Collaborative Testing Services, Inc
FORENSIC TESTING PROGRAM

DNA Interpretation Test No. 15-588
Summary Report

This proficiency test was sent to 27 participants. Each participant received a sample pack consisting of a DVD containing electropherograms which they were requested to evaluate using their existing protocols. Data were returned from 19 participants (70% response rate) and are compiled into the following tables:

	Page
Manufacturer's Information	2
Summary Comments	4
Table 1: Interpretation Guidelines	5
Table 2: STR & Amelogenin Results	6
Table 3: YSTR Results	20
Table 4: DNA Analysis	26
Table 5: Statistical Analysis of Item 3	27
Table 6: Statistical Analysis of Item 4	28
Table 7: Databases Used	31
Table 8: Amplification Kit Survey	32
Table 9: Additional Comments	33
Appendix: Data Sheet	34

Manufacturer's Information

Each sample pack contained digital images and fsa files consisting of electropherograms from DNA profiles of two known samples (Items 1 & 2) and two questioned samples (Items 3 & 4). Participants were requested to evaluate the electropherograms and interpret the data using their existing protocols.

SAMPLE PREPARATION: Item 1 was created using blood collected from a female donor, Item 2 was created using blood collected from a male donor and Item 3 was created using blood collected from a different male donor. The Item 4 mixture was created by combining three parts of blood from the Item 1 female donor and one part of blood from another female donor.

SAMPLE SET ASSEMBLY: Once sample preparation and verification was completed, each DVD was checked to ensure all images were accessible.

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

Amelogenin and STR Results

Results compiled by predistribution laboratories and a consensus of participants.

Item	D2S1338 D16S539 FGA	D3S1358 D18S51 PentaD	D5S818 D19S433 PentaE	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
1	20,24 11,13 21,22	14,16 14,17 *	11,11 12,12 *	10,10 28,30 7,9.3	8,13 X,X 8,11	8,11 11,12 17,17
2	21,22 9,10 24,26	14,16 15,15 *	8,11 13,15.2 *	8,11 30,31 7,10	13,13 X,Y 8,11	12,12 10,11 13,15
3	21,22 12,13 22,23	16,17 15,17 *	12,14 13,14 *	10,11 28,30.2 6,7	13,15 X,Y 6,11	11,12 10,10 15,17
4	19,20,24 11,13 21,22,23	14,16 10,14,17 *	11,12 12,14 *	10,11 28,30,30.2 7,9,9.3	8,10,13 X,X 8,11,12	8,10,11 11,12 17,18

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

YSTR Results

Results compiled from predistribution laboratories and a consensus of participants.

Item	DYS19 DYS437 DYS549	DYS385 DYS438 DYS570	DYS389-I DYS439 DYS576	DYS389-II DYS448 DYS635	DYS390 DYS456 DYS643	DYS391 DYS458 Y GATA H4	DYS392 DYS481	DYS393 DYS533
2	15 14 11	16,17 11 17	13 11 15	31 21 22	21 15 14	10 17 12	11 28	13 11
3	15 14 12	16,18 11 17	15 11 17	33 21 21	21 15 13	10 15 11	11 21	14 11

Summary Comments

This test was designed to allow participants to assess their proficiency in evaluating electropherogram(s) and interpreting data. Each participant received electropherograms (in both FSA and PDF formats) of four items including the following kits: Identifiler Plus, Powerplex 16HS, Yfiler, Powerplex Y23.

Of the 19 participants that reported results, 18 excluded the victim (Item 1) and 17 excluded the suspect (Item 2) as a possible contributor to the Item 3 profile. One participant did not report conclusions as to the contributors of Item 3 and one participant included the suspect (Item 2) as a possible contributor to the Item 3 profile. All participants included the victim (Item 1) and excluded the suspect (Item 2) as possible contributors to the Item 4 mixture profile.

One participant reported allelic results that differed from the consensus for Item 2 and 3. This participant reported inconsistent alleles at some loci and an additional allele at one locus. The majority of participants reported results for the Item 4 mixture without separating the profiles into major and minor fractions. All participants reported consistent YSTR allelic results. Of the 18 participants reporting the number of contributors to Item 3, 17 reported that there was one contributor and one reported that there were two contributors. Of the 18 participants reporting the number of contributors to Item 4 mixture, 17 reported two or at least two and one reported three.

Interpretation Guidelines

TABLE 1

WebCode	Analytical Threshold	Peak Height Ratio	Stochastic Threshold
6KCADC	50 rfu except for Ys: analytical =60 rfu for blue dye and for all others 130.	60%	(Peak Amplitude): 150 rfu
8WDW8D	50	60	150
9NY6HE	50 RFU	60%	150RFU
AT84C6	85 RFU	30%	300 RFU
BDCZA7	30 RFUS	75%	
EZD4Z4	50 RFU	60%	150 RFU
GUWH42	50	60	150
HUQUT2	80 rfu	60 %	200 rfu
J49VN2	50 RFU	60%	150 RFU
JR2M96	ID+ 75 rfu, PPY23 60 rfu	ID+ 40% PPY23 none	ID+ 150 rfu, PPY23 200 rfu (DYS385)
LYRATZ	50 rfu	60%	150 rfu
PAJZ2W	100 RFU	50%	425 RFU
PNKCXV	30 rfu (over 2X PCRs)	50%	200 rfu
QNEGQU	200 rfu	50%	500 rfu
TDCTXN	35 RFU	30% below 700, 60% at 700 and above.	150 RFU
UA46NQ	50 rfu	60%	150 rfu
VBUTJR	50 rfu	60%	150 rfu
VMBFTT	Identifiler Plus Ht 75/Hm 150 rfu - Powerplex Y-23 60 rfu	Identifiler plus 40% - Powerplex Y-23 N/A	ID-Plus Ht 75/Hm 150 rfu - PP Y-23 60 rfu (DYS385 200 rfu)

STR & Amelogenin Results

TABLE 2

WebCode	Item	D2S1338 D16S539 FGA	D3S1358 D18S51 Penta D	D5S818 D19S433 Penta E	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
				Item 1			
28X3NF	Identifiler® Plus, PowerPlex®16				FSA Format, PDF Format		
	1	20,24	14,16	11	10	8,13	8,11
		11,13	14,17	12	28,30	X	11,12
		21,22	13	11,13	7,9.3	8,11	17
6KCADC	Identifiler® Plus				PDF Format		
	1	20,24	14,16	11,11	10,10	8,13	8,11
		11,13	14,17	12,12	28,30	X,X	11,12
		21,22			7,9.3	8,11	17,17
8WDW8D	Identifiler® Plus				PDF Format		
	1	20,24	14,16	11	10	8,13	8,11
		11,13	14,17	12	28,30	X,X	11,12
		21,22	-	-	7,9.3	8,11	17
9NY6HE	Identifiler® Plus				PDF Format		
	1	20,24	14,16	11,11	10,10	8,13	8,11
		11,13	14,17	12,12	28,30	X,X	11,12
		21,22	-	-	7,9.3	8,11	17,17
AT84C6	Identifiler® Plus				FSA Format		
	1	20,24	14,16	11	10	8,13	8,11
		11,13	14,17	12	28,30	X	11,12
		21,22			7,9.3	8,11	17
BDCZA7							
	1	20,24	14,16	11	10	8,13	8,11
		11,13	14,17	12	28,30	X	11,12
		21,22	13	11,13	7,9.3	8,11	17
EZD4Z4	Identifiler® Plus, PowerPlex®16				PDF Format		
	1	20,24	14,16	11	10	8,13	8,11
		11,13	14,17	12	28,30	X	11,12
		21,22	13	11,13	7,9.3	8,11	17
GUWH42	Identifiler® Plus, PowerPlex®16				FSA Format, PDF Format		
	1	20,24	14,16	11	10	8,13	8,11
		11,13	14,17	12	28,30	X	11,12
		21,22	13	11,13	7,9.3	8,11	17

