



GRUPO DE HABLA ESPAÑOL A Y PORTUGUESA DE LA ISFG

GRUPO DE LÍNGUAS ESPANHOLA E PORTUGUESA DA ISFG

Análisis de resultados de STRs autosómicos



Ejercicio GHEP-ISFG 2010

XV Jornadas de Genética Forense
Granada, España
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Departamento de Madrid, España



STRs autosómicos

	M1	M2	M3	M4	M5	M6	M7	M8C
Nº determ.	1930	1929	1930	1930	1074	1071	1073	593
Nº discord.	21	14	5	23	0	49	28?	8
% discord.	1,09	0,73	0,26	1,19	0	4,58		1,35

63 discord.

Lab 560164: **17 discord.**

Marcador	M1		M2		M3		M4		M5		M6		M7		M8			
	n	Disc.	n	Disc.	n	Disc.	n	Disc.	n	Disc.	n	Disc.	n	D	n	Disc.		
ACTBP2_SE33	10	0	10	0	10	0	10	0	8	0	8	0	8	?	4	0		
CSF1PO	110	1	110	1	110	0	110	0	59	0	59	0	59	?	33	1		
D10S1248	16	0	16	0	16	0	16	0	13	0	13	0	13	?	9	0		
D12S391	20	4	20	0	20	0	20	0	14	0	14	0	14	?	8	0		
D13S317	109	0	109	1	109	1	109	2	59	0	59	7	59	?	36	0		
D16S539	111	1	111	1	111	C. mayoritario homoc. C. minoritario heteroc. Comparten 1 alelo					5	60	?	37	0			
D18S51	110	1	110	0	110						3	60	?	35	0			
D19S433	91	0	91	1	91						1	57	?	33	2			
D1S1656	20	2	20	1	20						0	15	?	8	1			
D21S11	108	1									3	61	?	37	0			
D22S1045	15	0	Alelos intermedios				0	15	0	12	0	12	0	12	?	8	0	
D2S1338	92	2					0	92	Alelo 20 (OL)				57	7	57	?	35	1
D2S441	16	0	16	0	16	0	16				14	0	14	?	9	0		
D3S1358	111	0	111	1	111	0	111	10	60	0	59	4	60	?	34	1		
D5S818	110	0	110	2	110	0	110	1	59	0	59	6	59	?	34	0		
D7S820	110	1	110	0	110	0	110	0	59	0	59	0	61	?	35	1		
D8S1179	111	1	111	0	111	0	111	0	60	0	60	2	60	?	34	0		
F13A01	22	1	22	0	22	0	22	2	11	0	11	0	11	?	3	0		
F13B	22	0	22	0	22		Ambos heterocigotos Comparten 1 alelo				0	9	?	3	0			
FES_FPS	23	0	23	0	23						1	10	?	3	0			
FGA	110	1	110	1	110						7	60	?	36	0			
LPL	23	0	23	0	23	0	23	0	9	0	9	0	9	?	3	0		
Penta_D	64	0	64	0	64	0	64	1	36	0	36	2	34	?	12	0		
Penta_E	64	1	64	2	64	1	64	1	36	0	36	0	34	?	11	0		
TH01	110	3	110	2	110	2	110	1	58	0	58	0	58	?	35	1		
TPOX	111	0	111	0	111	0	111	0	59	0	58	0	59	?	33	0		
VWA	111	1	111	1	111	0	111	1	60	0	59	1	60	?	34	1		
	1930	21	1929	14	1930	5	1930	23	1074	0	1071	49	1073	28?	593	8		

C. mayoritario homoc.
C. minoritario heteroc.
Comparten 1 alelo

Alelo 20 (OL)

Ambos heterocigotos
Comparten 1 alelo

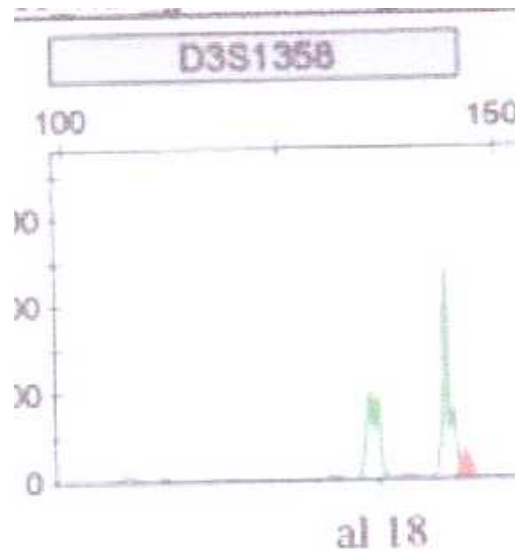
560202 ?

563771 ?

