FORENSIC SERVICES
SCOTTISH
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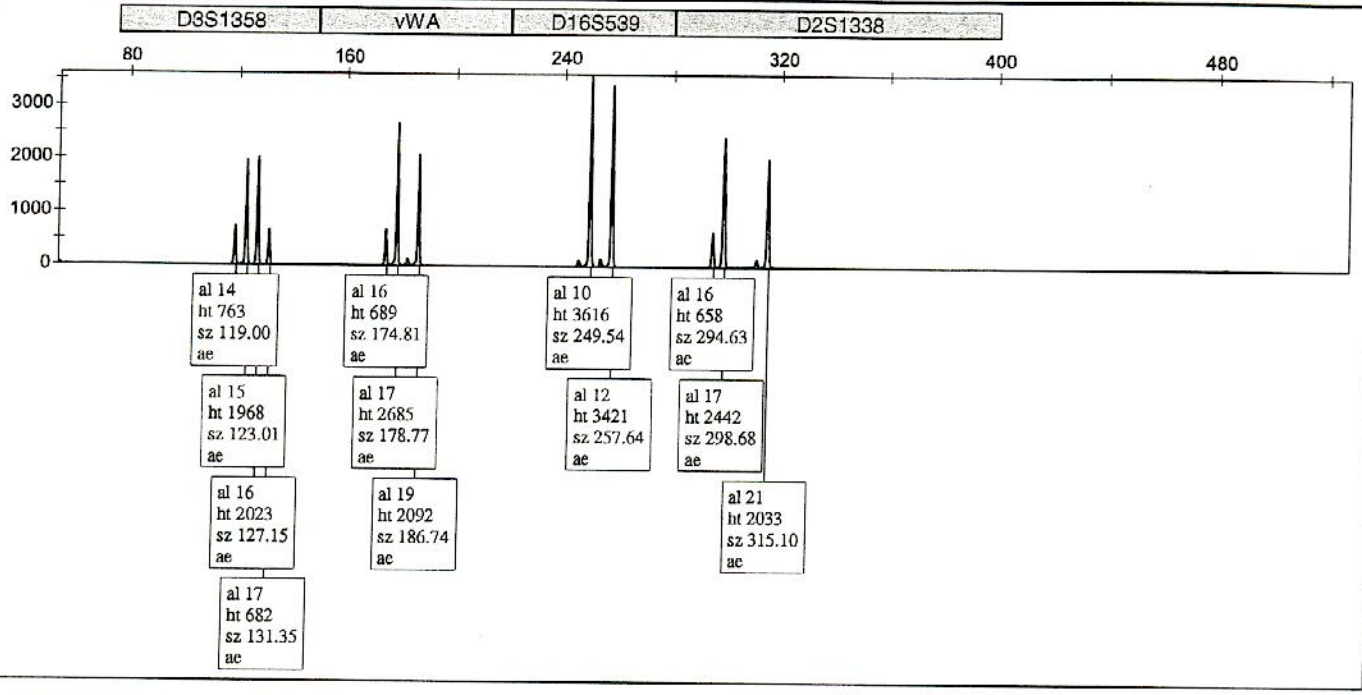
MixtureCalc v1.2 (Freeware Version)