TABLE 2

WebCode	Item	D2S1338 D16S539 FGA	D3S1358 D18S51 Penta D	D5S818 D19S433 Penta E	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
				Item 1			
HUQUT2	Identifiler® Plus, PowerPlex®16				FSA Format, PDF Format		
	1	20,24	14,16	11,11	10,10	8,13	8,11
		11,13	14,17	12,12	28,30	X,X	11,12
		21,22	13,13	11,13	7,9.3	8,11	17,17
J49VN2	PowerPlex®16				FSA Format		
	1		14,16	11	10	8,13	8,11
		11,13	14,17		28,30	X	11,12
		21,22	13	11,13	7,9.3	8,11	17
JR2M96	Identifiler® Plus				PDF Format		
	1	20,24	14,16	11,11	10,10	8,13	8,11
		11,13	14,17	12,12	28,30	X,X	11,12
		21,22	N/A	N/A	7,9.3	8,11	17,17
LYRATZ	Identifiler® Plus						
	1	20,24	14,16	11	10	8,13	
		11,13	14,17	12	28,30	X,X	
		21,22			7,9.3	8,11	17
PAJZ2W	PowerPlex®16				PDF Format		
	1		14,16	11	10	8,13	8,11
		11,13	14,17		28,30	X,X	11,12
		21,22	13	11,13	7,9.3	8,11	17
PNKCXV	Identifiler® Plus				PDF Format		
	1	20,24	14,16	11,11	10,10	8,13	8,11
		11,13	14,17	12,12	28,30	X,X	11,12
		21,22			7,9.3	8,11	17,17
QNEGQU	Identifiler® Plus				PDF Format		
	1	20,24	14,16	11,11	10,10	8,13	8,11
		11,13	14,17	12,12	28,30	X,X	11,12
		21,22			7,9.3	8,11	17,17
TDCTXN	Identifiler® Plus				FSA Format		
	1	20,24	14,16	11,11	10,10	8,13	8,11
		11,13	14,17	12,12	28,30	X,X	11,12
		21,22			7,9.3	8,11	17,17
UA46NQ	Identifiler® Plus				PDF Format		
	1	20,24	14,16	11	10	8,13	8,11
		11,13	14,17	12	28,30	X	11,12
		21,22			7,9.3	8,11	17

TABLE 2

WebCode	Item	D2S1338 D16S539 FGA	D3S1358 D18S51 Penta D	D5S818 D19S433 Penta E	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
				Item 1			
VBUTJR	Identifiler® Plus, PowerPlex®16				PDF Format		
	1	20,24	14,16	11	10	8,13	8,11
		11,13	14,17	12	28,30	X	11,12
		21,22	13	11,13	7,9.3	8,11	17
VMBFTT	Identifiler® Plus				PDF Format		
	1	20,24	14,16	11,11	10,10	8,13	8,11
		11,13	14,17	12,12	28,30	X,X	11,12
		21,22			7,9.3	8,11	17,17

TABLE 2

WebCode	Item	D2S1338 D16S539 FGA	D3S1358 D18S51 Penta D	D5S818 D19S433 Penta E	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
				Item 2			
28X3NF	Identifiler® Plus, PowerPlex®16				FSA Format, PDF Format		
	2	21,22	14,16	8,11	8,11	13	12
		9,10	15	13,15.2	30,31	X,Y	10,11
		24,26	8	7,8	7,10	8,11	13,15
6KCADC	Identifiler® Plus				PDF Format		
	2	21,22	14,16	8,11	8,11	13,13	12,12
		9,10	15,15	13,15.2	30,31	X,Y	10,11
		24,26			7,10	8,11	13,15
8WDW8D	Identifiler® Plus				PDF Format		
	2	21,22	14,16	8,11	8,11	13	12
		9,10	15	13,15.2	30,31	X,Y	10,11
		24,26	-	-	7,10	8,11	13,15
9NY6HE	Identifiler® Plus				PDF Format		
	2	21,22	14,16	8,11	8,11	13,13	12,12
		9,10	15,15	13,15.2	30,31	X,Y	10,11
		24,26	-	-	7,10	8,11	13,15
AT84C6	Identifiler® Plus				FSA Format		
	2	21,22	14,16	8,11	8,11	13	12
		9,10	15	13,15.2	30,31	X,Y	10,11
		24,26			7,10	8,11	13,15
BDCZA7							
	2	21,22	14,16	8,11	8,11	13	12
		9,10	15	13,15.2	30,31	X,Y	10,11
		24,26	8	7,8	7,10	8,11	13,15
EZD4Z4	Identifiler® Plus, PowerPlex®16				PDF Format		
	2	21,22	14,16	8,11	8,11	13	12
		9,10	15	13,15.2	30,31	X,Y	10,11
		24,26	8	7,8	7,10	8,11	13,15
GUWH42	Identifiler® Plus, PowerPlex®16				FSA Format, PDF Format		
	2	21,22	14,16	8,11	8,11	13	12
		9,10	15	13,15.2	30,31	X,Y	10,11
		24,26	8	7,8	7,10	8,11	13,15
HUQUT2	Identifiler® Plus, PowerPlex®16				PDF Format		
	2	21,22	14,16	8,11	8,11	13,13	12,12
		9,10	15,15	13,15.2	30,31	X,Y	10,11
		24,26	8,8	7,8	7,10	8,11	13,15

TABLE 2

WebCode	Item	D2S1338 D16S539 FGA	D3S1358 D18S51 Penta D	D5S818 D19S433 Penta E	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
			Item 2				
J49VN2	PowerPlex®16				FSA Format		
	2		14,16	8,11	8,11	13	12
		9,10	15		30,31	X,Y	10,11
		24,26	8	7,8	7,10	8,11	13,15
JR2M96	Identifiler® Plus				PDF Format		
	2	21,22	14,16	8,11	8,11	13,13	12,12
		9,10	15,15	13,15.2	30,31	X,Y	10,11
		24,26	N/A	N/A	7,10	8,11	13,15
LYRATZ	Identifiler® Plus						
	2	21,22	14,16	8,11	8,11	13	12
		9,10	15	13,15.2	30,31	X,Y	10,11
		24,26			7,10	8,11	13,15
PAJZ2W	PowerPlex®16				PDF Format		
	2		14,16	8,11	8,11	13	12
		9,10	15		30,31	X,Y	10,11
		24,26	8	7,8	7,10	8,11	13,15
PNKCXV	Identifiler® Plus				PDF Format		
	2	21,22	14,16	8,11	8,11	13,13	12,12
		9,10	15,15	13,15.2	30,31	X,Y	10,11
		24,26			7,10	8,11	13,15
QNEGQU	Identifiler® Plus				PDF Format		
	2	21,22	14,16	8,11	8,11	13,13	12,12
		9,10	15,15	13,15.2	30,31	X,Y	10,11
		24,26			7,10	8,11	13,15
TDCTXN	Identifiler® Plus				FSA Format		
	2	21,22	14,16	8,11	8,11	13,13	12,12
		9,10	15,15	13,15.2	30,31	X,Y	10,11
		24,26			7,10	8,11	13,15
UA46NQ	Identifiler® Plus				PDF Format		
	2	21,22	14,16	8,11	8,11	13	12
		9,10	15	13,15.2	30,31	X,Y	10,11
		24,26			7,10	8,11	13,15
VBUTJR	Identifiler® Plus, PowerPlex®16				PDF Format		
	2	21,22	14,16	8,11	8,11	13	12
		9,10	15	13,15.2	30,31	X,Y	10,11
		24,26	8	7,8	8,11	8,11	13,15