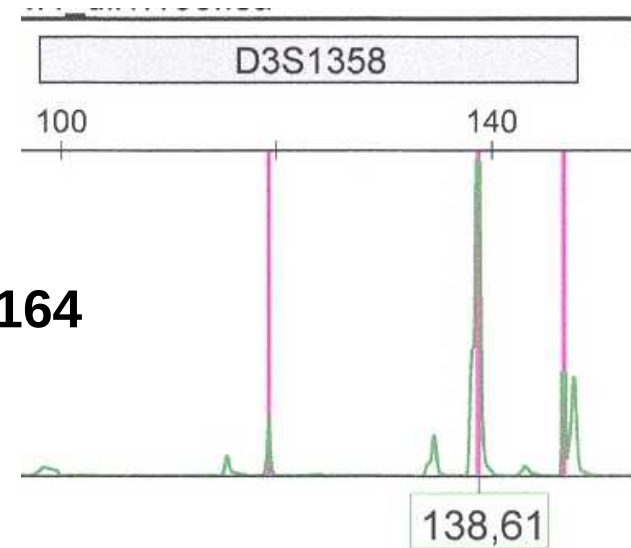
D3S1353 – 18

Identifiler

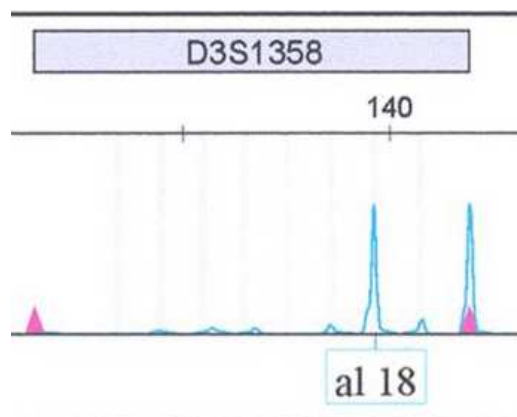
560118



560164



560186



560203

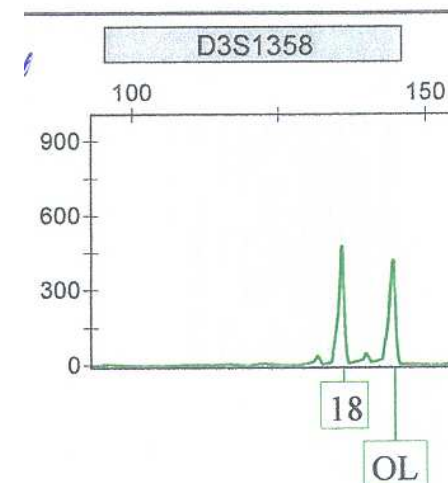


TABLE 1.THE AmpF[®]STR[®] IDENTIFILER[®] KIT LOCI

Locus Designation	Chromosome Location	Alleles included in Identifier [®] Allelic Ladder	Dye Label
D8S1179	8	8-19	6-FAM [™]
D21S11	21q11.2-q21	24, 24.2, 25-28, 28.2, 29, 29.2, 30, 30.2, 31, 31.2, 32, 32.2, 33, 33.2, 34, 34.2, 35, 35.2, 36-38	
D7S820	7q11.21-22	6-15	
CSF1P0	5q33.3-34	6-15	
D3S1358	3p	12-19	VIC [®]
TH01	11p15.5	4-9, 9.3, 10, 11, 13.3	
D13S317	13q22-31	8-15	
D16S539	16q24-qter	5, 8-15	

Identifier

PowerPlex16

D3S1358

N	Len(Bp)	T(sec)
12	111,85	1742,88
13	116,13	1765,94
14	120,50	1789,50
15	124,62	1812,03
16	128,78	1834,81
17	133,05	1858,17
18	137,15	1880,58
19	142,68	1903,40
20	150,40	1924,16

(continued)

Part	Description	Storage Conditions
AmpF[®]STR[®] NGM[™] Allelic Ladder , 1 tube, 75 µL (PN 4415023)	Contains AmpF[®]STR[®] NGM[™] Allelic Ladder with the following amplified alleles: 6-FAM[™] dye (blue): D10S1248 alleles 8-18; vWA alleles 11-24; D16S539 alleles 5, 8-15; D2S1338 alleles 15-28. - VIC[®] dye (green): Amel alleles X, Y; D8S1179 alleles 8-19; D21S11 alleles 24, 24.2, 25-28, 28.2, 29, 29.2, 30, 30.2, 31, 31.2, 32, 32.2, 33, 33.2, 34, 34.2, 35, 35.2, 36-38; D18S51 alleles 7, 9, 10, 10.2, 11-13, 13.2, 14, 14.2, 15-27. - NED[™] dye (yellow): D22S10451 alleles 8-19; D19S433 alleles 9-12, 12.2, 13, 13.2, 14, 14.2, 15, 15.2, 16, 16.2, 17, 17.2; TH01 alleles 4-9, 9.3, 10, 11, 13.3; FGA alleles 17-26, 26.2, 27-30, 30.2, 31.2, 32.2, 33.2, 42.2, 43.2, 44.2, 45.2, 46.2, 47.2, 48.2, 50.2, 51.2. - PET[®] dye (red): D2S441 alleles 9-16; D3S1358 alleles 12-19; D1S1656 alleles 9-14, 14.3, 15, 15.3, 16, 16.3, 17, 17.3, 18.3, 19.3, 20.3; D12S391 alleles 14-19, 19.3, 20-27.	See Kit Storage Conditions. Store protected from light. Allelic Ladder can be stored at 2 ° to 8 °C up to 6 months or the expiration date of the kit, whichever comes first. IMPORTANT! The allelic ladder contains PCR products. Do NOT amplify. To avoid contamination, store the allelic ladder separate from the other kit components and unamplified DNA.

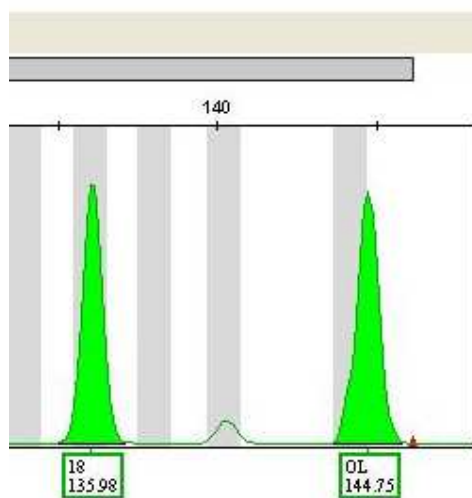
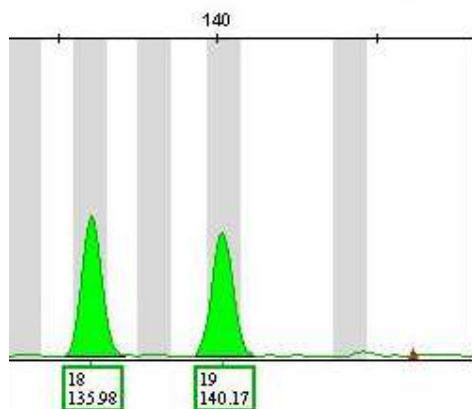
NGM

560175 ?

