
	1	17,19		17,18	12,12	8,11	
		13,14		12,12	11,13	13,14	
		15,16	30,30.2	X,X	12,13	20,24	
				7,8	8,8	15,16	

TABLE 1

WebCode	Item	D1S1656 D8S1179 D19S433 Penta D	D2S1338 D10S1248 D21S11 Penta E	D2S441 D12S391 D22S1045 SE33	D3S1358 D13S317 Amelogenin TH01	D5S818 D16S539 CSF1PO TPOX	D7S820 D18S51 FGA vWA
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## Item 2

32UBHG	COfiler® and Profiler Plus®	2			16,17	12,13	8,8	
			13,15		8,12	10,11	13,15	
				30,30.2	X,Y	10,13	20,24	
					7,8	8,8	15,19	
3ZL2QJ	Identifiler® Plus	2	19,23		16,17	12,13	8	
			13,15		8,12	10,11	13,15	
			14,16	30,30.2	X,Y	10,13	20,24	
					7,8	8	15,19	
4VM87N	Identifiler® Plus	2	19,23		16,17	12,13	8,8	
			13,15		8,12	10,11	13,15	
			14,16	30,30.2	X,Y	10,13	20,24	
					7,8	8,8	15,19	
6D3XJD	COfiler® and Profiler Plus®	2			16,17	12,13	8,8	
			13,15		8,12	10,11	13,15	
				30,30.2	X,Y	10,13	20,24	
					7,8	8,8	15,19	
ABXYBF	Globalfiler	2	15,15.3	19,23	9,10	16,17	12,13	8,8
			13,15	14,15	19,23	8,12	10,11	13,15
			14,16	30,30.2	11,15	X,Y	10,13	20,24
					16,26.2	7,8	8,8	15,19
B98RR4	Identifiler® Plus	2	19,23		16,17	12,13	8,8	
			13,15		8,12	10,11	13,15	
			14,16	30,30.2	X,Y	10,13	20,24	
					7,8	8,8	15,19	
BWWKPC	Identifiler® Direct	2	-	19,23	-	16,17	12,13	8
			13,15	-	-	8,12	10,11	13,15
			14,16	30,30.2	-	X,Y	10,13	20,24
			-	-	-	7,8	8	15,19
DJFERE	COfiler® and Profiler Plus®	2			16,17	12,13	8,8	
			13,15		8,12	10,11	13,15	
				30,30.2	X,Y	10,13	20,24	
					7,8	8,8	15,19	

TABLE 1

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

## Item 2

E3B8CD	<i>Identifiler® Plus</i>	2	19,23		16,17	12,13	8,8	
			13,15		8,12	10,11	13,15	
			14,16	30,30.2		X,Y	10,13	20,24
					7,8	8,8	15,19	
E3C6M9	<i>GoldenEye 20A</i>	2	19,23		16,17	12,13	8	
			13,15	19,23	8,12	10,11	13,15	
			14,16	30,30.2		X,Y	10,13	20,24
			12,14	7,14	7,8	8	15,19	
EJVXC	<i>PowerPlex® PP21</i>	2	15,15.3	19,23		16,17	12,13	8,8
			13,15		19,23	8,12	10,11	13,15
			14,16	30,30.2		X,Y	10,13	20,24
			12,14	7,14	7,8	8,8	15,19	
FURLHY	<i>PowerPlex® FUSION</i>	2	15,15.3	19,23	9,10	16,17	12,13	8,8
			13,15	14,15	19,23	8,12	10,11	13,15
			14,16	30,30.2	11,15	X,Y	10,13	20,24
			12,14	7,14	7,8	8,8	15,19	
G4UZ4X	<i>GlobalFiler™ Express</i>	2	15,15.3	19,23	9,10	16,17	12,13	8,8
			13,15	14,15	19,23	8,12	10,11	13,15
			14,16	30,30.2	11,15	X,Y	10,13	20,24
			NA	NA	16,26.2	7,8	8,8	15,19
G9N37C	<i>Identifiler® Plus</i>	2	19,23		16,17	12,13	8	
			13,15		8,12	10,11	13,15	
			14,16	30,30.2		X,Y	10,13	20,24
					7,8	8	15,19	
J4A4P4	<i>Identifiler® Plus</i>	2	19,23		16,17	12,13	8	
			13,15		8,12	10,11	13,15	
			14,16	30,30.2		X,Y	10,13	20,24
					7,8	8	15,19	
JAXL6Z	<i>COfiler® and Profiler Plus®</i>	2			16,17	12,13	8,8	
			13,15		8,12	10,11	13,15	
			30,30.2		X,Y	10,13	20,24	
					7,8	8,8	15,19	

TABLE 1

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

## Item 2

MDH824	Identifiler® Plus	2		19,23		16,17	12,13	8	
				13,15		8,12	10,11	13,15	
				14,16	30,30.2		X,Y	10,13	20,24
							7,8	8	15,19
N483QX	Identifiler® Plus	2		19,23		16,17	12,13	8	
				13,15		8,12	10,11	13,15	
				14,16	30,30.2		X,Y	10,13	20,24
							7,8	8	15,19
NRDNQ2	PowerPlex® PP21	2	15,15.3	19,23	N/A	16,17	12,13	8,8	
			13,15	N/A	19,23	8,12	10,11	13,15	
			14,16	30,30.2	N/A	X,Y	10,13	20,24	
			12,14	7,14	N/A	7,8	8,8	15,19	
PAXF8Z	Identifiler® Plus	2		19,23		16,17	12,13	8,8	
				13,15		8,12	10,11	13,15	
				14,15.2	30,30.2		X,Y	10,13	20,24
							7,8	8,8	15,19
QCCQJM	Identifiler® Identifiler PLUS	2	-	19,23	-	16,17	12,13	8,8	
			13,15	-	-	8,12	10,11	13,15	
			14,16	30,30.2	-	X,Y	10,13	20,24	
			-	-	-	7,8	8,8	15,19	
R39XPL	PowerPlex® FUSION, GLOBAL FILER	2	15,15.3	19,23	9,10	16,17	12,13	8	
			13,15	14,15	19,23	8,12	10,11	13,15	
			14,16	30,30.2	11, 15	X,Y	10,13	20,24	
			12,14	7,14	16,26.2	7,8	8	15,19	
TBVGJL	Identifiler® , PowerPlex®	2		19,23		16,17	12,13	8,8	
				13,15		8,12	10,11	13,15	
				14,16	30,30.2		X,Y	10,13	20,24
				12,14	7,14		7,8	8,8	15,19
VREU9W	COfiler® and Profiler Plus®	2				16,17	12,13	8,8	
				13,15		8,12	10,11	13,15	
					30,30.2		X,Y	10,13	20,24
							7,8	8,8	15,19