TABLE 2

WebCode	Item	D2S1338 D16S539 FGA	D3S1358 D18S51 Penta D	D5S818 D19S433 Penta E	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
Item 2							
VMBFTT	Identifiler® Plus				PDF Format		
	2	21,22	14,16	8,11	8,11	13,13	12,12
		9,10	15,15	13,15.2	30,31	X,Y	10,11
		24,26			7,10	8,11	13,15

TABLE 2

WebCode	Item	D2S1338 D16S539 FGA	D3S1358 D18S51 Penta D	D5S818 D19S433 Penta E	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
				Item 3			
28X3NF	Identifiler® Plus, PowerPlex®16				FSA Format, PDF Format		
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10
		22,23	9,12	5,11	6,7	6,11	15,17
6KCADC	Identifiler® Plus				PDF Format		
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10,10
		22,23			6,7	6,11	15,17
8WDW8D	Identifiler® Plus				PDF Format		
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10
		22,23	-	-	6,7	6,11	15,17
9NY6HE	Identifiler® Plus				PDF Format		
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10,10
		22,23	-	-	6,7	6,11	15,17
AT84C6	Identifiler® Plus				FSA Format		
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10
		22,23			6,7	6,11	15,17
BDCZA7							
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10
		22,23	9,12	5,11	6,7	6,11	15,17
EZD4Z4	Identifiler® Plus, PowerPlex®16				PDF Format		
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10
		22,23	9,12	5,11	6,7	6,11	15,17
GUWH42	Identifiler® Plus, PowerPlex®16				FSA Format, PDF Format		
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10
		22,23	9,12	5,11	6,7	6,11	15,17
HUQUT2	Identifiler® Plus				PDF Format		
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10
		22,23			6,7	6,11	15,17

TABLE 2

WebCode	Item	D2S1338 D16S539 FGA	D3S1358 D18S51 Penta D	D5S818 D19S433 Penta E	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
			Item 3				
J49VN2	PowerPlex®16				FSA Format		
	3		16,17	12,14	10,11	13,15	11,12
		12,13	15,17		28,30.2	X,Y	10
		22,23	9,12	5,11	6,7	6,11	15,17
JR2M96	Identifiler® Plus				PDF Format		
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10,10
		22,23	N/A	N/A	6,7	6,11	15,17
LYRATZ	Identifiler® Plus						
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10
		22,23			6,7	6,11	15,17
PAJZ2W	PowerPlex®16				PDF Format		
	3		16,17	12,14	10,11	13,15	11,12
		12,13	15,17		28,30.2	X,Y	10
		22,23	9,12	5,11	6,7	6,11	15,17
PNKCXV	Identifiler® Plus				PDF Format		
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10,10
		22,23			6,7	6,11	15,17
QNEGQU	Identifiler® Plus				PDF Format		
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10,10
		22,23			6,7	6,11	15,17
TDCTXN	Identifiler® Plus				FSA Format		
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10,10
		22,23			6,7	6,11	15,17
UA46NQ	Identifiler® Plus				PDF Format		
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10
		22,23			6,7	6,11	15,17
VMBFTT	Identifiler® Plus				PDF Format		
	3	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10,10
		22,23			6,7	6,11	15,17

TABLE 2

WebCode	Item	D2S1338 D16S539 FGA	D3S1358 D18S51 Penta D	D5S818 D19S433 Penta E	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
Item 3major							
VBUTJR	Identifiler® Plus, PowerPlex®16				PDF Format		
	3major	21,22	16,17	12,14	10,11	13,15	11,12
		12,13	15,17	13,14	28,30.2	X,Y	10
		22,23	9,12	5,11	6,7	6,11	15,17

TABLE 2

WebCode	Item	D2S1338 D16S539 FGA	D3S1358 D18S51 Penta D	D5S818 D19S433 Penta E	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
				Item 3minor			
VBUTJR	Identifiler® Plus, PowerPlex®16				PDF Format		
	3minor			13	10,11 28,30.2	13,15	10

TABLE 2

WebCode	Item	D2S1338 D16S539 FGA	D3S1358 D18S51 Penta D	D5S818 D19S433 Penta E	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
				Item 4			
28X3NF	Identifiler® Plus, PowerPlex®16				FSA Format, PDF Format		
	4	19,20,24	14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X	11,12
		21,22,23	9,13	11,12,13	7,9,9.3	8,11,12	17,18
6KCADC	Identifiler® Plus				PDF Format		
	4	19,20,24	14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X,X	11,12
		21,22,23			7,9,9.3	8,11,12	17,18
8WDW8D	Identifiler® Plus				PDF Format		
	4	19,20,24	14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X,X	11,12
		21,22,23	-	-	7,9,9.3	8,11,12	17,18
9NY6HE	Identifiler® Plus				PDF Format		
	4	19,20,24	14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X	11,12
		21,22,23	-	-	7,9,9.3	8,11,12	17,18
AT84C6	Identifiler® Plus				FSA Format		
	4	19,20,24		11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X	11,12
		21,22,23			7,9,9.3	8,11,12	17,18
BDCZA7							
	4	19,20,24	14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X	11,12
		21,22,23	9,13	11,12,13	7,9,9.3	8,11,12	17,18
EZD4Z4	Identifiler® Plus, PowerPlex®16				PDF Format		
	4	19,20,24	14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X	11,12
		21,22,23	9,13	11,12,13	7,9,9.3	8,11,12	17,18
GUWH42	Identifiler® Plus, PowerPlex®16				FSA Format, PDF Format		
	4	19,20,24	14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X	11,12
		21,22,23	9,13	11,12,13	7,9,9.3	8,11,12	17,18
HUQUT2	Identifiler® Plus				FSA Format, PDF Format		
	4	19,20,24	14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X	11,12
		21,22,23			7,9,9.3	8,11,12	17,18

TABLE 2

WebCode	Item	D2S1338 D16S539 FGA	D3S1358 D18S51 Penta D	D5S818 D19S433 Penta E	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
				Item 4			
J49VN2	PowerPlex®16				FSA Format		
	4		14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17		28,30,30.2	X	11,12
		21,22,23	9,13	11,12,13	7,9,9.3	8,11,12	17,18
JR2M96	Identifiler® Plus				PDF Format		
	4	19,20,24	14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X,X	11,12
		21,22,23	N/A	N/A	7,9,9.3	8,11,12	17,18
LYRATZ	Identifiler® Plus						
	4	19,[20],24	14,[16]	11,[12]	10,[11]	[8],10,13	[8],10,[11]
		11,13	[10],[14],17	12,14	[28],30,30.2	X,X	11,[12]
		21,[22],23			[7],9,[9.3]	8,[11],[12]	17,[18]
PAJZ2W	PowerPlex®16				PDF Format		
	4		14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17		28,30,30.2	X	11,12
		21,22,23	9,13	11,12,13	7,9,9.3	8,11,12	17,18
PNKCXV	Identifiler® Plus				PDF Format		
	4	19,20,24	14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X,X	11,12
		21,22,23			7,9,9.3	8,11,12	17,18
QNEGQU	Identifiler® Plus				PDF Format		
	4	19,20,24	14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X,X	11,12
		21,22,23			7,9,9.3	8,11,12	17,18
TDCTXN	Identifiler® Plus				FSA Format		
	4	19,20,24	14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X,X	11,12
		21,22,23			7,9,9.3	8,11,12	17,18
UA46NQ	Identifiler® Plus				PDF Format		
	4	19,20,24	14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X	11,12
		21,22,23			7,9,9.3	8,11,12	17,18
VMBFTT	Identifiler® Plus				PDF Format		
	4	19,20,24	14,16	11,12	10,11	8,10,13	8,10,11
		11,13	10,14,17	12,14	28,30,30.2	X,X	11,12
		21,22,23			7,9,9.3	8,11,12	17,18