D3S1353 – 18/20.1

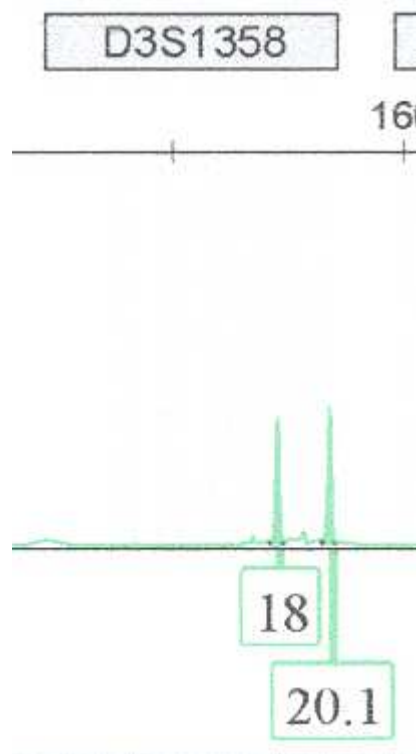
Identifiler

560119

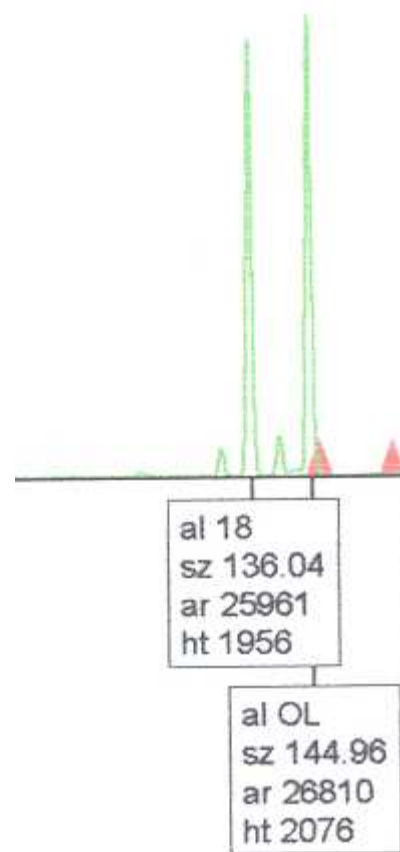


Dice: IDFL+POWP16
Electros: IDFL+PENTAs

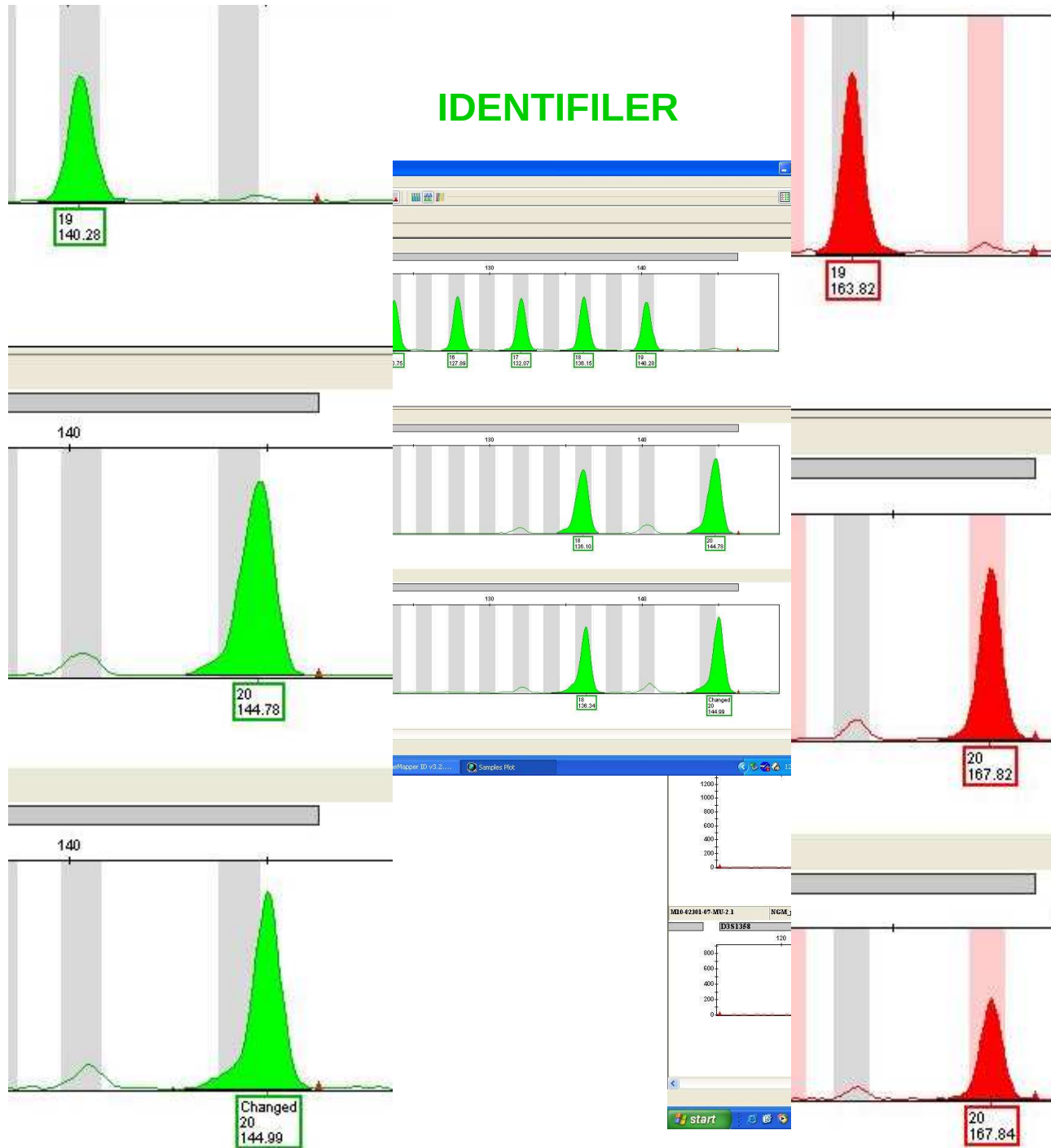
560126



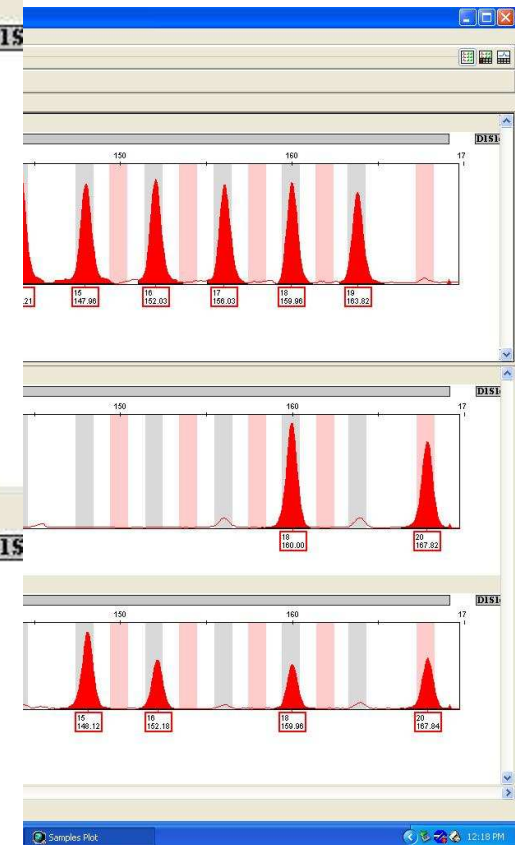
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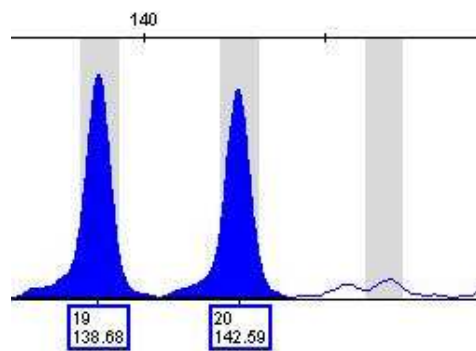