TABLE 1

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

## Item 2

VXKPRW	Identifiler® Plus	2	19,23		16,17	12,13	8	
			13,15		8,12	10,11	13,15	
			14,16	30,30.2		X,Y	10,13	20,24
					7,8	8	15,19	
W82UEM	COfiler® and Profiler Plus®	2			16,17	12,13	8,8	
			13,15		8,12	10,11	13,15	
				30,30.2		X,Y	10,13	20,24
					7,8	8,8	15,19	
WH2JVN	Identifiler® Identifiler Plus	2	19,23		16,17	12,13	8	
			13,15		8,12	10,11	13,15	
			14,16	30,30.2		X,Y	10,13	20,24
					7,8	8	15,19	
XD9HRN	Identifiler® Direct	2	-	19,23	-	16,17	12,13	8
			13,15	-	-	8,12	10,11	13,15
			14,16	30,30.2	-	X,Y	10,13	20,24
			-	-	-	7,8	8	15,19
XU8UZP	Identifiler® Direct	2	-	19,23	-	16,17	12,13	8
			13,15	-	-	8,12	10,11	13,15
			14,16	30,30.2	-	X,Y	10,13	20,24
			-	-	-	7,8	8	15,19
YJQ8RN	PowerPlex® FUSION	2	15,15.3	19,23	9,10	16,17	12,13	8,8
			13,15	14,15	19,23	8,12	10,11	13,15
			14,16	30,30.2	11,15	X,Y	10,13	20,24
			12,14	7,14		7,8	8,8	15,19
YTVE7N	PowerPlex® 16, Global Filer Express	2	15,15.3	19,23	9,10	16,17	12,13	8
			13,15	14,15	19,23	8,12	10,11	13,15
			14,16	30,30.2	11,15	X,Y	10,13	20,24
			12,14	7,14	16,26.2	7,8	8	15,19
YWF8HQ	Identifiler® Plus	2	19,23		16,17	12,13	8,8	
			13,15		8,12	10,11	13,15	
			14,16	30,30.2		X,Y	10,13	20,24
					7,8	8,8	15,19	

TABLE 1

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

## Item 3STR

32UBHG	<i>COfiler® and Profiler Plus®</i>						
3STR					15,16	12,13	8,10
	12,15				8,13	9,11	15,18
		29,30			X,Y	10,10	20,22
					7,9.3	8,8	17,19
3ZL2QJ	<i>Identifiler® Plus</i>						
3STR		18,23			15,16	12,13	8,10
	12,15				8,13	9,11	15,18
	14	29,30			X,Y	10	20,22
					7,9.3	8	17,19
4VM87N	<i>Identifiler® Plus</i>						
3STR		18,23			15,16	12,13	8,10
	12,15				8,13	9,11	15,18
	14,14	29,30			X,Y	10,10	20,22
					7,9.3	8,8	17,19
6D3XJD	<i>COfiler® and Profiler Plus®</i>						
3STR					15,16	12,13	8,10
	12,15				8,13	9,11	15,18
		29,30			X,Y	10,10	20,22
					7,9.3	8,8	17,19
ABXYBF	<i>Globalfiler</i>						
3STR	15,16	18,23	9,13	15,16	12,13	8,10	
	12,15	13,14	23,26	8,13	9,11	15,18	
	14,14	29,30	11,11	X,Y	10,10	20,22	
			26.2,30.2	7,9.3	8,8	17,19	
B98RR4	<i>Identifiler® Plus</i>						
3STR		18,23			15,16	12,13	8,10
	12,15				8,13	9,11	15,18
	14,14	29,30			X,Y	10,10	20,22
					7,9.3	8,8	17,19
BWWKPC	<i>Identifiler® Direct</i>						
3STR	-	18,23	-	15,16	12,13	8,10	
	12,15	-	-	8,13	9,11	15,18	
	14	29,30	-	X,Y	10	20,22	
	-	-	-	7,9.3	8	17,19	
DJFERE	<i>COfiler® and Profiler Plus®</i>						
3STR					15,16	12,13	8,10
	12,15				8,13	9,11	15,18
		29,30			X,Y	10,10	20,22
					7,9.3	8,8	17,19

TABLE 1

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

## Item 3STR

E3B8CD	<i>Identifiler® Plus</i>						
	3STR		18,23		15,16	12,13	8,10
		12,15			8,13	9,11	15,18
		14,14	29,30		X,Y	10,10	20,22
					7,9.3	8,8	17,19
E3C6M9	<i>GoldenEye 20A</i>						
	3STR		18,23		15,16	12,13	8,10
		12,15		23,26	8,13	9,11	15,18
		14	29,30		X,Y	10	20,22
		12	7,11		7,9.3	8	17,19
EJVXCC	<i>PowerPlex® PP21</i>						
	3STR	15,16	18,23		15,16	12,13	8,10
		12,15		23,26	8,13	9,11	15,18
		14,14	29,30		X,Y	10,10	20,22
		12,12	7,11		7,9.3	8,8	17,19
FURLHY	<i>PowerPlex® FUSION</i>						
	3STR	15,16	18,23	9,13	15,16	12,13	8,10
		12,15	13,14	23,26	8,13	9,11	15,18
		14,14	29,30	11,11	X,Y	10,10	20,22
		12,12	7,11		7,9.3	8,8	17,19
G4UZ4X	<i>GlobalFiler™ Express</i>						
	3STR	15,16	18,23	9,13	15,16	12,13	8,10
		12,15	13,14	23,26	8,13	9,11	15,18
		14,14	29,30	11,11	X,Y	10,10	20,22
		NA	NA	26.2,30.2	7,9.3	8,8	17,19
G9N37C	<i>Identifiler® Plus</i>						
	3STR		18,23		15,16	12,13	8,10
		12,15			8,13	9,11	15,18
		14	29,30		X,Y	10	20,22
					7,9.3	8	17,19
J4A4P4	<i>Identifiler® Plus</i>						
	3STR		18,23		15,16	12,13	8,10
		12,15			8,13	9,11	15,18
		14	29,30		X,Y	10	20,22
					7,9.3	8	17,19
JAXL6Z	<i>COfiler® and Profiler Plus®</i>						
	3STR				15,16	12,13	8,10
		12,15			8,13	9,11	15,18
			29,30		X,Y	10,10	20,22
					7,9.3	8,8	17,19