TABLE 2

WebCode	Item	D2S1338 D16S539 FGA	D3S1358 D18S51 Penta D	D5S818 D19S433 Penta E	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
				Item 4major			
8WDW8D	Identifiler® Plus						
	4major	19,24	14	11,12	10,11	10,13	10
		11,13	10,17	14	30,30.2	X,X	11
		21,23	-	-	9	8,12	17,18
9NY6HE	Identifiler® Plus						
	4major	19,24	14,14	11,12	10,11	10,13	10,10
		11,13	10,17	12,14	30,30.2	X,X	11,11
		21,23	-	-	9,9	8,12	17,18
AT84C6	Identifiler® Plus						
	4major		14				
HUQUT2	Identifiler® Plus						
	4major	19,24	14,14	11,12	10,11	10,13	10,10
		11,13	10,17	14,14	30,30.2	X,X	11,11
		21,23			9,9	8,12	17,18
VBUTJR	Identifiler® Plus, PowerPlex®16				PDF Format		
	4major	19,20,24	14,16	11,12	10	13	8,10,11
		11,13	10,14,17	12,14	30	X	11,12
		21,22	9,13	11,12	7,9,9.3	8,11,12	17,18

TABLE 2

WebCode	Item	D2S1338 D16S539 FGA	D3S1358 D18S51 Penta D	D5S818 D19S433 Penta E	D7S820 D21S11 TH01	D8S1179 Amelogenin TPOX	D13S317 CSF1PO vWA
				Item 4minor			
8WDW8D	Identifiler® Plus						
	4minor	20,24	14,16	11	10	8,13	8,11
		11,13	14,17	12	28,30	X,X	11,12
		21,22	-	-	7,9.3	8,11	17
9NY6HE	Identifiler® Plus						
	4minor	20,24	14,16	11,11	10,10	8,13	8,11
		11,13	14,17	12,14	28,30	X,X	11,12
		21,22	-	-	7,9.3	8,11	17,17
AT84C6	Identifiler® Plus						
	4minor		16				
HUQUT2	Identifiler® Plus						
	4minor	20,24	14,16	11,11	10,10	8,13	8,11
		11,13	14,17	12,12	28,30	X,X	11,12
		21,22			7,9.3	8,11	17,17
VBUTJR	Identifiler® Plus, PowerPlex®16				PDF Format		
	4minor			12	11	8,10	8,11
			14		28,30.2		12
		22,23		13	9.3	11,12	18

See Additional Comments (Table 9) for laboratory specific notations.

YSTR Results

TABLE 3

WebCode	Item	DYS19 DYS437 DYS549	DYS385 DYS438 DYS570	DYS389-I DYS439 DYS576	DYS389-II DYS448 DYS635	DYS390 DYS456 DYS643	DYS391 DYS458 Y GATA H4	DYS392 DYS481	DYS393 DYS533
					Item 2				
28X3NF	YFiler®, PowerPlex®Y23								
	2	15	16,17	13	31	21	10	11	13
		14	11	11	21	15	17	28	11
		11	17	15	22	14	12		
6KCADC	PowerPlex®Y23								
	2	15	16,17	13	31	21	10	11	13
		14	11	11	21	15	17	28	11
		11	17	15	22	14	12		
8WDW8D	YFiler®								
	2	15	16,17	13	31	21	10	11	13
		14	11	11	21	15	17	-	-
		-	-	-	22	-	12		
BDCZA7									
	2	15	16,17	13	31	21	10	11	13
		14	11	11	21	15	17	28	11
		11	17	15	22	14	12		
EZD4Z4	YFiler®, PowerPlex®Y23								
	2	15	16,17	13	31	21	10	11	13
		14	11	11	21	15	17	28	11
		11	17	15	22	14	12		
GUWH42	YFiler®, PowerPlex®Y23					FSA Format, PDF Format			
	2	15	16,17	13	31	21	10	11	13
		14	11	11	21	15	17	28	11
		11	17	15	22	14	12		
J49VN2	PowerPlex®Y23					FSA Format			
	2	15	16,17	13	31	21	10	11	13
		14	11	11	21	15	17	28	11
		11	17	15	22	14	12		
JR2M96	PowerPlex®Y23					PDF Format			
	2	15	16,17	13	31	21	10	11	13
		14	11	11	21	15	17	28	11
		11	17	15	22	14	12		
PNKCXV	YFiler®					PDF Format			
	2	15	16,17	13	31	21	10	11	13
		14	11	11	21	15	17		
					22		12		

TABLE 3

WebCode	Item	DYS19 DYS437 DYS549	DYS385 DYS438 DYS570	DYS389-I DYS439 DYS576	DYS389-II DYS448 DYS635	DYS390 DYS456 DYS643	DYS391 DYS458 Y GATA H4	DYS392 DYS481	DYS393 DYS533
					Item 2				
QNEGQU	YFiler®								
	2	15	16,17	13	31	21	10	11	13
		14	11	11	21	15	17		
					22		12		
UA46NQ	PowerPlex®Y23								
	2	15	16,17	13	31	21	10	11	13
		14	11	11	21	15	17	28	11
		11	17	15	22	14	12		
VBUTJR	YFiler®, PowerPlex®Y23								
	2	15	16,17	13	31	21	10	11	13
		14	11	11	21	15	17	28	11
		11	17	15	22	14	12		
VMBFTT	PowerPlex®Y23					PDF Format			
	2	15	16,17	13	31	21	10	11	13
		14	11	11	21	15	17	28	11
		11	17	15	22	14	12		

TABLE 3

WebCode	Item	DYS19 DYS437 DYS549	DYS385 DYS438 DYS570	DYS389-I DYS439 DYS576	DYS389-II DYS448 DYS635	DYS390 DYS456 DYS643	DYS391 DYS458 Y GATA H4	DYS392 DYS481	DYS393 DYS533
					Item 3				
28X3NF	YFiler®, PowerPlex®Y23								
	3	15	16,18	15	33	21	10	11	14
		14	11	11	21	15	15	21	11
		12	17	17	21	13	11		
6KCADC	PowerPlex®Y23								
	3	15	16,18	15	33	21	10	11	14
		14	11	11	21	15	15	21	11
		12	17	17	21	13	11		
8WDW8D	YFiler®								
	3	15	16,18	15	33	21	10	11	14
		14	11	11	21	15	15	-	-
		-	-	-	21	-	11		
BDCZA7									
	3	15	16,18	15	33	21	10	11	14
		14	11	11	21	15	15	21	11
		12	17	17	21	13	11		
EZD4Z4	YFiler®, PowerPlex®Y23								
	3	15	16,18	15	33	21	10	11	14
		14	11	11	21	15	15	21	11
		12	17	17	21	13	11		
GUWH42	YFiler®, PowerPlex®Y23								
	3	15	16,18	15	33	21	10	11	14
		14	11	11	21	15	15	21	11
		12	17	17	21	13	11		
J49VN2	PowerPlex®Y23					FSA Format			
	3	15	16,18	15	33	21	10	11	14
		14	11	11	21	15	15	21	11
		12	17	17	21	13	11		
JR2M96	PowerPlex®Y23					PDF Format			
	3	15	16,18	15	33	21	10	11	14
		14	11	11	21	15	15	21	11
		12	17	17	21	13	11		
PNKCXV	YFiler®					PDF Format			
	3	15	16,18	15	33	21	10	11	14
		14	11	11	21	15	15		
					21		11		