ISFG '10 Summer School

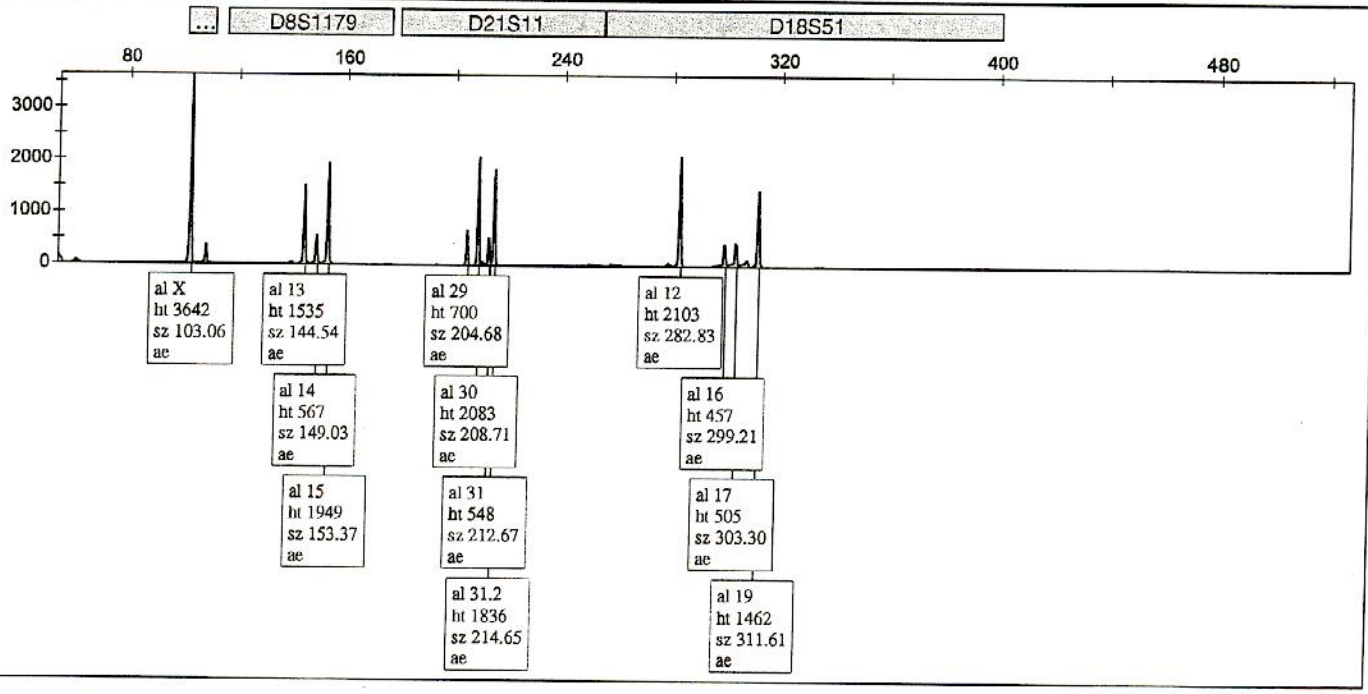
Mixture Interpretation Software – Examples