TABLE 1

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

## Item 3STR

MDH824	<i>Identifiler® Plus</i>	3STR	18,23		15,16	12,13	8,10	
			12,15		8,13	9,11	15,18	
			14	29,30		X,Y	10	20,22
						7,9.3	8	17,19
N483QX	<i>Identifiler® Plus</i>	3STR	18,23		15,16	12,13	8,10	
			12,15		8,13	9,11	15,18	
			14	29,30		X,Y	10	20,22
						7,9.3	8	17,19
NRDNQ2	<i>PowerPlex® PP21</i>	3STR	15,16	18,23	N/A	15,16	12,13	8,10
			12,15	N/A	23,26	8,13	9,11	15,18
			14,14	29,30	N/A	X,Y	10,10	20,22
			12,12	7,11	N/A	7,9.3	8,8	17,19
PAXF8Z	<i>Identifiler® Plus</i>	3STR	18,23		15,16	12,13	8,10	
			12,15		8,13	9,11	15,18	
			14,14	29,30		X,Y	10,10	20,22
						7,9.3	8,8	17,19
QCCQJM	<i>Identifiler® Identifiler PLUS</i>	3STR	-	18,23	-	15,16	12,13	8,10
			12,15	-	-	8,13	9,11	15,18
			14,14	29,30	-	X,Y	10,10	20,22
			-	-	-	7,9.3	8,8	17,19
R39XPL	<i>PowerPlex® FUSION, GLOBAL FILER</i>	3STR	15,16	18,23	9,13	15,16	12,13	8,10
			12,15	13,14	23,26	8,13	9,11	15,18
			14	29,30	11	X,Y	10	20,22
			12	7,11	26.2,30.2	7,9.3	8	17,19
TBVGJL	<i>Identifiler® , PowerPlex®</i>	3STR	18,23		15,16	12,13	8,10	
			12,15		8,13	9,11	15,18	
			14,14	29,30		X,Y	10,10	20,22
			12,12	7,11		7,9.3	8,8	17,19
VREU9W	<i>COfiler® and Profiler Plus®</i>	3STR			15,16	12,13	8,10	
					8,13	9,11	15,18	
				29,30		X,Y	10,10	20,22
						7,9.3	8,8	17,19



TABLE 1

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

## Item 3STR

VXKPRW	<i>Identifiler® Plus</i>						
	3STR		18,23		15,16	12,13	8,10
			12,15		8,13	9,11	15,18
			14	29,30	X,Y	10	20,22
					7,9.3	8	17,19
W82UEM	<i>COfiler® and Profiler Plus®</i>						
	3STR				15,16	12,13	8,10
			12,15		8,13	9,11	15,18
				29,30	X,Y	10,10	20,22
					7,9.3	8,8	17,19
WH2JVN	<i>Identifiler® Identifiler Plus</i>						
	3STR		18,23		15,16	12,13	8,10
			12,15		8,13	9,11	15,18
			14	29,30	X,Y	10	20,22
					7,9.3	8	17,19
XD9HRN	<i>Identifiler® Direct</i>						
	3STR	-	18,23	-	15,16	12,13	8,10
			12,15	-	8,13	9,11	15,18
			14	29,30	X,Y	10	20,22
			-	-	7,9.3	8	17,19
XU8UZP	<i>Identifiler® Direct</i>						
	3STR	-	18,23	-	15,16	12,13	8,10
			12,15	-	8,13	9,11	15,18
			14	29,30	X,Y	10	20,22
			-	-	7,9.3	8	17,19
YJQ8RN	<i>PowerPlex® FUSION</i>						
	3STR	15,16	18,23	9,13	15,16	12,13	8,10
			12,15	13,14	23,26	8,13	9,11
			14,14	29,30	11,11	X,Y	10,10
			12,12	7,11		7,9.3	8,8
							17,19
YTVE7N	<i>PowerPlex® 16, Global Filer Express</i>						
	3STR	15,16	18,23	9,13	15,16	12,13	8,10
			12,15	13,14	23,26	8,13	9,11
			14	29,30	11	X,Y	10
			12	7,11	26.2,30.2	7,9.3	8
							17,19
YWF8HQ	<i>Identifiler® Plus</i>						
	3STR		18,23		15,16	12,13	8,10
			12,15		8,13	9,11	15,18
			14,14	29,30	X,Y	10,10	20,22
					7,9.3	8,8	17,19

# Item 3 Paternity Index Results

TABLE 2

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

## Item 3PI

32UBHG	FBI PopStats						
	3PI				2.14	3.42	3.06
		4.55			5.02	0.002	3.91
			1.84			3.96	1.76
					1.66	1.82	5.93
3ZL2QJ	Applied Biosystems						
	3PI		4.3630		2.1949	3.2320	3.0339
		5.0556			4.1050	0.0020	3.6737
		2.9325	1.7537			4.1305	1.8083
					1.5042	1.8761	6.0168
4VM87N	FBI PopStats						
	3PI		3.70		2.14	3.42	3.06
		4.55			5.02	0.0021	3.91
		2.98	1.84			3.96	1.76
					1.66	1.82	5.93
6D3XJD	FBI PopStats						
	3PI				2.1487	3.4200	3.0600
		4.5579			5.0251	0.0021657	3.9185
			1.8491			3.9604	1.7655
					1.6694	1.8282	5.9382
ABXYBF	Laboratory specific caucasian Globalfiler database						
	3PI	2.9928	5.1603	42.2482	1.9665	2.4604	2.8284
		3.8822	0.9609	5.7963	3.4293	0.0109	3.6990
		2.6549	1.6478	6.5195	-	3.7884	1.6953
				9.1972	1.5298	1.8578	5.5240
B98RR4	NIST-STRBASE						
	3PI		4.23729		1.97628	3.54610	3.31126
		4.38596			4.42478	0.01473	3.14465
		2.71003	1.63399			4.60829	1.90114
					1.82482	1.86916	4.80769
BWWKPC	NIST-STRBASE						
	3PI	-	4.75	-	2.09	3.50	3.47
		4.81	-	-	4.14	0.004	2.93
		2.76	1.60	-	-	4.54	1.94
		-	-	-	1.72	1.90	4.81
DJFERE	FBI PopStats						
	3PI				2.1487	3.4200	3.0600
		4.5579			5.0251	0.0021657	3.9185
			1.8491			3.9604	1.7655
					1.6694	1.8282	5.9382

TABLE 2

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

## Item 3PI

E3B8CD	FBI PopStats						
	3PI		3.7073		2.1487	3.4200	3.0600
		4.5579			5.0251	0.0021657	3.9185
		2.9804	1.8491			3.9604	1.7655
					1.6694	1.8282	5.9382
E3C6M9	NIST-STRBASE						
	3PI		4.75		2.10	3.50	3.47
		4.81		7.22	4.15	0.02	2.93
		2.77	1.60			4.54	1.94
		4.30	2.96		1.73	1.91	4.81
EJVXCC	NIST-STRBASE						
	3PI		4.24		1.98	3.55	3.31
		4.39			4.42	1.96	3.14
		2.71	1.8			4.61	3.94
					2.63	1.87	4.81
FURLHY	FBI PopStats						
	3PI		3.7073		2.1598	3.4200	3.0750
		4.5579			5.0251	0.002164	3.9185
		2.9804	1.8491			3.9417	1.7655
					1.6779	1.8372	5.9382
G4UZ4X	FBI PopStats						
	3PI	3.4819	4.1220	200.0000	2.1487	3.3113	3.0600
		4.6992	1.1158	6.7295	4.9261	0.0128	3.7397
		2.8653	1.8362	6.9638	-	3.9604	1.7718
		-	-	13.4771	1.6694	1.8282	6.1200
G9N37C	FBI PopStats						
	3PI		3.7065		2.1487	3.4200	3.0600
		4.5579			5.0251	0.0028269	3.9185
		2.9806	1.8491			3.9604	1.7655
					1.6694	1.8282	5.9382
J4A4P4	Applied Biosystems						
	3PI		4.3630		2.1949	3.2320	3.0339
		5.0556			4.1050	0.0020	3.6737
		2.9325	1.7537			4.1305	1.8083
					1.5042	1.8761	6.0168
JAXL6Z	FBI PopStats						
	3PI				2.1487	3.4200	3.0600
		4.5579			5.0251	0.0021657	3.9185
			1.8491			3.9604	1.7655
					1.6694	1.8282	5.9382