TABLE 3

WebCode	Item	DYS19 DYS437 DYS549	DYS385 DYS438 DYS570	DYS389-I DYS439 DYS576	DYS389-II DYS448 DYS635	DYS390 DYS456 DYS643	DYS391 DYS458 Y GATA H4	DYS392 DYS481	DYS393 DYS533
					Item 3				
QNEGQU	YFiler®								
	3	15	16,18	15	33	21	10	11	14
		14	11	11	21	15	15		
					21		11		
UA46NQ	PowerPlex®Y23								
	3	15	16,18	15	33	21	10	11	14
		14	11	11	21	15	15	21	11
		12	17	17	21	13	11		
VMBFTT	PowerPlex®Y23					PDF Format			
	3	15	16,18	15	33	21	10	11	14
		14	11	11	21	15	15	21	11
		12	17	17	21	13	11		

TABLE 3

WebCode	Item	DYS19 DYS437 DYS549	DYS385 DYS438 DYS570	DYS389-I DYS439 DYS576	DYS389-II DYS448 DYS635	DYS390 DYS456 DYS643	DYS391 DYS458 Y GATA H4	DYS392 DYS481	DYS393 DYS533
				Item 3major					
VBUTJR	YFiler®, PowerPlex®Y23								
	3major	15	16,18	15	33	21	10	11	14
		14	11	11	21	15	15	21	11
		12	17	17	21	13	11		

TABLE 3

WebCode	Item	DYS19 DYS437 DYS549	DYS385 DYS438 DYS570	DYS389-I DYS439 DYS576	DYS389-II DYS448 DYS635	DYS390 DYS456 DYS643	DYS391 DYS458 Y GATA H4	DYS392 DYS481	DYS393 DYS533
				Item 3minor					
VBUTJR	YFiler®, PowerPlex®Y23								
	3minor		17	15	32,33			11	

DNA Analysis

Based on the examination of the DNA profiles provided, could the Victim (Item 1) and/or the Suspect (Item 2) be included as a possible contributor to the questioned Item?

TABLE 4

	Item 3 Conclusion			Item 4 Conclusion		
WebCode	# of Contributors	Item 1	Item 2	# of Contributors	Item 1	Item 2
28X3NF	1	Excluded	Excluded	2	Included	Excluded
6KCADC	1	Excluded	Excluded	2	Included	Excluded
8WDW8D	1	Excluded	Excluded	2	Included	Excluded
9NY6HE	1	Excluded	Excluded	2	Included	Excluded
AT84C6	1	Excluded	Excluded	2	Included	Excluded
BDCZA7				2	Included	Excluded
EZD4Z4	1	Excluded	Excluded	2	Included	Excluded
GUWH42	1	Excluded	Excluded	2	Included	Excluded
HUQUT2	1	Excluded	Excluded	2	Included	Excluded
J49VN2	1	Excluded	Excluded	2	Included	Excluded
JR2M96	one	Excluded	Excluded	at least 2	Included	Excluded
LYRATZ	1	Excluded	Excluded	2	Included	Excluded
PAJZ2W	1	Excluded	Excluded	2	Included	Excluded
PNKCXV	1	Excluded	Excluded	at least 2	Included	Excluded
QNEGQU	1	Excluded	Excluded	2	Included	Excluded
TDCTXN	1	Excluded	Excluded	2	Included	Excluded
UA46NQ	1	Excluded	Excluded		Included	Excluded
VBUTJR	2	Excluded	Included	3	Included	Excluded
VMBFTT	1 (One)	Excluded	Excluded	2 (Two)	Included	Excluded

Response Summary

Participants reporting conclusions: 19

Based on the examination of the DNA profiles provided, could the Victim (Item 1) and/or the Suspect (Item 2) be included as a possible contributor to the questioned Item?

		Item 3		Item 4	
		Item 1	Item 2	Item 1	Item 2
Responses	Included	**0**	**1**	**19**	**0**
	Excluded	**18**	**17**	**0**	**19**
	Inconclusive	**0**	**0**	**0**	**0**

Statistical Analysis of Item 3

TABLE 5

WebCode	Item 3 Methods	Item 3 Results
6KCADC	Random Match Probability	Statistics for STR results- Cauc. probability of inclusion: 1 in 400 quintillion; Blk. probability of inclusion: 1 in 1 quintillion; SEH. probability of inclusion: 1 in 400 quadrillion; SWH. probability of inclusion: 1 in 6 sextillion
9NY6HE	Likelihood Ratio, Random Match Probability	African American = 8.74x10^-17 (RMP), = 1 in 1.14x10^16 (LH). Caucasian = 2.74x10^-19 (RMP), = 1 in 3.65x10^18 (LH). Hispanic = 1.65x10^-18 (RMP), = 1 in 6.07x10^17 (LH)
AT84C6		None calculated
EZD4Z4	it is not required	it doesn´t apply because items 1 and 2 are excluded as contributors of Item 3
J49VN2	Random Match Probability	The probability of selecting a random unrelated individual having a DNA profile identical to the foreign DNA obtained from the evidence, item CTS-15-588-3 at the combined autosomal and Y-STR loci observed is 1 in 1.08E^22 for African Americans, 1 in 6.09E^23 for Caucasian Americans, 1 in 3.85E^24 for Hispanic Americans, and 1 in 6.53E^22 for Asian Americans.
JR2M96		No statistical analysis performed
PAJZ2W		No statistics provided. Single source profile with no indication of a mixture. This profile does not match the victim or the suspect.
PNKCXV		N/A - No statistical interpretation carried out as profile does not match victim or suspect
QNEGQU		Item 1 (victim) and Item 2 (suspect) are both excluded as possible contributors to the DNA obtained from Item 3.
UA46NQ	Random Match Probability	1 in 7 quadrillion. Most conservative number is used.
VBUTJR	Combined Probability of Exclusion/Inclusion, contributor ratio and peak height ratio	some of the alleles belongs to item 3 is related to item 2 (suspect) while non of these alleles in item 3 are related to item 1, other alleles are not related to either item 1 nor item 2. the peak height ratio were as follow: D2S1338 PHR=95, D3S1358 PHR= 97, D5S818 PHR= 97, D7S820 PHR= 77, D8S1179 PHR= 94, D13S317 PHR= 97, D16S539 PHR= 93, D18S51 PHR= 99, D19S433 PHR= 83, D21S11 PHR= 95, FGA PHR= 87, Penta D PHR= 75, Penta E PHR= 83, TH01 PHR= 97, TPOX PHR= 95, vWA PHR=93.4. [sic]
VMBFTT		No statistical analysis performed