IDENTIFILER

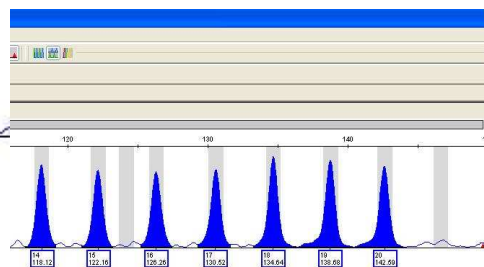


NGM

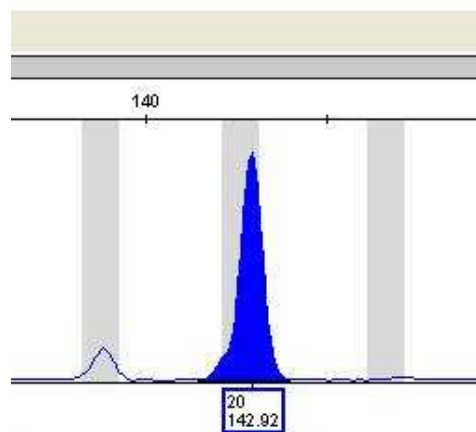
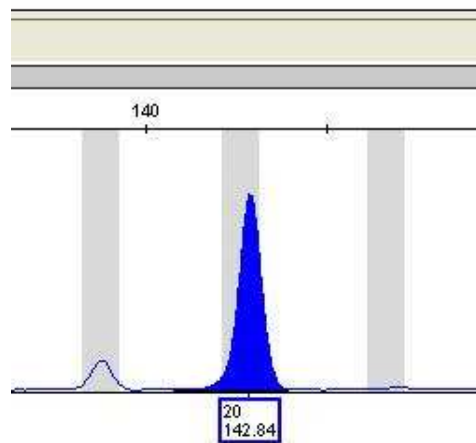
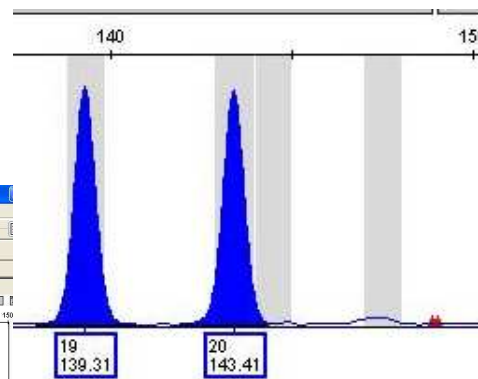




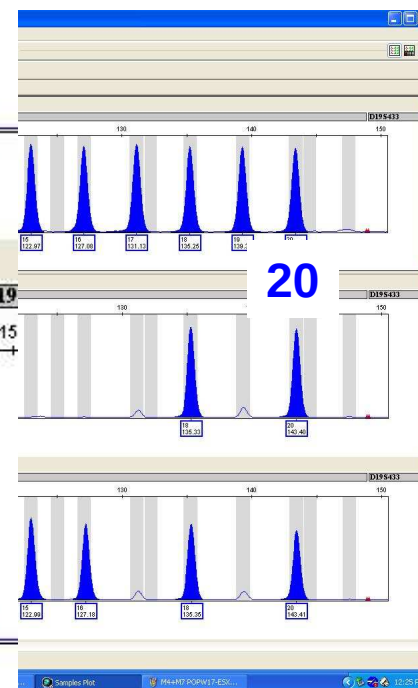
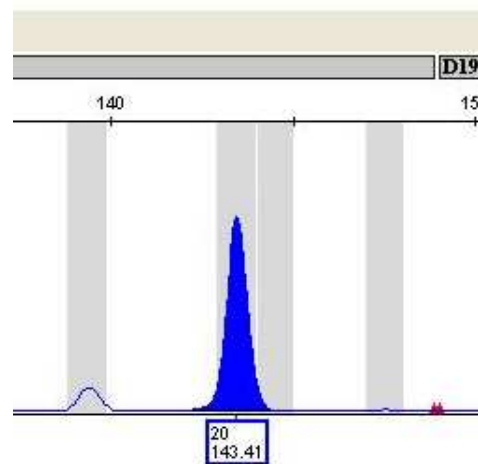
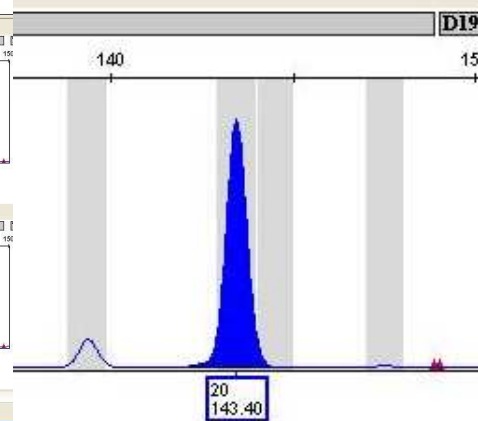
POWERPLEX 16