TABLE 2

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

## Item 3PI

N483QX	Laboratory specific database						
	3PI	4.3630			2.1949	3.2320	3.0339
		5.0556			4.1050	0.0020	3.6737
		2.9325	1.7537			4.1305	1.8083
					1.5042	1.8761	6.0168
NRDNQ2	NIST-STRBASE, D16 mat/pat mut. rates - AABB 2008 data						
	3PI	3.3422	4.7483	N/A	2.0991	3.5039	3.4722
		4.8123	N/A	7.2150	4.1494	0.0110	2.9343
		2.7663	1.6046	N/A	N/A	4.5413	1.9410
		4.2974	2.9586	N/A	1.7271	1.9051	4.8123
PAXF8Z	NIST-STRBASE						
	3PI	4.75			2.10	3.50	3.47
		4.81			4.15		2.93
		2.77	1.60			4.54	1.94
					1.73	1.91	4.81
QCCQJM	NIST-STRBASE						
	3PI	-	4.25	-	1.97	3.55	3.31
		4.37	-	-	4.44	0	3.14
		2.70	1.63	-	-	4.61	1.89
		-	-	-	1.81	1.86	4.79
R39XPL	NIST-STRBASE						
	3PI	3.08	4.21	207.00	1.77	3.05	3.02
		3.55	1.00	10.10	5.13	0.021	2.99
		3.29	1.85	7.68	1	4.30	2.21
		5.85	2.69	8.43	1.19	2.14	6.32
VREU9W	FBI PopStats						
	3PI				2.1487	3.4200	3.0600
		4.5579			5.0251	0.0021657	3.9185
			1.8491			3.9604	1.7655
					1.6694	1.8282	5.9382
W82UEM	FBI PopStats						
	3PI				2.1487	3.4200	3.0600
		4.5579			5.0251	0.0021657	3.9185
			1.8491			3.9604	1.7655
					1.6694	1.8282	5.9382
WH2JVN	Applied Biosystems						
	3PI	4.3630			2.1949	3.2320	3.0339
		5.0556			4.1050	0.0020	3.6737
		2.9325	1.7537			4.1305	1.8083
					1.5042	1.8761	6.0168

TABLE 2

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

Item 3PI

XD9HRN	NIST-STRBASE						
	3PI	-	4.75	-	2.09	3.50	3.47
		4.81	-	-	4.14	0.004	2.93
		2.76	1.60	-	-	4.54	1.94
		-	-	-	1.72	1.90	4.81
XU8UZP	NIST-STRBASE						
	3PI		2.3741		1.0495	1.7519	3.4722
		2.4061			2.0746	0.7951	1.4671
		1.3831	0.8849			2.2706	2.0275
					1.2893	1.9051	2.4061
YJQ8RN	NIST-STRBASE						
	3PI	3.29	4.64	120.83	2.08	3.45	3.41
		4.70	1.00	6.97	4.07	1.58	2.9
		2.74	1.58	6.97		4.47	1.91
		4.23	2.92		1.70	1.89	4.70
YTVE7N	NIST-STRBASE						
	3PI	3.342	4.748	72.464	2.099	3.504	3.472
		4.812	1.011	7.215	4.149	0.00201/5.15x10 <sup>-4</sup>	2.934
		2.766	1.605	7.148	-	4.541	1.941
		4.297	2.959	12.019	1.727	1.905	4.812
YWF8HQ	[Country] Caucasian database for Profiler Plus loci						
	3PI		4.68		2.00	3.24	3.15
		4.65			3.73	0.002	3.35
		2.87	1.82			4.17	1.81
					1.56	1.95	5.64

# YSTR Results

TABLE 3

WebCode	Item	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
		DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
		DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4	YIndel	
<b>Item 2</b>									
3ZL2QJ	Yfiler® 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
4VM87N	Yfiler® 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
ABXYBF	Yfiler® 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
B98RR4	Yfiler® 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
BWWKPC	Yfiler® 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17	-	-
		-	-	-	22	-	11	-	-
E3B8CD	Yfiler® 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
E3C6M9	Yfiler® 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
FURLHY	PowerPlex® Y 23	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17	25	11
		13	23	16	22	12	11		
G4UZ4X	PowerPlex® Y 23, Yindel>GlobalFiler Ex	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17	25	11
		13	23	16	22	12	11	2	
J4A4P4	Yfiler® 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		

TABLE 3

WebCode	Item	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
		DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
		DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4	YIndel	
<b>Item 2</b>									
N483QX	Yfiler® 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
PAXF8Z	Yfiler® 2	14	12	23	28	17	14	13,14	13
		10	11	22	11	11	16	10	20
R39XPL	PowerPlex® Y 23 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17	25	11
		13	23	16	22	12	11	2	
TBVGJL	PowerPlex® Y 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17	25	11
		13	23	16	22	12	11		
WH2JVN	Yfiler® 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
XD9HRN	Yfiler® 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17	-	-
		-	-	-	22	-	11	-	
XU8UZP	Yfiler® 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17	-	-
		-	-	-	22	-	11	-	
YTVE7N	Yfiler® , GlobalFiler Express 2	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11	2	

TABLE 3

WebCode	Item	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
		DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
		DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4	YIndel	
<b>Item 3</b>									
3ZL2QJ	Yfiler® 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
4VM87N	Yfiler® 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
ABXYBF	Yfiler® 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
B98RR4	Yfiler® 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
BWWKPC	Yfiler® Applied Biosystems 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17	-	-
		-	-	-	22	-	11	-	-
E3B8CD	Yfiler® 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
E3C6M9	Yfiler® 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
FURLHY	PowerPlex® Y 23 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17	25	11
		13	23	16	22	12	11		
G4UZ4X	PowerPlex® Y 23, Yindel>GlobalFiler Ex 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17	25	11
		13	23	16	22	12	11	2	
J4A4P4	Yfiler® 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		



TABLE 3

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

## Item 3

N483QX	Yfiler® 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
PAXF8Z	Yfiler® 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
R39XPL	PowerPlex® Y 23 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17	25	11
		13	23	16	22	12	11	2	
TBVGJL	PowerPlex® Y 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17	25	11
		13	23	16	22	12	11		
WH2JVN	Yfiler® 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11		
XD9HRN	Yfiler® 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17	-	-
		-	-	-	22	-	11	-	-
XU8UZP	Yfiler® 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17	-	-
		-	-	-	22	-	11	-	-
YTVE7N	Yfiler® , GlobalFiler Express 3	14	13,14	12	28	23	10	11	13
		16	10	11	20	14	17		
					22		11	2	