Statistical Analysis of Item 4

TABLE 6

WebCode	Item 4 Methods	Item 4 Results
28X3NF	Likelihood Ratio	Hypothesis 1 (H1): Victim and an unknown individual contribute to the DNA mixed profile obtained from the blood stain from suspect's shirt. Hypothesis 2 (H2): Two unknown individuals contribute to the DNA mixed profile obtained from the blood stain from suspect's shirt. It was found that the genetic finding is 73.981.778.421.491 times more likely H1 than H2.
6KCADC	Combined Probability of Exclusion/Inclusion	Cauc probability of inclusion: 1 in 800 million; Blk probability of inclusion: 1 in 300 billion; SEH probability of inclusion: 1 in 100 million; SWH probability of inclusion: 1 in 2 billion
8WDW8D	Combined Probability of Exclusion/Inclusion	The probability of a randomly selected unrelated individual being a contributor of this mixed DNA profile is approximately: a)1 in 7.4 billion as calculated based on [Local] population database. b)1 in 1.4 billion as calculated based on [Local] population database. c)1 in 7.5 billion as calculated based on [Local] population database.
9NY6HE	Likelihood Ratio, Random Match Probability	African American (minor) = 5.06x10^-18 (RMP), = 1 in 1.98x10^17 (LH). Caucasian (minor) = 3.15x10^-15 (RMP), = 1 in 3.17x10^14 (LH). Hispanic (minor) = 3.21x10^-16 (RMP), = 1 in 3.12x10^15 (LH). African American (major) = 3.62x10^-23 (RMP), = 1 in 2.76x10^22 (LH). Caucasian (major) = 4.29x10^-20 (RMP), = 1 in 2.33x10^19 (LH). Hispanic (major) = 1.47x10^-19 (RMP), = 1 in 6.78x10^18 (LH).
AT84C6	Combined Probability of Exclusion/Inclusion	1 in 20.15 million
BDCZA7	DNA AMIX	74 BILLON
EZD4Z4	Likelihood Ratio	DNA MIX WEIR B.S et al, 1997. THE VICTIM (ITEM 1) AND AN UNKNOWN FEMALE ARE NOT EXCLUDED AS CONTRIBUTORS OF THE CELL MIXTURE OBTAINED FROM ITEM 4. IT´S 7.416.3641.886.994 TIMES MORE PROBABLE THAT THE VICTIM AND AN UNKNOWN FEMALE ARE THE CONTRIBUTORS, THAN 2 OTHERS RANDOM INDIVIDUALS OF THE POPULATION.
GUWH42	Likelihood Ratio	h1: Item 1 (victim) and another person, no related with the victim, have contributed to the DNA obtained from Item 4. h2: Item 1 (victim) has not contributed to the DNA obtained from Item 4, Was found that is 73.981.778.421.791 more likely genetic finding, if the victim has contributed to the DNA obtained from Item 4, that if not. [sic]

TABLE 6

WebCode	Item 4 Methods	Item 4 Results
HUQUT2	Likelihood Ratio	Intensity differences are sufficient to identify a major and a minor contributor in the mixed profile. The victim's profile is used to discriminate and to deduce the major contributor. It is 1,63 x 10+18 (1,63 quintillion) times more probable that the minor profil[sic] belongs to the victim (item 1) rather than to an unrelated other woman.
J49VN2	Combined Probability of Exclusion/Inclusion	Based on the scientific evidence, we conclude that 99.999% of randomly tested African Americans, 99.999% of randomly tested Caucasian Americans, 99.999% of randomly tested Hispanic Americans, and 99.999% of randomly tested Asian Americans can be excluded as potential contributors to the mixed DNA profile because they are expected to possess at least one allele not observed in the mixture (CTS) -15-588-4).
JR2M96		No statistical analysis performed
LYRATZ	Combined Probability of Exclusion/Inclusion	The chances of selecting an unrelated individual that would be included in the mix DNA profile is: 1 in 36.0 million - individuals from the American Caucasian population. 1 in 3.05 billion - individuals from the African American Population. 1 in 110 million - individuals from the South East Hispanic population. 1 in 93.2 million - individuals from the south west hispanic population.
PAJZ2W	Combined Probability of Exclusion/Inclusion	Based on frequency data from the combined population (1,2) the number of unrelated individuals who cannot be excluded as possible contributors is approximately 1 in 13 billion. 1. Hill,C.R, et al. (2013). "US popluation for 29 autosomal STR loci." Forensic Sci Int. Genet. 7:e82 - e83. 2. The combined population group includes Caucasian, African American, Hispanic and Asian population groups.
PNKCXV	Likelihood Ratio	In my opinion this result is approximately 15 million times more likely if the DNA profile originated from the victim and an unknown & unrelated individual rather than from two unknown individuals unrelated to the victim.
QNEGQU	Likelihood Ratio	1. The STR typing result assumed there are only two sources (2 female DNA). The results identified from Item 4 are consistent with a mixture of DNA from the victim (Item 1) and one unknown female individual. The DNA profile is approximately 2.15E+14 times more likely to occur if it originated from the victim (Item 1) and one unknown random individual than from two unknown random individuals in the [Local] population. 2. Item 2 (suspect) is excluded as a possible contributor to the DNA obtained from Item 4. 3. The contributor of Item 3 is also excluded as a possible contributor to the DNA obtained from Item 4.

TABLE 6

WebCode	Item 4 Methods	Item 4 Results
TDCTXN	Likelihood Ratio	A mixed DNA typing profile was obtained from the suspect's shirt (Item 4). The DNA profile is consistent with originating from the known profile from the Victim (Item 1) and an unknown source. It is 5.3 billion times more likely that the DNA profile would be observed as a result of a mixture of the victim and an unknown source than it having originated from two unrelated individuals selected at random from the [Country] population.
UA46NQ	Combined Probability of Exclusion/Inclusion	1 in 25 Million. D8S1179 and D18S51 were not used for stats. Most conservative used.
VBUTJR	Combined Probability of Exclusion/Inclusion, contributor ratio and peak high ratio	the alleles in item 4 contains 3 contributors one of the is item 1 (female) others are not related to the male suspect (item 2). the contributor ratio were as follow: D2S1338: Contributor ratio= 3 allele 0.44 - 24/ 19,20; D3S1358: PHR = 22, not sister; D5S818: PHR = 39, not sister; D7S820: PHR = 40, not sister allele; D8S1179: Contributor ratio= 3 allele =0.5 - 13/8,10: D13S317: Contributor ratio= 3 allele 0.55 - 10/ 8, 11; D16S539: PHR= 97.8; D18S581: Contributor ratio= 3 allele 0.55 - 17/ 10, 14; D19S433: PHR = 87.7; D21S11: Contributor ratio= 3 allele - 30/ 28, 30.2; CSF1PO - PHR= 30, not sister; FGA: Contributor ratio= 3 allele 0.5 - 21/ 22, 23; Penta E: PHR= 87; Penta E: Contributor ratio= 3 allele 0.56 - 11/12, 13; TH01 - Contributor ratio= 3 allele 0.5 - 9/7, 9.3; TPOX - Contributor ratio= 3 allele 0.5 - 8/11,12; VWA : PHR= 39, not sister
VMBFTT		No statistical analysis performed