Example 1 – 3:1 Mixture
Example 2 – 1:1 Mixture

Sample File	Sample Name
C02_8537.fsa	8537

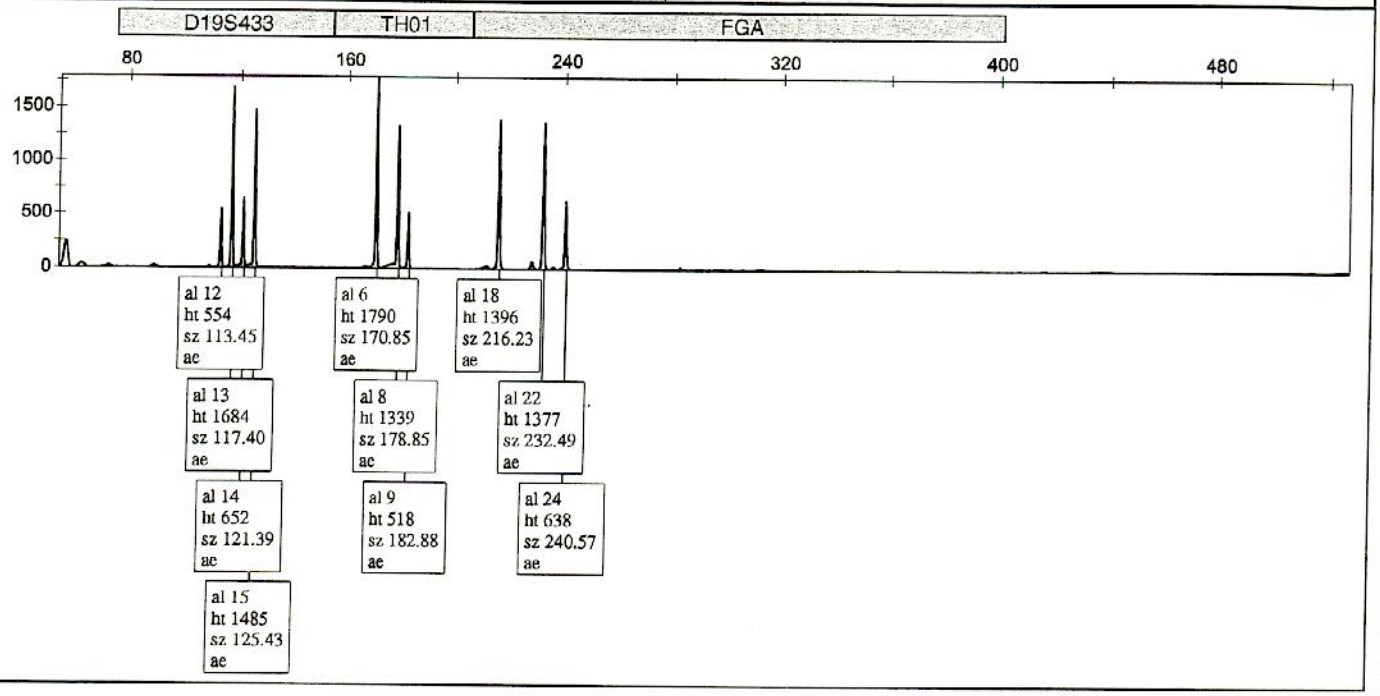


C02_8537.fsa	8537



EXAMPLE 1
ISFG '10

Sample File	Sample Name
C02_8537.fsa	8537



Lab Ref No.	EXAMPLE 1
Item No.	ISFG '10

LOCUS	Allele	Peak Height	Adjusted Peak Height	Stutter
D19	12	554	301	
	13	1684	1575	
	14	652	396	
	15	1485	1472	
D3	14	763	468	
	15	1968	1634	
	16	2023	1842	
	17	682	601	
D8	13	1535	1461	
	14	567	268	
	15	1949	1932	
vWA	16	689	313	
	17	2685	2671	
	19	2092	2092	
THO	6	1790	1790	
	8	1339	1308	
	9	518	491	

LOCUS	Allele	Peak Height	Adjusted Peak Height	Stutter
D21	29	700	429	
	30	2083	1991	
	31	548	486	
	31.2	1836	1836	
FGA	18	1396	1396	
	22	1377	1377	
	24	638	638	
D16	10	3616	3616	
	12	3421	3421	
D18	12	2103	2103	
	16	457	381	
	17	505	487	
	19	1462	1462	
D2	16	658	292	
	17	2442	2416	
	21	2033	2033	

Lab Ref No.	EXAMPLE 1
Item No.	ISFG '10

LOCUS	Allele	Peak Height	Stutter Adjusted Peak	Stutter
D19	12	554	554	
	13	1684	1684	
	14	652	652	
	15	1485	1485	
D3	14	763	763	
	15	1968	1968	
	16	2023	2023	
	17	682	682	
D8	13	1535	1535	
	14	567	567	
	15	1949	1949	
vWA	16	689	689	
	17	2685	2685	
	19	2092	2092	
THO	6	1790	1790	
	8	1339	1339	
	9	518	518	

LOCUS	Allele	Peak Height	Stutter Adjusted Peak	Stutter
D21	29	700	700	
	30	2083	2083	
	31	548	548	
	31.2	1836	1836	
FGA	18	1396	1396	
	22	1377	1377	
	24	638	638	
D16	10	3616	3616	
	12	3421	3421	
D18	12	2103	2103	
	16	457	457	
	17	505	505	
	19	1462	1462	
D2	16	658	658	
	17	2442	2442	
	21	2033	2033	

Laboratory Reference No.	EXAMPLE 1

Item No.	ISFG '10

LOCUS	Allele	Peak Height	Contributor 1		R	Contributor 2		Mx2	MR (x:1)	P	C	Notes
AMG	X	3642	X	X		X	Y	N/A				Ind of Y
D19	12	554	13	15		12	14	0.28	2.6	*		
	13	1684										
	14	652										
	15	1485										
D3	14	763	15	16		14	17	0.27	2.8	*		
	15	1968										
	16	2023										
	17	682										
D8	13	1535	13	15		14	15	0.26	2.8	*		
	14	567	13	15		13	14	0.16	5.3	*		
	15	1949	13	15		14	14	0.14	6.1	*		
vWA	16	689	17	19		16	17	0.24	3.1	*		
	17	2685	17	19		16	19	0.13	6.4	*		
	19	2092	17	19		16	16	0.13	6.9	*		
THO	6	1790	6	8		6	9	0.27	2.6	*		
	8	1339	6	8		8	9	0.15	5.6	*		
	9	518	6	8		9	9	0.14	6.0	*		
D21	29	700	30	31.2		29	31	0.24	3.1	*		
	30	2083										
	31	548										
	31.2	1836										
FGA	18	1396	18	22		18	24	0.28	2.5	*		
	22	1377	18	22		22	24	0.28	2.6	*		
	24	638	18	22		24	24	0.19	4.3	*		
D16	10	3616	10	12		12	F	-0.03	-37.1			
	12	3421	10	10	↔	12	12	0.49	1.1			
			10	12		10	F	0.03	35.1			
			10	12		10	12	N/A		*		
			10	12		F	F	N/A				
D18	12	2103	12	19		16	17	0.21	3.7	*		
	16	457										
	17	505										
	19	1462										
D2	16	658	17	21		16	17	0.23	3.3	*		
	17	2442	17	21		16	21	0.15	5.6	*		
	21	2033	17	21		16	16	0.13	6.8	*		

Est. Swing	
0.45	0.55
RO Swing Override	
Data Adjust	Stutter

Ave Mx1	Ave Mx2
0.75	0.25
Mx Tolerance	
0.20	
Mx2 Range	
0.05	0.45

Mixture Ratio	
3.0	:1
MR Range	
19.5	1.2
Mx Filter Applied	
NO	

Dropout
NO
Est. Status
GREEN
RO Status
GREEN

Heterozygous Rule
0.5
Homozygous Rule
200

Signature.....