20



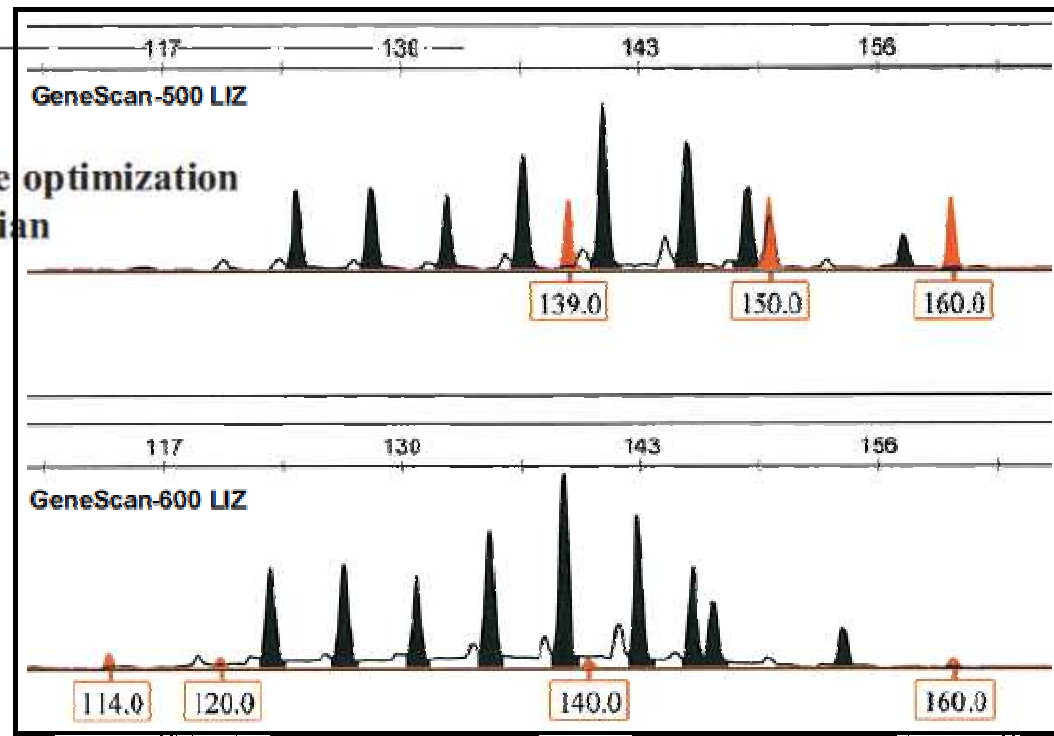
POWERPLEX 17



20

A GEP-ISFG collaborative study on the optimization of an X-STR decaplex: data on 15 Iberian and Latin American populations

Leonor Gusmão · Paula Sánchez-Diz · Cíntia Alves · Iva Gomes · María Teresa Zarrabeitia · Mariel Abovich · Ivannia Atmeilla · Cecilia Bobillo · Luisa Bravo · Juan Builes · Laura Cainé · Raquel Calvo · Elizeu Carvalho · Mónica Carvalho · Regina Cicarelli · Laura Catelli · Daniel Corach · Marta Espinoza · Óscar García · Marcelo Malaghini · Joyce Martins · Fátima Pinheiro · Maria João Porto · Eduardo Raimondi · Jose Antonio Riancho · Amelia Rodríguez · Anayanci Rodríguez · Belén Rodríguez Cardozo · Vicente Schneider · Sandra Silva · Celso Tavares · Ulises Toscanini · Carlos Vullo · Martin Whittle · Iñaki Yurrebaso · Ángel Carracedo · António Amorim



Allele	ESD	LIZ500		LIZ600	
		size	OSD	size	OSD
11		124.25		122.80	
12	4.00	128.34	4.09	126.75	3.95
13	4.00	132.46	4.12	130.79	4.04
14	4.00	136.60	4.14	134.73	3.94
15	4.00	140.94	4.34	138.76	4.03
16	4.00	145.49	4.55	142.73	3.97
16.3	3.00	148.88	3.39	145.76	3.03
17	1.00	150.11	1.23	146.83	1.07
18.3	7.00	157.34	7.23	153.96	7.13

ESD: Expected size differences between two consecutive alleles in the ladder

OSD: observed size differences between two consecutive alleles in the ladder

560116

En el análisis de la M4 se ha detectado en el marcador D3S1358 la presencia de un alelo fuera de la escala alélica utilizada (AmpFLSTR Identifiler PCR Kit). Se ha procedido a calcular el valor del posible alelo microvariable respecto al tamaño de los alelos 18 y 19:

$$\delta_1 = S_{18} - L_{18} = 136.15 - 136.19 = -0.04$$

$$\delta_2 = S_{19} - L_{19} = 144.86 - 140.31 = 4.55$$

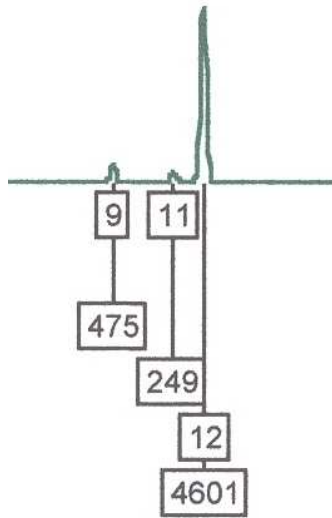
$$|\delta_1 - \delta_2| = |-0.04 - 4.55| = 4.59$$

Conclusión: el alelo detectado fuera de la escala alélica utilizada es el 20.

El análisis de esta muestra también se ha realizado utilizando el AmpFLSTRNGM PCR Kit corroborando nuestro resultado, pues la escala alélica utilizada para este kit contiene el alelo 20 y se le ha asignado este valor.

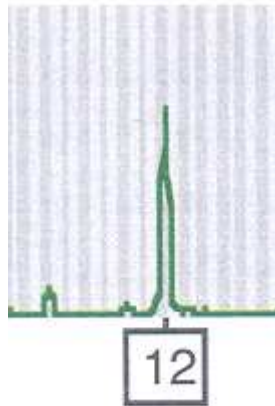
M6: M2+M3 (1:4)