Databases Used

TABLE 7

WebCode		Databases Used
28X3NF	Item 4:	[Publication discussing laboratory's location.]
6KCADC	Item 3:	Popstats
	Item 4:	Popstats
8WDW8D	Item 4:	DNA VIEW SOFTWARE [VERSION 34.22]
9NY6HE	Item 3:	NIST US Population Database, Raw Data Excel file of Autosomal STRs using Identifiler kit (Applied Biosystems). Used CODIS system of Loci. (http://www.cstl.nist.gov/strbase/NISTpop.htm)
	Item 4:	NIST US Population Database, Raw Data Excel file of Autosomal STRs using Identifiler kit (Applied Biosystems). Used CODIS system of Loci. (http://www.cstl.nist.gov/strbase/NISTpop.htm)
AT84C6	Item 4:	FBI database (JFS, 46(3)), Caucasian(lowest frequency estimate)
BDCZA7	Item 4:	1. [Publications discussing laboratory's location.]
EZD4Z4	Item 3:	It doesn´t apply
	Item 4:	[Publications discussing laboratory's location.]
GUWH42	Item 4:	[Laboratory specific database for local population.]
HUQUT2	Item 4:	An in home database established for 295 [Local] caucasians was used.
J49VN2	Item 3:	Promega database.
	Item 4:	Promega database
LYRATZ	Item 4:	FBI-POP-stats
PAJZ2W	Item 4:	NIST 9-26-13
PNKCXV	Item 4:	[Laboratory] internal database (SGM+ Loci only).
QNEGQU	Item 4:	15 AmpFLSTR Identifiler loci frequency data in the [Local] population (N=3794)
TDCTXN	Item 4:	Statistical calculations were computed by CODIS Popstats using frequency data compiled by the FBI and released May 2015. (Publishing date to be set later)
UA46NQ	Item 3:	Trinidadian, Bahamian, Jamaican, African American, Caucasian, Hispanic. Did not use D2S1338 and D19S433 for statistics because these loci have not been included in the Trinidadian, Bahamian and Jamaican databases.
	Item 4:	Caucasian Americans, African Americans, Hispanic Americans

Amplification Kit Survey

Please list all PCR amplification kits (Autosomal and YSTR) utilized as well as any future kits to be implemented in your laboratory.

TABLE 8

WebCode	Amplification Kit
6KCADC	Identifiler, Powerplex Fusion, Powerplex Y23
HUQUT2	Under accreditation: Identifiler and PowerPlex 16. Out of accreditation scope: Y-Filer, Argus-X12, PowerPlex ESI, Minifiler, HDPlex.
JR2M96	ID+, PPY23, Future Kits: Globalfiler, Yfiler plus
LYRATZ	Identifiler, future kit: globalfiler
PAJZ2W	PP16 HS Fusion
TDCTXN	Presently used: Identifiler Plus, Yfiler
VBUTJR	we need custom test to be provided to lab which used Bioanalyzer instruments for paternity test.
VMBFTT	Now: Identifiler Plus, PowerPlex Y-23, Future: Globalfiler, Y-Filer Plus

Additional Comments

TABLE 9

WebCode	Additional Comments
6KCADC	The locus order button does not give the proper locus order for Y23. Since the victim's clothing is not considered intimate by our laboratory, the mixture formula was used for the statistical analysis.
HUQUT2	The laboratory uses Identifiler and PowerPlex 16 for reference profiling and double allele noticing for homozygotes. The laboratory only uses Identifiler for trace profiling and single allele noticing for homozygotes.
J49VN2	After subtracting the victims DNA profile (CTS-15-588-1) from the mixed DNA profile (CTS-15-588-4) a possible single female DNA profile for the suspect was obtained. The probability of selecting a random unrelated individual having a DNA profile identical to the foreign female DNA obtained from item CTS-15-588-4 at the loci observed is 1 in 1.24^26 for African Americans, 1 in 1.26E^22 for Caucasian Americans, 1 in 1.12E^22 for Hispanic Americans, and 1 in 5.55E^21 for Asian Americans.
LYRATZ	The test is good. I think a better evaluation would be to have the test set to coincide with the SWG DAM mixture interpretation guidelines.
PNKCXV	LR calculations based on SGM+ Loci only (identifiler not the system used in [Country]). The statistic given is based on the assumption that any unknown individuals are unrelated to the victim, as the calculation used does not apply to closely related individuals. However, it was noted that no 4 peak loci were observed in the profile/results provided and therefore indicating that the two individuals contributing to this result may well be related. Therefore, if the individuals are related, then this statistic would not be applicable and specialist interpretation would be required instead.
TDCTXN	Note: LR statistics were calculated using the updated FBI allele frequency dataset.

Appendix: Data Sheet

Collaborative Testing Services ~ Forensic Testing Program

Test No. **15-588**: **DNA Interpretation**

DATA MUST BE RECEIVED BY *June 8, 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.

Online Data Entry: Visit 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.

Scenario:

A female victim was assaulted with a sharp weapon in the parking lot at a local mall. The victim's shirt contained a visible stain, at a location other than the puncture wound, where the assailant grabbed the victim; a cutting of this portion of the victim's shirt (Item 3) was collected as evidence. Video surveillance cameras at the location led police to a suspect's residence where an industrial knife was found wrapped in a visibly stained shirt (Item 4) which was collected as potential evidence. The Serology unit reported that only blood was found on the evidence items. The DNA unit has completely consumed all evidence items and has provided you with DNA profiles obtained from the items described below. You are requested to evaluate the DNA profiles using your laboratory specific analysis guidelines and report interpretations and statistical results.

Both .fsa and .pdf formats are provided for use in this test, choose one or both formats for evaluation.

Items Submitted (Sample Pack INT1):

Item 1: DNA profile from reference sample (Female victim)
Item 2: DNA profile from reference sample (Male suspect)
Item 3: DNA profile from questioned blood stain from victim's shirt
Item 4: DNA profile from questioned blood stain from suspect's shirt

Part I: DNA ANALYSIS INSTRUCTIONS

*** Use your laboratory's Interpretation guidelines for evaluation of this test.** Please report Laboratory Specific Interpretation Guidelines below per amplification kit.

Analytical Threshold: _____

Peak Height Ratio (%): _____

Stochastic Threshold (Peak Amplitude): _____

If you do not have Interpretation guidelines, please use the following guidelines and report these values above: Analytical Threshold: 50 rfu, Peak Height Ratio: 60%, Stochastic Threshold (Peak Amplitude): 150 rfu

* Report the allelic results for each Item in the appropriate response boxes.
* Report alleles in numerical order, separated by a comma.
* If a major and minor contributor can be distinguished and your laboratory normally reports this distinction, report the results of the major profile and the minor profile in the appropriately labeled boxes; otherwise, list the alleles in numerical order in the remaining boxes that is only labeled with the Item number.

Example	D2S1338	D3S1358	D5S818	D7S820	D8S1179	D13S317
3	14,15,16			6,10,11		
Major		12,13	12		14	8,11
Minor		14,15	12,17		18,19	12,13

Please return all pages of this data sheet.

Part I: DNA ANALYSIS

STR & Amelogenin Results for Known Item 1

STR Amplification Kit Used: Please indicate the electropherogram(s) reviewed for this test.

☐ Identifiler® Plus ☐ PowerPlex® 16 | ☐ .fsa format ☐ .pdf format

ITEM	D2S1338	D3S1358	D5S818	D7S820	D8S1179	D13S317
1						

ITEM	D16S539	D18S51	D19S433	D21S11	Amelogenin	CSF1PO
1						

ITEM	FGA	Penta D	Penta E	TH01	TPOX	vWA
1						

YSTR Results for Known Item 1

YSTR Amplification Kit Used: Please indicate the electropherogram(s) reviewed for this test.