Laboratory Reference No.	EXAMPLE 1

Item No.	ISFG '10

LOCUS	Allele	Peak Height	Contributor 1		R	Contributor 2		Mx2	MR (x:1)	P	C	Notes
AMG	X	3642	X	X		X	Y	N/A				Ind of Y
D19	12	554	13	15		12	14	0.28	2.6	*		
	13	1684										
	14	652										
	15	1485										
D3	14	763	15	16		14	17	0.27	2.8	*		
	15	1968										
	16	2023										
	17	682										
D8	13	1535	13	15		14	14	0.14	6.1	*		
	14	567	13	15		13	14	0.16	5.3	*		
	15	1949	13	15		14	15	0.26	2.8	*		
vWA	16	689	17	19		16	16	0.13	6.9	*		
	17	2685	17	19		16	17	0.24	3.1	*		
	19	2092	17	19		16	19	0.13	6.4	*		
THO	6	1790	6	8		9	9	0.14	6.0	*		
	8	1339	6	8		6	9	0.27	2.6	*		
	9	518	6	8		8	9	0.15	5.6	*		
D21	29	700	30	31.2		29	31	0.24	3.1	*		
	30	2083										
	31	548										
	31.2	1836										
FGA	18	1396	18	22		24	24	0.19	4.3	*		
	22	1377	18	22		18	24	0.28	2.5	*		
	24	638	18	22		22	24	0.28	2.6	*		
D16	10	3616	10	12		10	12	N/A		*		
	12	3421										
D18	12	2103	12	19		16	17	0.21	3.7	*		
	16	457										
	17	505										
	19	1462										
D2	16	658	17	21		16	16	0.13	6.8	*		
	17	2442	17	21		16	17	0.23	3.3	*		
	21	2033	17	21		16	21	0.15	5.6	*		

Est. Swing	
0.45	0.55
RO Swing Override	
Data Adjust	Stutter

Ave Mx1	Ave Mx2
0.75	0.25
Mx Tolerance	
0.20	
Mx2 Range	
0.05	0.45

Mixture Ratio	
3.0	:1
MR Range	
19.5	1.2
Mx Filter Applied	
YES	

Dropout
NO
Est. Status
GREEN
RO Status
GREEN

Heterozygous Rule
0.5
Homozygous Rule
200

Signature.....

Lab Ref No.	EXAMPLE 1
Item No.	ISFG '10

Contributor 1 + Unknown

Unknown + Unknown

LOCUS			
D19	1	X	12 14
	13 15	X	12 14
D3	1	X	14 17
	15 16	X	14 17
D8	1	X	14 14 13 14 14 15
	13 15	X	14 14
	13 15	X	13 14
	13 15	X	14 15
vWA	1	X	16 16 16 17 16 19
	17 19	X	16 16
	17 19	X	16 17
	17 19	X	16 19
THO	1	X	9 9 6 9 8 9
	6 8	X	9 9
	6 8	X	6 9
	6 8	X	8 9

LOCUS			
D21	1	X	29 31
	30 31.2	X	29 31
FGA	1	X	24 24 18 24 22 24
	18 22	X	24 24
	18 22	X	18 24
	18 22	X	22 24
D16	1	X	10 12
	10 12	X	10 12
D18	1	X	16 17
	12 19	X	16 17
D2	1	X	16 16 16 17 16 21
	17 21	X	16 16
	17 21	X	16 17
	17 21	X	16 21

LIKELIHOOD RATIO
CAUCASIAN
20,350,872,411,078
ASIAN
2,186,821,195,838
AFRO CARIBBEAN
1,087,831,836,593

WHITTAKER EFFECT
CAUCASIAN
10,175,436,205,539
ASIAN
1,093,410,597,919
AFRO CARIBBEAN
543,915,918,296

Signature.....