# Additional DNA & PI Results

TABLE 4

Locus	WebCode	Item 1	Item 2	Item 3	Item 3 Paternity Index
D6S1043	E3C6M9	12,19	11,19	11,14	1.69
DYS391 (Global filer)	ABXYBF		10	10	-
Yindel (global filer)	ABXYBF		2	2	-

# Paternity DNA Statistics

TABLE 5

WebCode	Combined Paternity Index	Probability of Paternity	Population Database Used
32UBHG	1,020	99.90244	FBI PopStats
3ZL2QJ	9,340	99.9%	Applied Biosystems
4VM87N	11,000	99.99	FBI PopStats
6D3XJD	1,024	99.90244%	FBI PopStats
ABXYBF	$1.8 \times 10^8$	0.999999994	Laboratory specific caucasian Globalfiler database
B98RR4	56241.38441	99.9982	NIST-STRBASE
BWWKPC	17618.65	99.9943%	NIST-STRBASE
DJFERE	1,024	99.90244%	FBI PopStats
E3B8CD	11,320	99.991167	FBI PopStats
E3C6M9	13729791.14	0.999999927	NIST-STRBASE
EJVXCC	24.6 Million	>99.999%	NIST-STRBASE
FURLHY	11,480	99.991290	FBI PopStats
G4UZ4X	33,680,510,374.3411	99.99999999%	FBI PopStats
G9N37C	Approximately 14,000	Approximately 99.99%	FBI PopStats
J4A4P4	9340	99.9	Applied Biosystems
JAXL6Z	1,024	99.90244%	FBI PopStats
N483QX	9340	99.9%	Laboratory specific database
NRDNQ2	approx 14 million		NIST-STRBASE, D16 mat/pat mut. rates - AABB 2008 data
PAXF8Z	4395953.58	0.9999997725181228	NIST-STRBASE
QCCQJM	1 in 44.39	97.7%	NIST-STRBASE
R39XPL	4.816E11	99.9999999998%	NIST-STRBASE
VREU9W	1024	99.90244	FBI PopStats
W82UEM	1,024	99.90244%	FBI PopStats
WH2JVN	9.34 thousand	99.9%	Applied Biosystems
XD9HRN	17618.65	99.9943%	NIST-STRBASE
XU8UZP	2938	99.9660	NIST-STRBASE
YJQ8RN	$1.3 \times 10$ to the 12, therefore 1 in a billion quoted	99.999%	NIST-STRBASE

<b>WebCode</b>	<b>Combined Paternity Index</b>	<b>Probability of Paternity</b>	<b>Population Database Used</b>
YTVE7N	1.7x10 <sup>10</sup> (paternal mutation) 4.4x10 <sup>9</sup> (maternal mutation)	not performed	NIST-STRBASE
YWF8HQ	7834.42	99.987%	[Country] Caucasian database for Profiler Plus loci

# Paternity Conclusions

TABLE 6

WebCode	Conclusions	WebCode	Conclusions
32UBHG	Not Excluded	YTVE7N	Not Excluded
3ZL2QJ	Not Excluded	YWF8HQ	Not Excluded
4VM87N	Not Excluded		
6D3XJD	Not Excluded		
ABXYBF			
B98RR4	Not Excluded		
BWWKPC	Not Excluded		
DJFERE	Not Excluded		
E3B8CD	Not Excluded		
E3C6M9	Not Excluded		
EJVXCC	Not Excluded		
FURLHY	Not Excluded		
G4UZ4X	Not Excluded		
G9N37C	Not Excluded		
J4A4P4	Not Excluded		
JAXL6Z	Not Excluded		
MDH824	Inconclusive		
N483QX	Not Excluded		
NRDNQ2	Not Excluded		
PAXF8Z			
QCCQJM	Not Excluded		
R39XPL	Not Excluded		
TBVGJL	Not Excluded		
VREU9W	Not Excluded		
VXKPRW	Inconclusive		
W82UEM	Not Excluded		
WH2JVN	Not Excluded		
XD9HRN	Not Excluded		
XU8UZP	Not Excluded		
YJQ8RN	Not Excluded		

Response Summary		Total: 32
<b>Responses</b>	Not Excluded	28
	Excluded	0
	Inconclusive	2

## Kinship DNA Statistics

Is the claim of an avuncular relationship supported by the genetic evidence?

TABLE 7

WebCode	Database	Kinship Index	Claim Supported?
4VM87N **	FBI PopStats	1.60	Yes
B98RR4 **	NIST-STRBASE	9.96117	Yes, it is.
BWWKPC **	NIST-STRBASE	34.01	Yes.
E3B8CD **	FBI PopStats	7.122	Yes
EJVXC	NIST-STRBASE	9.96	No
FURLHY **	FBI PopStats	This kind of biological kinship test is not performed in the Laboratory	This kind of biological kinship test is not performed in the Laboratory
G4UZ4X	FBI PopStats	1.9750	It can not describe the relationship because we don't have the guideline for report.
PAXF8Z **	NIST-STRBASE	18.05245737	Yes
R39XPL **	NIST-STRBASE	12.31	GENETIC EVIDENCES SHOW A WEAK SUPPORT TO THE HYPOTHESIS OF AVUNCULAR RELATIONSHIP
XD9HRN **	NIST-STRBASE	34.0170	Yes

\*\*Represents participants that reported results through the CTS Portal. An error existed on the CTS Portal version of the data sheet where the ethnicity was not mentioned for the Avuncular relationship as it was in the paper version of the data sheet. Some participants reporting through the Portal may have used the Caucasian ethnicity mentioned in the paternity section of the data sheet rather than the African-American ethnicity mentioned in the Kinship section of the