560120



D13S317

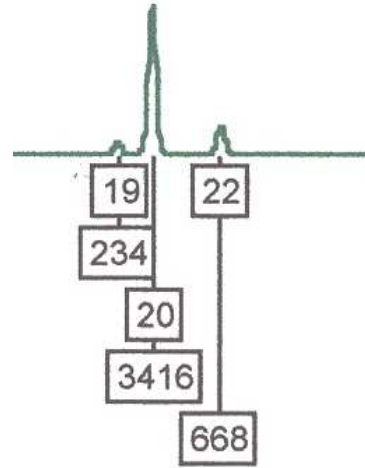
560131



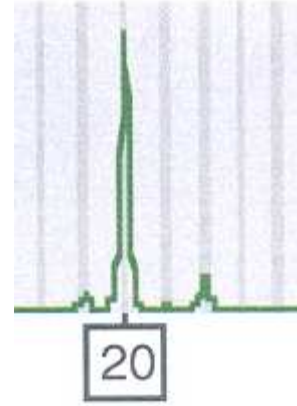
M2 9/12

M3 12

M6 9/12 (1:9)



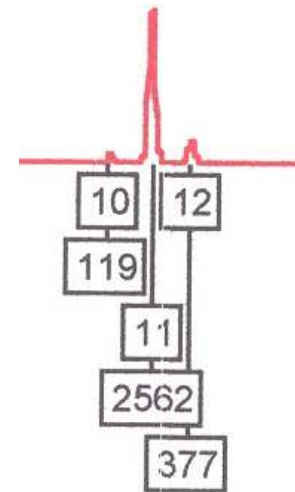
D2S1338



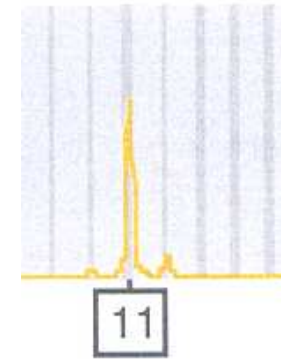
M2 20/22

M3 20

M6 20/22 (1:9)



D5S818



M2 11/12

M3 11

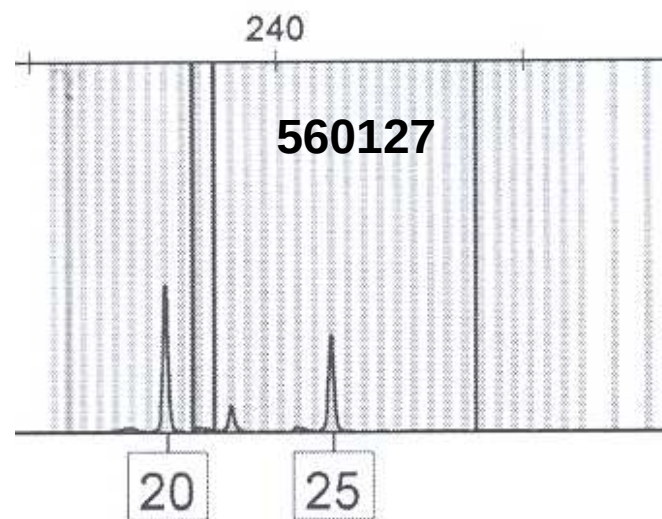
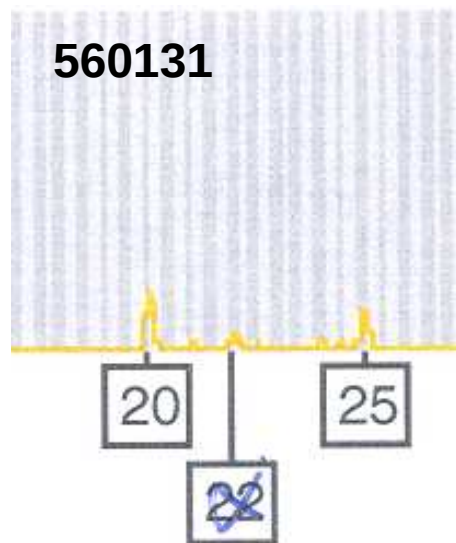
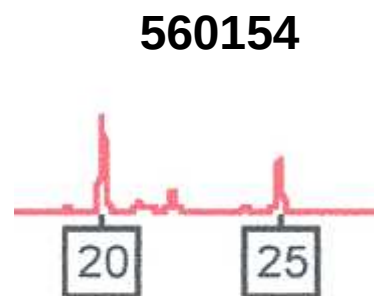
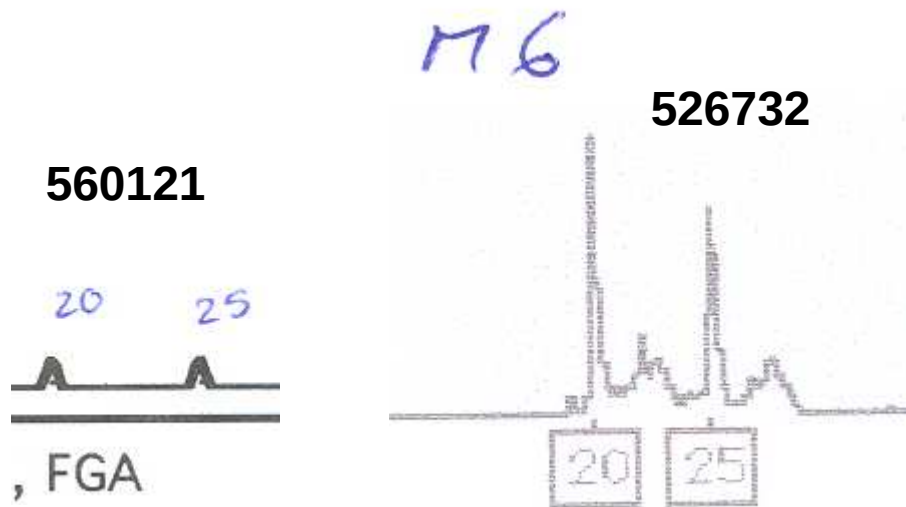
M6 11/12 (1:9)

M6 FGA

M2 20/22

M3 20/25

M6 20/22/25 (5:1:4)



Drop-out
Pull-up

560164 (17/60 discordancias)

560164

	M1	M2	M3	M4
CSF1PO	11 13	10 12/14	10/11	11/12
TH01	8 6/9.3	6 9.3	6/9.3	6/9.3
TPOX	8/11	8	8/11	8/11
VWA	17	14 19	14/19	14/15
FGA	23 25	22	20/25	19/21
D13S317	9/12	12	12	8/12
D16S539	10	8	8/9	12/13
D18S51	15/21	19	19	14/18
D19S433	14/15	12 14	12/14	12/13
D21S11	28/29	28	28/30	31.2
D2S1338	17 20	20/22	20	17 26
D3S1358	16	14 15	14/16	18 20
D5S818	11	7? 11/12	11	11
D7S820	8/12	10	10/11	10/12
D8S1179	14/15	13	13	13