Lab Ref No.	EXAMPLE 1
Item No.	ISFG '10

Contributor 2 + Unknown

Unknown + Unknown

LOCUS			
D19	1	X	13 15
	13 15	X	12 14
D3	1	X	15 16
	15 16	X	14 17
D8	1	X	13 15
	13 15	X	14 14
	13 15	X	13 14
	13 15	X	14 15
vWA	1	X	17 19
	17 19	X	16 16
	17 19	X	16 17
	17 19	X	16 19
THO	1	X	6 8
	6 8	X	9 9
	6 8	X	6 9
	6 8	X	8 9

LOCUS			
D21	1	X	30 31.2
	30 31.2	X	29 31
FGA	1	X	18 22
	18 22	X	24 24
	18 22	X	18 24
	18 22	X	22 24
D16	1	X	10 12
	10 12	X	10 12
D18	1	X	12 19
	12 19	X	16 17
D2	1	X	17 21
	17 21	X	16 16
	17 21	X	16 17
	17 21	X	16 21

LIKELIHOOD RATIO
CAUCASIAN
110,079,326,829
ASIAN
12,776,225,327
AFRO CARIBBEAN
2,751,664,305

WHITTAKER EFFECT
CAUCASIAN
55,039,663,415
ASIAN
6,388,112,664
AFRO CARIBBEAN
1,375,832,153

Lab Ref No.	EXAMPLE 1
Item No.	ISFG '10

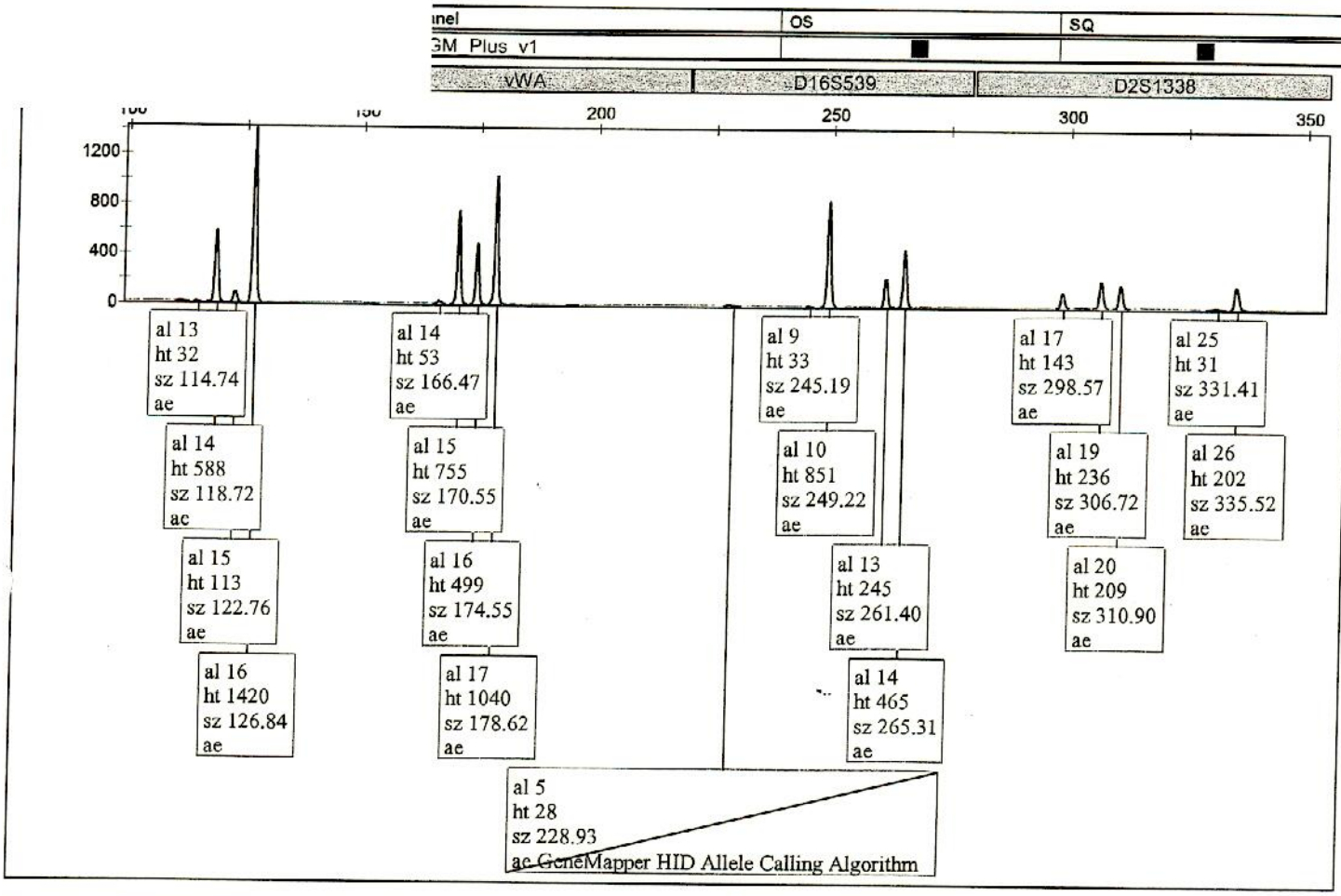
Contributor 1		
Locus	Alleles	
D19	13	15
D3	15	16
D8	13	15
vWA	17	19
THO	6	8
D21	30	31.2
FGA	18	22
D16	10	12
D18	12	19
D2	17	21

Match Probability	Unrelated	FST
Scottish Caucasian	20,350,872,411,078	0.02
Affo-Caribbean	1,087,831,836,593	0.05
Asian	2,186,821,195,838	0.05

Lab Ref No.	
Item No.	