# Additional Kinship Statistical Results

TABLE 8

WebCode	Additional Statistical Results
BWWKPC	Kinship (non-parentage): STR Locus, Formula, Allele, Given frequency, PI. D1S1656, (1+4q)/8q, q=14, 0.2573, 0.9858; D2S1338, (1+2r)/4r, r=19, 0.1389, 1.5000; D2S441, (1+4s)/8s, s=14, 0.3699, 0.8379; D3S1358, 1/2, 0.5000; D5S818, (1+2p)/4p, p=12, 0.0731, 3.9200; D7S820, (1+2p)/4p, p=9, 0.1155, 2.6646; D8S1179, 1/2, 0.5000; D10S1248, 1/2, 0.5000; D12S391, (1+4s)/8s, s=17, 0.1667, 1.2500; D13S317, (1+4q)/8q, q=11, 0.3099, 0.9033; D16S539, (p+r+4pr)/8pr, p=11, r=13, 0.3143, 0.1228, 1.9155; D18S51, 1/2, 0.5000; D19S433, (1+4p)/8p, p=13, 0.2456, 1.0089; D21S11, 1/2, 0.5000; D22S1045, (1+4s)/8s, s=16, 0.1915, 1.1527; CSF1PO, (1+2p)/4p, p=10, 0.2500, 1.5000; FGA, (1+4s)/8s, s=20, 0.0541, 2.8108; Penta D, (1+4s)/8s, s=11, 0.1798, 1.1951; Penta E, (1+4s)/8s, s=12, 0.1287, 1.4716; SE33, (1+4s)/8s, s=18, 0.1199, 1.5427; TH01, (1+2q)/4q, q=6, 0.1316, 2.4000; TPOX, (1+2q)/4q, q=8, 0.3670, 1.1813; vWA, (1+4t)/8t, t=17, 0.2354, 1.0311. Cumulative LR = 34.01701. Probability of Avuncular Relationship = 97.1442%
EJVXCC	In the absence of a probability scale in relation to avuncular relationships and given the 'probability of paternity' scale outlined in "Forensic DNA Evidence Interpretation" (Buckleton et al, 2005, CRC Press, Table 10.2, pg 351) I have concluded that the avuncular relationship is not supported by the genetic evidence.
G4UZ4X	1. Additional statistical results - Avuncular index of each locus (AI) were calculated from $AI = (PI + 1) / 2$ . Then avuncular index of all loci was calculated by combine AI of each locus. If the loci didn't share the allele, AI of that loci equal to 0.5 so, the avuncular index of this relationship equal to 1.9750. 2. Relationship conclusions - Now, in our laboratory don't have the guideline for report the uncle/nephew relationship by using the avuncular index, then we can not report that AI = 1.9750 is strongly enough or not.
XD9HRN	Kinship (non-parentage) - STR Locus, Formula, Allele, Given frequency, PI: D1S1656, (1+4q)/8q, q=14, 0.2573, 0.9858; D2S1338, (1+2r)/4r, r=19, 0.1389, 1.5000; D2S441, (1+4s)/8s, s=14, 0.3699, 0.8379; D3S1358, 1/2, 0.5000; D5S818, (1+2p)/4p, p=12, 0.0731, 3.9200; D7S820, (1+2p)/4p, p=9, 0.1155, 2.6646; D8S1179, 1/2, 0.5000; D10S1248, 1/2, 0.5000; D12S391, (1+4s)/8s, s=17, 0.1667, 1.2500; D13S317, (1+4q)/8q, q=11, 0.3099, 0.9033; D16S539, (p+r+4pr)/8pr, p=11, r=13, 0.3143, 0.1228, 1.9155; D18S51, 1/2, 0.5000; D19S433, (1+4p)/8p, p=13, 0.2456, 1.0089; D21S11, 1/2, 0.5000; D22S1045, (1+4s)/8s, s=16, 0.1915, 1.1527; CSF1PO, (1+2p)/4p, p=10, 0.2500, 1.5000; FGA (1+4s)/8s, s=20, 0.0541, 2.8108; Penta D, (1+4s)/8s, s=11, 0.1798, 1.1951; Penta E, (1+4s)/8s, s=12, 0.1287, 1.4716; SE33, (1+4s)/8s, s=18, 0.1199, 1.5427; TH01, (1+2q)/4q, q=6, 0.1316, 2.4000; TPOX, (1+2q)/4q, q=8, 0.3670, 1.1813; vWA, (1+4t)/8t, t=17, 0.2354, 1.0311. Cumulative LR = 34.01701. Probability of Avuncular Relationship = 97.1442%

# Additional Comments

TABLE 9

WebCode	Additional Comments
32UBHG	Alleged father lacks the obligate paternal genetic marker; therefore, possible apparent germline mutation in the male line (alleged father) at D16S539 loci. Our laboratory obtains the mutation frequency, or conservative estimates of mutation frequencies from the American Association of Blood Banks (AABB) 2001 annual report.
3ZL2QJ	There is a single non-matching locus at D16S539 between Item 2 (Child) and Item 3 (Alleged Father). Our laboratory does not exclude parent/offspring kinship based on a single inconsistency. In order to account for the possibility of a mutation, the Paternity Index for the locus D16S539 was calculated incorporating the Paternal mutation rate, 0.001127, divided by the Mean Power of Exclusion, 0.5396. These values for D16S539 were published in the American Association of Blood Banks Annual Reports; Paternal mutation rates 2003 and Mean Power of Exclusion 2008.
4VM87N	Statistical Analysis Used: Likelihood Ratio - Paternity Index. The alleged father, Subject Subject, cannot be excluded as the biological father of the child, Child Victim. These profiles are X times more likely to occur if Child Victim is the child of Victim Victim and Subject Subject than if Child Victim is the child of Victim Victim and a random, unrelated person from the reference populations listed. Population Database: African American - 14,000; Caucasian - 11,000; Hispanic - 33,000. Neither Child, Victim[sic], nor his paternal male relatives, can be excluded as a single contributor to the Y-STR profile obtained from this item. This match is X times more likely to occur if the above-referenced individual (or his patrilineal relative(s)) is the contributor than if the source of the evidence is a randomly selected person from the population groups listed below: Population Database: African American - 1800; Caucasian - 2100; Hispanic - 1400. Numbers are based upon the [Country] Y-STR Database and a 95% Confidence Limit.
ABXYBF	Values for apparent mutations at various loci were sourced from the AABB report 2008. Values for apparent mutations at loci by change in repeat length are also from the AABB report 2008.
BWWKPC	Item 1, Item 2 and Item 3 were extracted using FTA direct method (in situ method) and amplified using Identifiler Direct in 9700 Thermal Cycler. Item 2 and Item 3 were amplified using YFiler Kit. All electrophoresis process were carried out using Genetic Analyzer 3130xl. Reagent blank, positive control and negative control were carried out along with the analysis. The statistical formula are all derived by DNA View Statistical Software and calculated using Microsoft Excel.
E3B8CD	The alleged father cannot be excluded as the biological father of the child. These profiles are X times more likely to occur if child is the child of the known mother and the alleged father than if the child is the child of the known mother and a random, unrelated person from the reference populations listed.
EJVXCC	A mutation rate of 11% ("Genetics and Genomics of Core Short Tandem Repeat Loci Used in Human Identity Testing", Butler 2006) was used in calculating the PI at D16S539. A theta value was not used in calculating the PI. The PI was not calculated for PP21 loci (D1S1656, D6S1043, Penta E, Penta D and D12S391) as the allele frequencies for these loci were not listed in Table 1 of "Allele Frequencies for 15 Autosomal STR Loci on US Caucasian, African American and Hispanic populations (Butler et al, 2003, pg 2) from the NIST website. Consequently, I have not listed the additional PP21 alleles in the table on Page 6 of this test. The kinship index was also not calculated at D1S1656, D6S1043, Penta E, Penta D, and D12S391 as the allele frequencies for these loci were not listed in Table 2 of "Allele Frequencies for 15 Autosomal STR Loci on US Caucasian, African American and Hispanic Populations (Butler et al, 2003, pg 3) from the NIST website.
FURLHY	The statistical analysis of this test was done with the data base /CODIS/Popstats/POPDATA/FBI/STR_Identifiler and based on allele frequencies of a population group Caocastica, where a relationship Probability was obtained of 99.991290% and 11,480 Paternity Index, assuming a mutation rate of 0.0011.
G4UZ4X	At present, our laboratory not open service for uncle/nephew relationship testing.