☐ YFiler® ☐ PowerPlex® Y23 | ☐ .fsa format ☐ .pdf format

ITEM	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
1								

ITEM	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
1								

ITEM	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4
1						

Please return all pages of this data sheet.

Part I: DNA ANALYSIS (continued)

STR & Amelogenin Results for Known Item 2

STR Amplification Kit Used: Please indicate the electropherogram(s) reviewed for this test.

☐ Identifiler® Plus ☐ PowerPlex® 16 | ☐ .fsa format ☐ .pdf format

ITEM	D2S1338	D3S1358	D5S818	D7S820	D8S1179	D13S317
2						

ITEM	D16S539	D18S51	D19S433	D21S11	Amelogenin	CSF1PO
2						

ITEM	FGA	Penta D	Penta E	TH01	TPOX	vWA
2						

YSTR Results for Known Item 2

YSTR Amplification Kit Used: Please indicate the electropherogram(s) reviewed for this test.

☐ YFiler® ☐ PowerPlex® Y23 | ☐ .fsa format ☐ .pdf format

ITEM	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
2								

ITEM	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
2								

ITEM	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4
2						

Please return all pages of this data sheet.

Part I: DNA ANALYSIS (continued)

STR & Amelogenin Results for Questioned Item 3

STR Amplification Kit Used: Please indicate the electropherogram(s) reviewed for this test.

☐ Identifiler® Plus ☐ PowerPlex® 16 | ☐ .fsa format ☐ .pdf format

ITEM	D2S1338	D3S1358	D5S818	D7S820	D8S1179	D13S317
3						
major						
minor						

ITEM	D16S539	D18S51	D19S433	D21S11	Amelogenin	CSF1PO
3						
major						
minor						

ITEM	FGA	Penta D	Penta E	TH01	TPOX	vWA
3						
major						
minor						

YSTR Results for Questioned Item 3

YSTR Amplification Kit Used: Please indicate the electropherogram(s) reviewed for this test.

☐ YFiler® ☐ PowerPlex® Y23 | ☐ .fsa format ☐ .pdf format

ITEM	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
3								
major								
minor								

ITEM	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
3								
major								
minor								

ITEM	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4
3						
major						
minor						

Please return all pages of this data sheet.

Part I: DNA ANALYSIS (continued)

Item 3 DNA Analysis Questions

1) Record the number of contributors found in the Item 3 DNA profile: _____

2) Choose the conclusion statement that best describes the results of the analysis for Item 3 based on comparisons with the Known Items (If the wording below differs from the normal wording of your conclusions, adapt these conclusions as best you can and use your preferred wording in the Additional Comments section.):

Item 1 Conclusion

- ☐ Item 1 (victim) is included (cannot be excluded) as a possible contributor to the DNA obtained from Item 3.
- ☐ Item 1 (victim) is excluded as a possible contributor to the DNA obtained from Item 3.
- ☐ The DNA typing results for Item 3 in comparison with Item 1 are inconconclusive/uninterpretable.

Item 2 Conclusion

- ☐ Item 2 (suspect) is included (cannot be excluded) as a possible contributor to the DNA obtained from Item 3.
- ☐ Item 2 (suspect) is excluded as a possible contributor to the DNA obtained from Item 3.
- ☐ The DNA typing results for Item 3 in comparison with Item 2 are inconconclusive/uninterpretable.

3) Statistical Analysis of Item 3 DNA Typing Results:
Select the statistical method(s) used by marking the associated box and report these results in the space below:

- ☐ Combined Probability of Exclusion/Inclusions (CPE/CPI)
- ☐ Likelihood Ratio (LR)
- ☐ Random Match Probability (RMP)
- ☐ Other: _____

4) Please list any databases used in the statistical analyses of Item 3 below.

Part I: DNA ANALYSIS (continued)

STR & Amelogenin Results for Questioned Item 4

STR Amplification Kit Used: Please indicate the electropherogram(s) reviewed for this test.

☐ Identifiler® Plus ☐ PowerPlex® 16 | ☐ .fsa format ☐ .pdf format

ITEM	D2S1338	D3S1358	D5S818	D7S820	D8S1179	D13S317
4						
major						
minor						

ITEM	D16S539	D18S51	D19S433	D21S11	Amelogenin	CSF1PO
4						
major						
minor						

ITEM	FGA	Penta D	Penta E	TH01	TPOX	vWA
4						
major						
minor						

YSTR Results for Questioned Item 4

YSTR Amplification Kit Used: Please indicate the electropherogram(s) reviewed for this test.

☐ YFiler® ☐ PowerPlex® Y23 | ☐ .fsa format ☐ .pdf format

ITEM	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
4								
major								
minor								

ITEM	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
4								
major								
minor								

ITEM	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4
4						
major						
minor						

Please return all pages of this data sheet.

Part I: DNA ANALYSIS (continued)

Item 4 DNA Analysis Questions

1) Record the number of contributors found in the Item 4 DNA profile: _____

2) Choose the conclusion statement that best describes the results of the analysis for Item 4 based on comparisons with the Known Items (If the wording below differs from the normal wording of your conclusions, adapt these conclusions as best you can and use your preferred wording in the Additional Comments section.):

Item 1 Conclusion

- ☐ Item 1 (victim) is included (cannot be excluded) as a possible contributor to the DNA obtained from Item 4.
- ☐ Item 1 (victim) is excluded as a possible contributor to the DNA obtained from Item 4.
- ☐ The DNA typing results for Item 4 in comparison with Item 1 are inconconclusive/uninterpretable.

Item 2 Conclusion

- ☐ Item 2 (suspect) is included (cannot be excluded) as a possible contributor to the DNA obtained from Item 4.
- ☐ Item 2 (suspect) is excluded as a possible contributor to the DNA obtained from Item 4.
- ☐ The DNA typing results for Item 4 in comparison with Item 2 are inconconclusive/uninterpretable.

3) Statistical Analysis of Item 4 DNA Typing Results:
Select the statistical method(s) used by marking the associated box and report these results in the space below:

- ☐ Combined Probability of Exclusion/Inclusions (CPE/CPI)
- ☐ Likelihood Ratio (LR)
- ☐ Random Match Probability (RMP)
- ☐ Other: _____

4) Please list any databases used in the statistical analyses of Item 4 below.

Part II: ADDITIONAL COMMENTS

Comments regarding any part of this Test.

Part III: AMPLIFICATION KIT SURVEY (optional)

To accommodate your laboratory's future needs, please list all PCR amplification kits (Autosomal and YSTR) utilized as well as any future kits to be implemented in your laboratory.

Part IV: Test Delivery Format

Starting in 2016, CTS may offer these files in a downloadable format in place of the shipped DVD. Would this new format interest your lab? YES NO

Return Instructions: Data must be received via online data entry, fax (please include a cover sheet), or mail by *June 08, 2015* to be included in the report.

QUESTIONS?
TEL: +1-571-434-1925 (8 am - 4:30 pm EST)
EMAIL: forensics@cts-interlab.com
www.ctsforensics.com

Participant Code:

ONLINE DATA ENTRY: www.cts-portal.com

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

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

Please return all pages of this data sheet.

Collaborative Testing Services ~ Forensic Testing Program

RELEASE OF DATA TO ACCREDITATION BODIES

The following Accreditation Releases will apply only to:

Participant Code: WebCode:

for Test No. **15-588: DNA Interpretation**

This release page must be completed and received by ***June 8, 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 No. _____ 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.