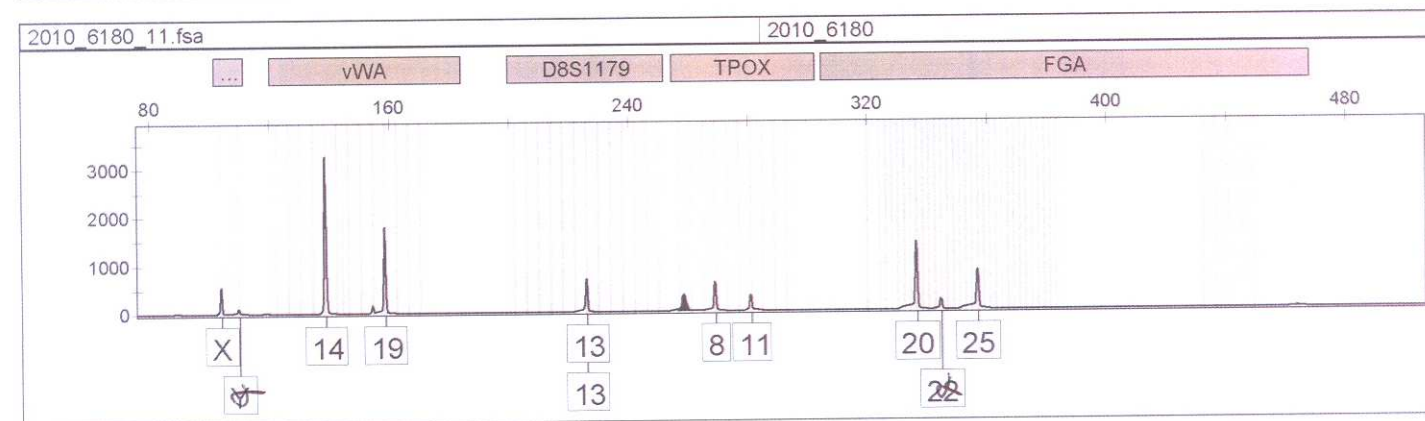
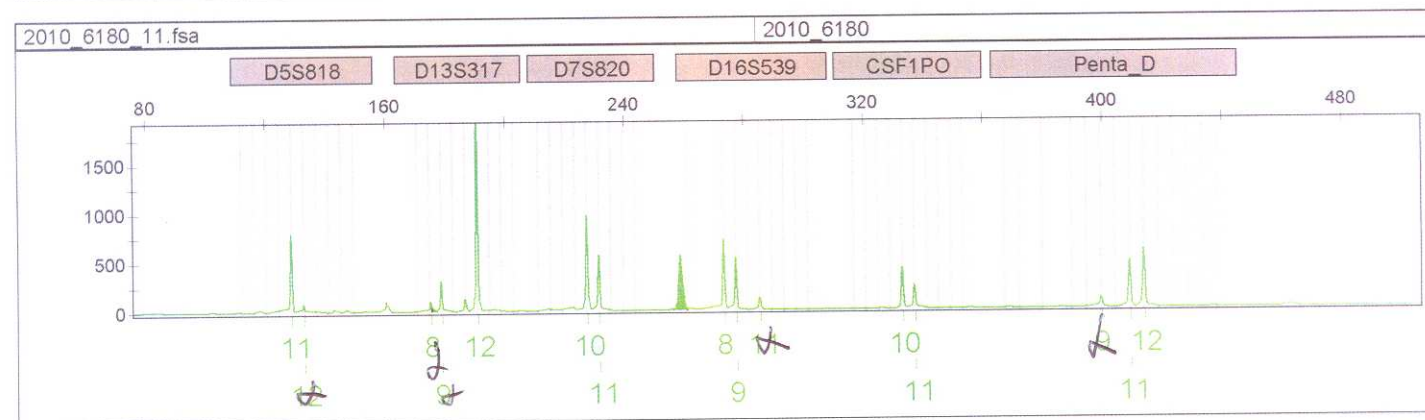
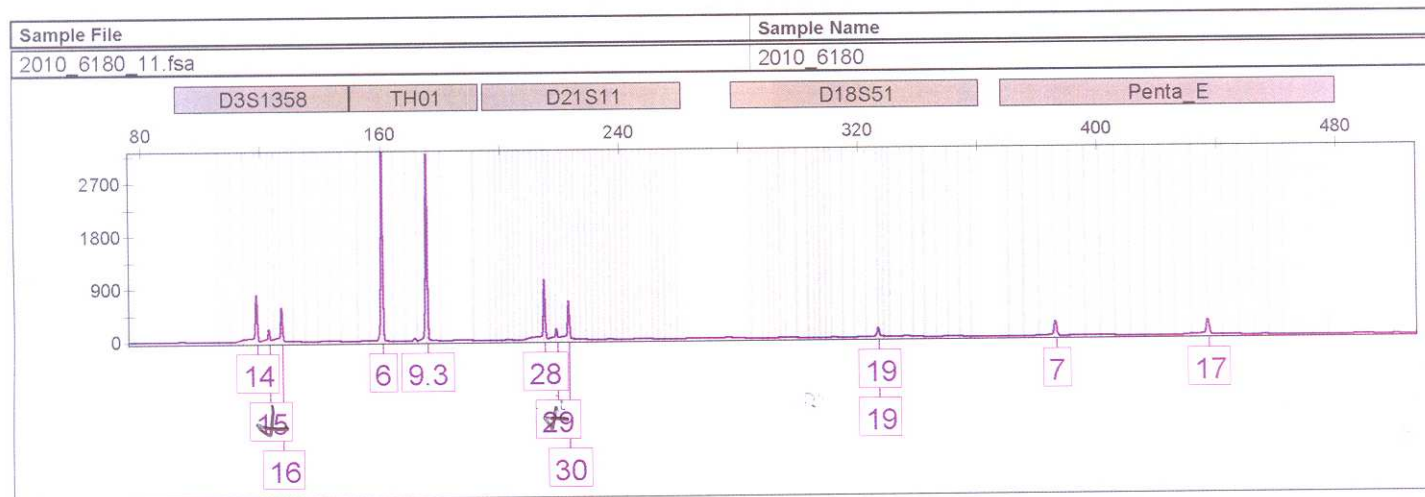
Refiere: Extracción QIAmp, purificación con Amicon, no cuantificación