Contributor 2	
Locus	Alleles
D19	12 14
D3	14 17
D8	13 14 14 14 14 15
vWA	16 16 16 17 16 19
THO	6 9 8 9 9 9
D21	29 31
FGA	18 24 22 24 24 24
D16	10 12
D18	16 17
D2	16 16 16 17 16 21

Match Probability	Unrelated	FST
Scottish Caucasian	110,079,326,829	0.02
Affo-Caribbean	2,751,664,305	0.05
Asian	12,776,225,327	0.05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OS
SQ
GM_Plus_v1
vWA
D16S539
D2S1338
100
150
200
250
300
350
1200
800
400
0
al 13
ht 32
sz 114.74
ae
al 14
ht 588
sz 118.72
ae
al 15
ht 113
sz 122.76
ae
al 16
ht 1420
sz 126.84
ae
al 14
ht 53
sz 166.47
ae
al 15
ht 755
sz 170.55
ae
al 16
ht 499
sz 174.55
ae
al 17
ht 1040
sz 178.62
ae
al 9
ht 33
sz 245.19
ae
al 10
ht 851
sz 249.22
ae
al 13
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al 14
ht 465
sz 265.31
ae
al 17
ht 143
sz 298.57
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al 19
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al 20
ht 209
sz 310.90
ae
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al 26
ht 202
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ht 28