WebCode	Additional Comments
G9N37C	An obligate allele mismatch was observed at D16S539. Since this is the only mismatch, and it is one repeat from either of the alleged father's alleles (and one repeat from one of the mother's alleles), this is likely a mutation. Mutation rates for this locus were included in the statistical calculation. The AABB Annual Report for Testing In 2008 Prepared by the Relationship Testing Program Unit (p. 27 - 28) was referenced for the mutational rates of locus D16S539. The 2015 AmpFISTR® Identifiler® Plus PCR Amplification Kit User Guide (p 125) was referenced for the probability of paternity exclusion for locus D16S539.
J4A4P4	There is a single difference between the offspring and the alleged father at D16S539. [Laboratory] does not exclude parent/offspring kinship based on a single inconsistency. The discrepant locus was used in the overall parentage index calculation using the mutation rates and mean power of exclusion data from AABB.
MDH824	A mis-match was observed at D16S539 between the child's sample (Item 2) and the alleged father's sample (Item 3). As per the [Laboratory] Forensic Biology Unit Procedures Manual, an inconclusive result was reported. [Laboratory-Specific Procedure Manual Reference] If the phenotypes of the known parent, child, and alleged parent do not match at one locus or two loci, then an inconclusive result shall be declared. The DNA data may then be sent to a subcontractor for interpretation and statistical analysis.
N483QX	Our laboratory does not exclude parent/offspring kinship based on a single inconsistency. In this scenario, there was one inconsistency at D16S539. A Parentage Index at D16S539 was calculated incorporating a mutation rate and a power of exclusion using values from the American Association of Blood Banks Annual Report. We would also add this statement to our conclusion: A mutation is likely to have occurred at the D16S539 locus and was factored into the statistical calculation.
NRDNQ2	Formula used to calculate LR at D16: numerator - $1/4(q1(A>D) + q1(B>D) + q2(A>D) + q2(C>D))$ denominator - $1/2 \text{ freq}(10)$ . AABB 2008 mutation data: paternal mutation rate D16 : 0.001127, maternal mutation rate for D16 : 0.00481, paternal mutation stepwise +1 (9>10) : 0.4545, paternal mutation stepwise -1 (11>10) : 0.4205, maternal mutation stepwise -1 (11>10) : 0.5132, maternal mutation stepwise -3 (13>10) : 0.0395. From NIST-STRbase freq (10) at D16 : 0.0568.
R39XPL	About Paternity DNA: THERE IS 4,816E11 TIMES MORE SUPPORT FOR GENETIC RESULTS IF THE TESTED MAN WAS THE TRUE BIOLOGICAL FATHER THAN IF AN UNTESTED RANDOM MAN WAS THE FATHER.
TBVGJL	The analysis has revealed that there was a one step mutation in (D16S539) locus, the sample was reanalyzed using a different PCR kit which gave the same result.
VXKPRW	The phenotypes of the son and the alleged father do not match at one locus (D16S539). According to our laboratory procedures, if the phenotypes of the known parent, child, and alleged parent do not match at one locus or two loci, then an inconclusive result shall be declared. The DNA data may then be sent to a subcontractor for interpretation and statistical analysis.
WH2JVN	There is a single non-matching locus at D16S539 between Item 2 (Child) and Item 3 (Alleged Father). Our laboratory does not exclude parent/offspring kinship based on a single inconsistency. In order to account for the possibility of a mutation, the Paternity Index for the locus D16S539 was calculated incorporating the Paternal mutation rate, 0.001127, divided by the Mean Power of Exclusion, 0.5396. These values for D16S539 were published in the American Association of Blood Banks Annual Reports; Paternal mutation rates 2003 and Mean Power of Exclusion 2008.
XD9HRN	1. Item 1, Item 2 and Item 3 were extracted using in-situ method and amplified using Identifiler Direct in the 9700 thermal cycler. 2. Item 2 and Item 3 were amplified using Yfiler Kit in the 9700 thermal cycler. 3. All electrophoresis process were carried out by Genetic Analyzer 3130xl. 4. Reagent blank, positive control and negative control were carried out along with the analysis and all gave the intended results. 5. The statistical formula are all derived by DNA View Statistical Software and calculated using Excel.
XU8UZP	The PI figures were not rounded up. Probability of Paternity was rounded up.
YJQ8RN	The second part of the test was not performed as we currently do not perform this type of paternity testing

<b>WebCode</b>	<b>Additional Comments</b>
YTVE7N	Additional comments regarding Part II [Table 5: Paternity DNA Statistics]: 1. A minimum allele frequency of 5 observations was adopted in the calculation. 2. Results of D16S539 were inconsistent with the father/mother/son relationship, but this single inconsistency was highly likely due to gene mutation and could be either paternal or maternal. 3. Paternal and maternal mutation rate were 0.00109 and 0.00028 respectively (adopted from AABB Annual Report Summary for Testing in 2003).

# Appendix: Data Sheet

Collaborative Testing Services ~ Forensic Testing Program

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## Test No. 15-5871: DNA Parentage

DATA MUST BE RECEIVED BY July 13, 2015 TO BE INCLUDED IN THE REPORT

Participant Code:

WebCode:

### Accreditation Release Statement

CTS submits external proficiency test data directly to ASCLD/LAB and ANAB. 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 and/or ANAB.  
(Accreditation Release section on the last page must be completed and submitted.)

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

**Scenario:**

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

**Items Submitted (Sample Pack DNP2):**

Item 1: Blood Sample from Known Parent (Mother)

Item 2: Blood Sample from Known Child (Son)

Item 3: Blood Sample from Alleged Father (Caucasian)

**DNA Reporting Instructions:**

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

\* Report alleles in numerical order, separated by a comma.

\* Follow your laboratory procedures for reporting homozygotes (i.e. "14,14", "14,-", "14")

\* PI = Paternity Index; KI - Kinship Index

<b>Example</b>	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
STR	15,18	12,17	10	14	12	5,13
PI	1.65	3.01	3.16	4.12	2.45	5.65

### Online Data Entry

Visit [www.cts-portal.com](http://www.cts-portal.com) to enter and/or upload your proficiency test results online. If you have any questions please do not hesitate to contact CTS.

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

Page 1 of 8

Participant Code:

WebCode:

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

<b>STR Amplification Kit Used:</b>		Please check the brands that apply for this item and record any additional kit specific naming in the blank provided (i.e. 16, Plus, Direct, 16 HS, etc.).			
<input type="checkbox"/>	Cofiler®/Profiler Plus® _____	<input type="checkbox"/>	PowerPlex® _____		
<input type="checkbox"/>	Identifiler® _____	<input type="checkbox"/>	Other _____		

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
STR	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
STR	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
ITEM 1	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
STR	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Penta D	Penta E	SE33	TH01	TPOX	vWA
STR	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**ADDITIONAL DNA RESULTS FOR ITEM 1**

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

	<b>ITEM 1</b>		<b>ITEM 1</b>
	Alleles		Alleles
_____	<input type="text"/>	_____	<input type="text"/>
_____	<input type="text"/>	_____	<input type="text"/>

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

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

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

<input type="checkbox"/> Cofiler®/Profiler Plus® _____	<input type="checkbox"/> PowerPlex® _____
<input type="checkbox"/> Identifiler® _____	<input type="checkbox"/> Other _____

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
STR	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
STR	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
ITEM 2	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
STR	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Penta D	Penta E	SE33	TH01	TPOX	vWA
STR	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

TABLE 1b: YSTR Results (YSTR results are for proficiency concordance only.)