Deduzco: Amplificación de diluciones 1/100

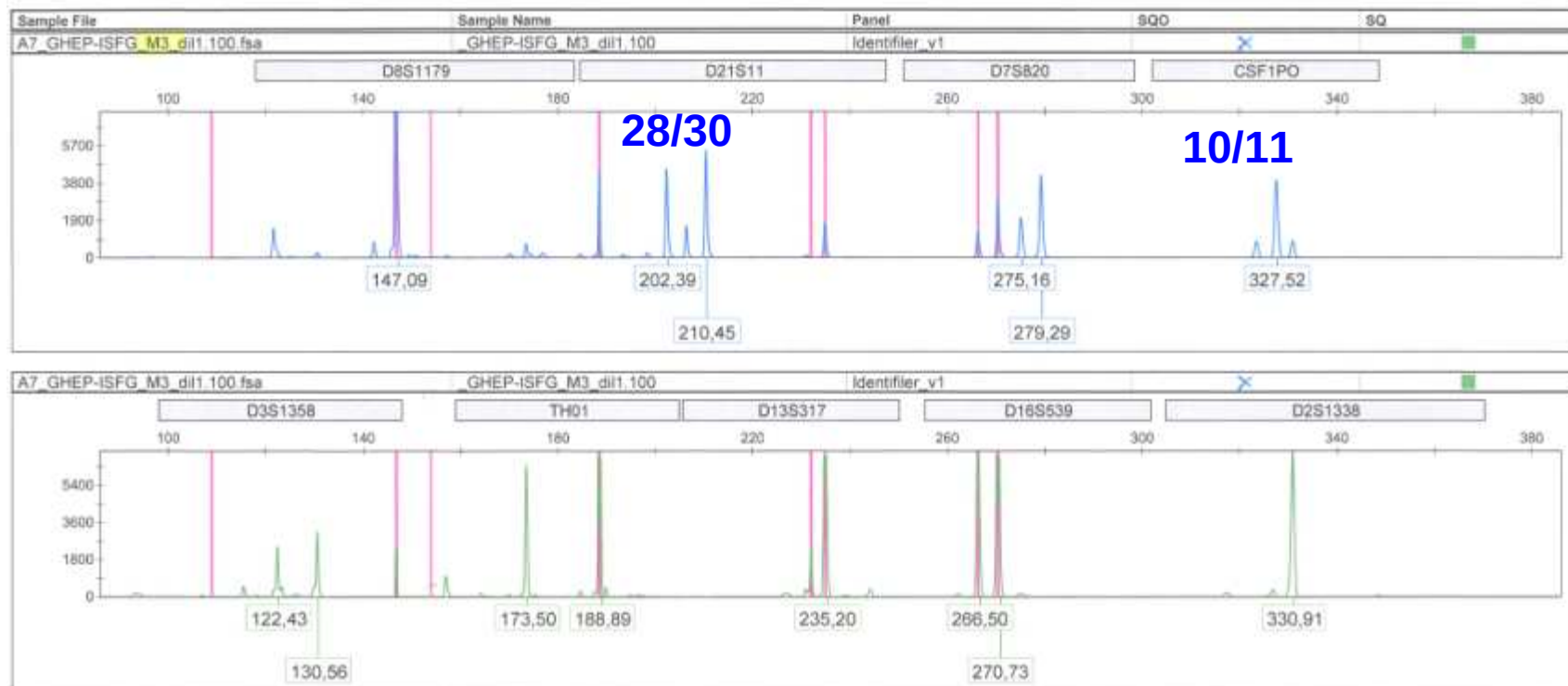
M6

560131

IDFL



560164 M3 IDFL



***Pull-up
Stutters
Asignación alélica manual?***

M7

Marcador	Genotipo	n	Genotipo	n	Genotipo	n	Genotipo	n	Nº determ
<i>ACTBP2_SE33</i>	17/21/28.2/32.2	4	15/17/19/21/28.2/32.2	4					8
<i>CSF1PO</i>	10/11/12	34	10/11/12/13	25	11/13	3			62
<i>D10S1248</i>	13/14/15/16	13			15/16	1			14
<i>D12S391</i>	15/19/20/21	9	15/18/18.3/19/20/21	3	18/18.3	1	Otro	2	15
<i>D13S317</i>	8/12	30	8/11/12	29	11	3			62
<i>D16S539</i>	11/12/13	60			12	3			63
<i>D18S51</i>	12/14/17/18	35	12/14/15/16/17/18	23	15/16	3	Otro	2	63
<i>D19S433</i>	12/13/15	36	12/13/13.2/15	20	13.2/15	3	Otro	1	60
<i>D1S1656</i>	15/16/16.3/17	10	15/15.3/16/16.3/17/17.3	5	15.3/17.3	1			16
<i>D21S11</i>	29/31.2	34	29/31.2/32.2	22	29/32.2	3	Otro	4	63
<i>D22S1045</i>	15/16	6	14/15/16	5	14	1	Otro	1	13
<i>D2S1338</i>	17/20/26	31	17/19/20/26	26	19/20	3			60
<i>D2S441</i>	10/11/14/15	14			14	1			15
<i>D3S1358</i>	15/16/18/20	55			15/18	3	Otro	5	63
<i>D5S818</i>	10/11/12	58			12	3	Otro	1	62
<i>D7S820</i>	9/10/12	59			10	3			62
<i>D8S1179</i>	12/13	33	11/12/13/14	25	11/14	3	Otro	2	63
<i>F13A01</i>	5/6/7/13	7	3.2/5/6/7/8/13	2			Otro	2	11
<i>F13B</i>	8/9/10	8					Otro	1	9
<i>FES_FPS</i>	11/12	8	10/11/12	2					10
<i>FGA</i>	19/21/25	35	19/20/21/25	24	20/21	3	Otro	1	63
<i>LPL</i>	9/10/11/12	7					Otro	2	9
<i>Penta_D</i>	9	22	9/10/11	11	10/11	2	Otro	1	36
<i>Penta_E</i>	5/8/12	22	5/8/11/12	12	5/11	2			36
<i>TH01</i>	6/7/9/9.3	56			9/9.3	3	Otro	2	61
<i>TPOX</i>	8/9/11	59			9/11	3			62
<i>VWA</i>	15/17	32	15/17/18	27	18	3	Otro	1	63