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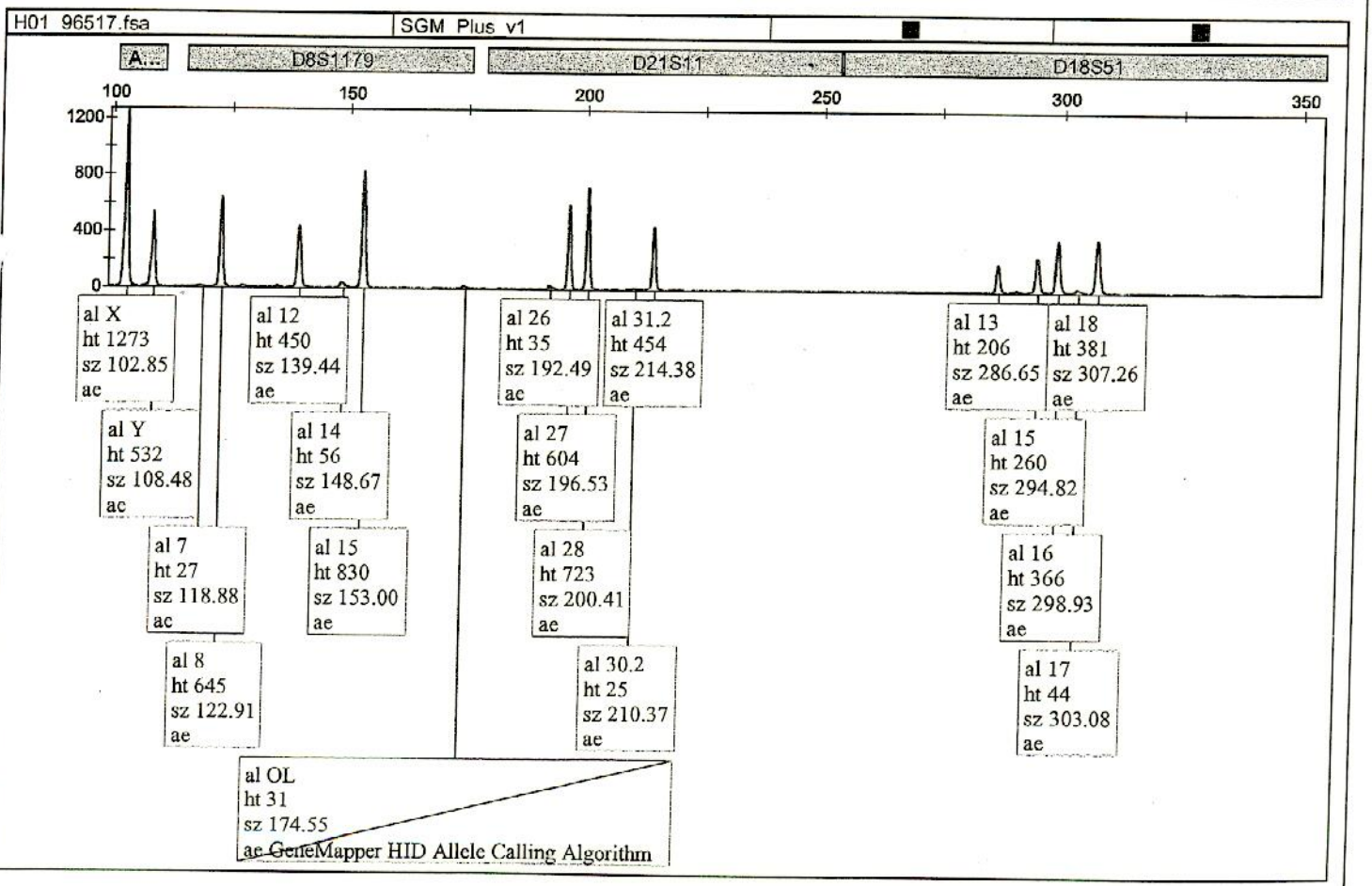
ae GeneMapper HID Allele Calling Algorithm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SGM_Plus_v1
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D18S51
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150
200
250
300
350
1200
800
400
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al X
ht 1273
sz 102.85
ae
al Y
ht 532
sz 108.48
ae
al 7
ht 27
sz 118.88
ac
al 8
ht 645
sz 122.91
ae
al 12
ht 450
sz 139.44
ae
al 14
ht 56
sz 148.67
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al 15
ht 830
sz 153.00
ae
al 26
ht 35
sz 192.49
ac
al 31.2
ht 454
sz 214.38
ae
al 27
ht 604
sz 196.53
ae
al 28
ht 723
sz 200.41
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al 30.2
ht 25
sz 210.37
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al 13
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al 15
ht 260
sz 294.82
ae
al 16
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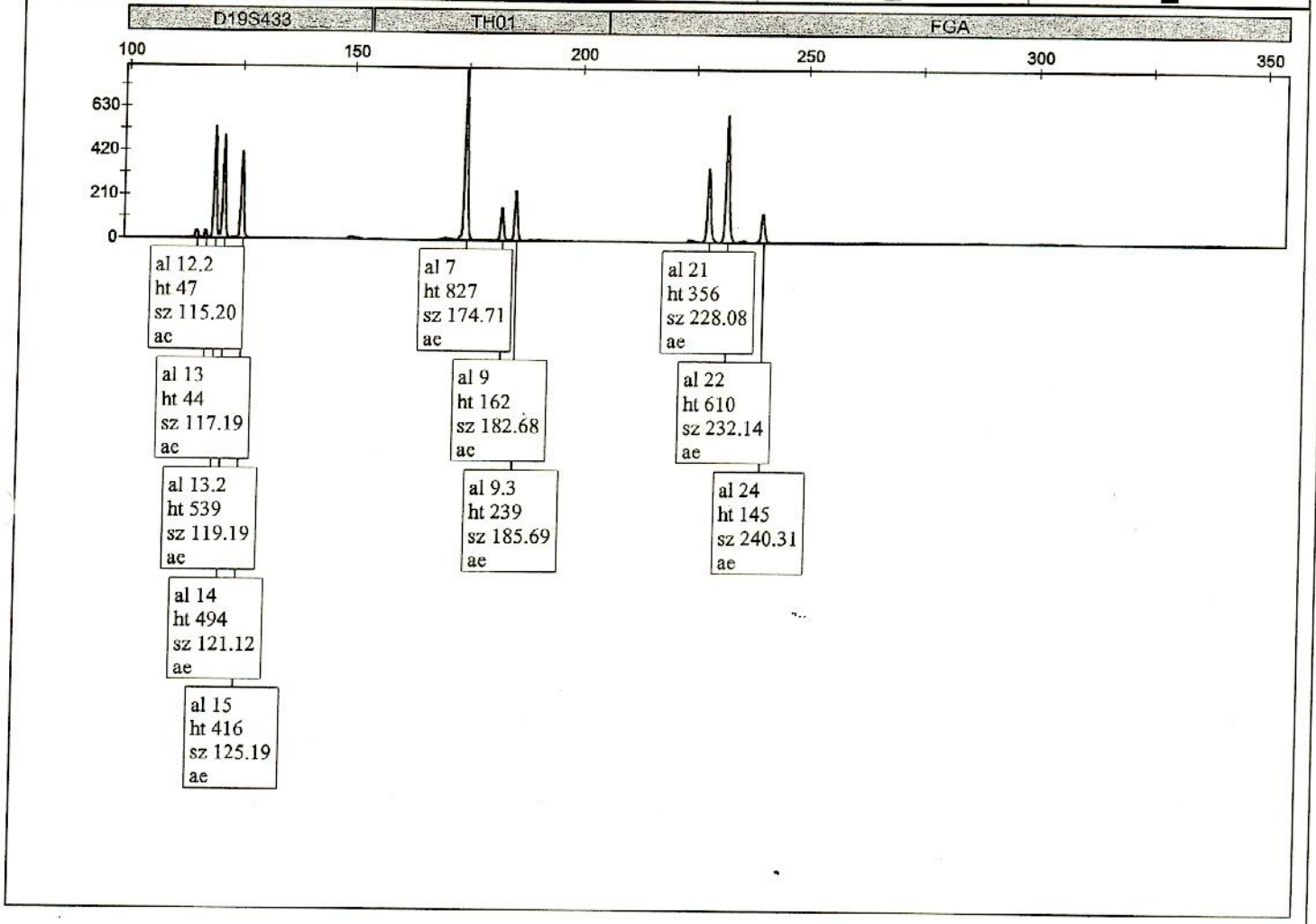
al 17
ht 44
sz 303.08
ae
al OL
ht 31
sz 174.55
ae GeneMapper HID Allele Calling Algorithm