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

<input type="checkbox"/> YFiler® _____	<input type="checkbox"/> PowerPlex® Y _____	<input type="checkbox"/> Other _____
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	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
ITEM 2	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4	Y Indel	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	

**ADDITIONAL DNA RESULTS FOR ITEM 2**

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

	<b>ITEM 2</b>	<b>ITEM 2</b>
	Alleles	Alleles
_____	<input type="text"/>	<input type="text"/>
_____	<input type="text"/>	<input type="text"/>

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

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

<input type="checkbox"/> Cofiler®/Profiler Plus® _____	<input type="checkbox"/> PowerPlex® _____
<input type="checkbox"/> Identifiler® _____	<input type="checkbox"/> Other _____

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

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

**TABLE 1b: YSTR Results (YSTR results are for proficiency concordance only.)**

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

<input type="checkbox"/> YFiler® _____	<input type="checkbox"/> PowerPlex® Y _____	<input type="checkbox"/> Other _____
--	---	--------------------------------------

STR	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
PI								
STR	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
PI								
STR	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4	Y Indel	
PI								

**ADDITIONAL DNA RESULTS FOR ITEM 3**

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

ITEM 3		ITEM 3	
Alleles	Paternity Index	Alleles	Paternity Index

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

Participant Code:

WebCode:

**Part II: PATERNITY DNA STATISTICS**

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

1. **FBI Popstats:** If FBI Popstats is already available in your laboratory then you may select that option, otherwise use the population database below.
2. **NIST-STRBASE** is a publicly available U.S. population dataset at STRBASE on the following NIST web site : <http://www.cstl.nist.gov/strbase/NISTpop.htm#Autosomal>
  - a. On the NIST web site, select the hyperlink labeled "Allele frequencies from autosomal STRs as Excel file" under the title "NIST 1036 U.S. Population Dataset".
3. If you unable to use one of the suggested population databases, report the population database used in the blank provided next to the "Other Pop. Database" option. Due to the tendency for allele frequencies to vary amongst different databases, no consensus value will be determined for this option. When reporting a population database name, please refrain from using terms that would allude to a laboratory specific name or location; general terms such as "local/state database" or "laboratory specific database" are preferred.

1) Choose a Population Database:

**FBI Popstats Pop. Database**

**NIST STRBASE Pop. Database**

**Other Pop. Database:** \_\_\_\_\_

2) Record the Combined Paternity Index value: \_\_\_\_\_

3) Record the Probability of Paternity: \_\_\_\_\_

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

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

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

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

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

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

To be completed if applicable to your laboratory.

The two DNA profiles below are presented as potential **Nephew (Profile A)/Uncle (Profile B)** relationship. Compare these profiles to answer the questions with the population database used in previous sections of the data sheet given that the ethnicity for this kinship scenerio is African-American.

	<b>D1S1656</b>	<b>D2S1338</b>	<b>D2S441</b>	<b>D3S1358</b>	<b>D5S818</b>	<b>D7S820</b>
<b>Profile A</b>	13,14	17,19	10,14	15,17	12,12	9,11
<b>Profile B</b>	11,14	19,19	11,14	16,18	12,13	9,9

	<b>D8S1179</b>	<b>D10S1248</b>	<b>D12S391</b>	<b>D13S317</b>	<b>D16S539</b>	<b>D18S51</b>
<b>Profile A</b>	10,13	16,16	17,18	11,12	11,13	12,15
<b>Profile B</b>	12,14	14,17	17,19	11,14	11,13	14,16

	<b>D19S433</b>	<b>D21S11</b>	<b>D22S1045</b>	<b>Amelogenin</b>	<b>CSF1PO</b>	<b>FGA</b>
<b>Profile A</b>	13,15.2	29,31.2	11,16	X,Y	10,12	20,24
<b>Profile B</b>	13,14	28,30	16,17	X,Y	10,10	20,22

	<b>Penta D</b>	<b>Penta E</b>	<b>SE33</b>	<b>TH01</b>	<b>TPOX</b>	<b>vWA</b>
<b>Profile A</b>	11,12	9,12	18,28.2	6,9.3	8,10	16,17
<b>Profile B</b>	5,11	8,12	18,19	6,6	8,8	17,18

1) Evaluate profiles A and B and record the kinship index. \_\_\_\_\_

2) Is the claim of an avuncular relationship supported by the genetic evidence?

\_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Participant Code:

WebCode:

**Part IV: ADDITIONAL COMMENTS**

Comments regarding any part of this Parentage Test.

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

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**Return Instructions:** Data must be received via online data entry, fax (please include a cover sheet), or mail by *July 13, 2015* to be included in the report.

**QUESTIONS?**

TEL: +1-571-434-1925 (8 am - 4:30 pm EST)  
 EMAIL: [forensics@cts-interlab.com](mailto:forensics@cts-interlab.com)  
[www.ctsforensics.com](http://www.ctsforensics.com)

ONLINE DATA ENTRY: [www.cts-portal.com](http://www.cts-portal.com)

FAX: +1-571-434-1937  
 or Toll-Free: 1-866-FAX-2CTS (329-2287)

MAIL: Collaborative Testing Services, Inc.  
 P.O. Box 650820  
 Sterling, VA 20165-0820 USA

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

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## Collaborative Testing Services - Forensic Testing Program

**RELEASE OF DATA TO ACCREDITATION BODIES**

The following Accreditation Releases will apply only to:

Participant Code:

WebCode:

for Test No. **15-5871: DNA Parentage**

This release page must be completed and received by **July 13, 2015** to have this participant's submitted data included in the reports forwarded to the respective Accreditation Bodies.

**ASCLD/LAB RELEASE**

If your lab has been accredited by ASCLD/LAB and you are submitting this data as part of their external proficiency test requirements, have the laboratory's designated individual complete the following.

**The information below must be completed in its entirety for the results to be submitted to ASCLD/LAB.**

ASCLD/LAB Legacy Certificate \_\_\_\_\_ ASCLD/LAB International Certificate No. \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Laboratory Name \_\_\_\_\_

Location (City/State) \_\_\_\_\_

**ANAB RELEASE**

If your laboratory maintains its accreditation through ANAB, please complete the following form in its entirety to have your results forwarded.

ANAB Certificate No. \_\_\_\_\_

Signature and Title \_\_\_\_\_ Date \_\_\_\_\_

Laboratory Name \_\_\_\_\_

Location (City/State) \_\_\_\_\_

**Accreditation Release****Return Instructions**

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

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

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

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