Applied Biosystems
GeneMapper ID v3.2.1

6530+.050907fmpro

Sample File	Panel	OS	SQ
H01_96517.fsa	SGM_Plus_v1		



Laboratory Reference No.	EXAMPLE 2

Item No.	ISFG '10

LOCUS	Allele	Peak Height	Contributor 1		R	Contributor 2		Mx2	MR (x:1)	P	C	Notes
AMG	X	1273	X	Y	↔	X	X	0.41	1.4			
	Y	532										
D19	13.2	539	13.2	15	↔	13.2	14	0.50	1.0	*		
	14	494	14	15	↔	13.2	13.2	0.35	1.8	*		
	15	494	13.2	15		14	14	0.32	2.1	*		
			13.2	14		15	15	0.32	2.1	*		
D3	14	588	14	16	↔	16	16	0.41	1.4	*		
	16	1420	16	16		14	14	0.29	2.4	*		
D8	8	645	8	12	↔	15	15	0.43	1.3	*		
	12	450	8	15	↔	12	15	0.40	1.5	*		
	15	830	12	15		8	8	0.34	2.0	*		
			8	15		8	12	0.30	2.3	*		
			8	15		12	12	0.23	3.3	*		
vWA	15	755	15	16	↔	17	17	0.45	1.2	*		
	16	499	15	17	↔	16	17	0.39	1.6	*		
	17	1040	15	17		16	16	0.22	3.6	*		
THO	7	827	7	7		9	9.3	0.33	2.1	*		
	9	162										
	9.3	239										
D21	27	604	27	28	↔	28	31.2	0.42	1.4	*		
	28	723	27	31.2	↔	28	28	0.41	1.5	*		
	31.2	454	27	28		27	31.2	0.35	1.9	*		
			28	31.2		27	27	0.34	1.9	*		
			27	28		31.2	31.2	0.25	2.9	*		
FGA	21	356	21	22		22	24	0.31	2.2	*		
	22	610	21	22		24	F	0.13	6.7	*		
	24	145										
D16	10	851	10	10	↔	13	14	0.45	1.2	*		
	13	245	10	14	↔	10	13	0.36	1.8	*		
	14	465	10	14		13	13	0.16	5.4	*		
D18	13	206	15	16	↔	13	18	0.48	1.1	*		
	15	260	15	18	↔	13	16	0.47	1.1	*		
	16	366	16	18	↔	13	15	0.38	1.6	*		
	18	381										
D2	17	143	20	26	↔	17	19	0.48	1.1	*		
	19	236	19	26	↔	17	20	0.45	1.2	*		
	20	209	19	20	↔	17	26	0.44	1.3	*		
	26	202										

Est. Swing	
0.35	0.65
RO Swing Override	
Data Adjust	Stutter

Ave Mx1	Ave Mx2
0.59	0.41
Mx Tolerance	
0.35	
Mx2 Range	
0.06	0.76

Mixture Ratio	
1.4	:1
MR Range	
15.5	0.3
Mx Filter Applied	
NO	

Dropout
YES
Est. Status
RED
RO Status
RED

Heterozygous Rule
0.5
Homozygous Rule
200

Signature.....