

REPORT OF THE 52nd UCLA INTERNATIONAL KIR EXCHANGE

APRIL 14, 2021

KIR 213-218

For the 52nd KIR Exchange, 6 DNA samples (KDNA#213 - 218) were shipped to 66 laboratories worldwide. KIR typing results were received from 64 of the laboratories.

The results for the 52nd KIR Exchange are summarized in Table 1 and individual laboratory results reported for each DNA sample are provided in

Tables 2 - 7. Subtyping results for 2DL2, 2DL4, 2DL5, 3DL1, 2DS1, 2DS4, and 3DP1 loci were reported by some laboratories. The subtypes for 2DS4 and 3DP1 are denoted as FULL or DEL. Discrepant results from consensus are italicized in tables 1 - 7. Discrepancies at the allele level are not italicized.

KDNA # 213: KIR2DL1-2DL2-2DL3-2DL4-2DL5B-3DL1-3DL2-3DL3-2DS1-2DS2-2DS4DEL-2DS5-2DP1-3DP1DEL was the consensus KIR type for this sample from a Black donor. Several discrepancies were reported, with 1 lab reporting 2DL3 as negative, 1 lab reporting 2DL5 as negative, and 1 lab reporting 2DS4 as negative instead of positive.

Arnold and Sortino commented on the unusual haplotype present in this sample in which 2DS1 was present in the absence of 3DS1. Falco also made a similar observation, noting, "Most likely this donor has one CenA-TelA haplotype and one contracted B haplotype missing the 7 KIR genes between 2DL5B and 2DS5 (namely 2DS3-2DP1-2DL1-3DP1-2DL4-3DS1-2DL5A)."

Predicted haplotypes:

Sortino - Cen-A/Cen-B + Tel-A/Tel-B

KDNA # 214: KIR2DL1-2DL2-2DL3-2DL4-2DL5A&B-3DL1-3DL2-3DL3-3DS1-2DS1-2DS2-2DS3-2DS4DEL-2DS5-2DP1-3DP1DEL was the consensus type for this sample from a donor of unknown ethnicity. Two labs reported discrepant results. One lab reported 2DL3 as negative instead of positive and the other reported 3DS1 and 2DS3 as negative instead of positive.

Predicted haplotypes:

Falco - CenA/CenB1 and TelA/TelB1
Sortino - Cen-A/Cen-B + Tel-A/Tel-B

KDNA # 215: KIR2DL2-2DL4-2DL5A-3DL1-3DL2-3DL3-3DS1-2DS1-2DS2-2DS4DEL-2DS5-3DP1FULL was the consensus type for this sample from a Hispanic donor. A number of labs reported discrepant results for this sample, including 3 labs reporting 2DL1 as positive instead of negative. One lab, Gendzekhadze, noted that "SSP looks false positive for 2DL1." One lab reported 2DL3 as positive and another lab reported 2DL5 as negative. Two labs reported 2DP1 as positive, and 1 lab reported 3DP1 as negative.

Falco commented that this sample has "KIR genotype B/X, solved into B/B analyzing centromeric and telomeric regions. Indeed, this donor has 2 CenB2, one TelA and one TelB1 region."

Predicted haplotypes:

Arnold - "BA1" and "Bdel"
Sortino - Cen-B2/Cen-B2 + Tel-A/Tel-B1

KDNA # 216: KIR2DL1-2DL3-2DL4-3DL1-3DL2-3DL3-2DS2-2DS4FULL-2DP1-3DP1DEL was the consensus type for this sample from a Black donor. Only 2 discrepancies were reported in this sample, in which 1 lab reported 2DL2 as positive and 1 lab reported 2DS3 as positive instead of negative.

Arnold and Sortino commented on the unusual haplotype present in this sample noting 2DS2 was present while 2DL2 was absent. Falco provided additional comments on the unusual haplotype: "This donor has one CenA, one peculiar CenB 2DS2pos-2DL2neg-2DL5Bneg-2DS3/S5neg and 2 Tel-A regions."

Predicted haplotypes:

Sortino - Cen-A/Cen-B + Tel-A/Tel-A

KDNA # 217: KIR2DL1-2DL2-2DL3-2DL4-2DL5B-3DL1-3DL2-3DL3-2DS4FULL&DEL-2DS5-2DP1-3DP1DEL was the consensus type for this sample from a Black donor. Three labs reported this sample as negative for 2DL2 and another reported 2DL3 as negative instead of positive.

Arnold and Sortino commented on the unusual haplotype present in this sample, in which 2DL2 is present in the absence of 2DS2. Falco shared similar observations explaining the sample “has one CenA, one peculiar CenB 2DS2neg-2DL2pos-2DL5Bpos-2DS5pos and 2 Tel-A regions. A similar CenB region has been described by Nakimuli and Coworkers analyzing African population (PNAS 2015).”

Predicted haplotypes:

Sortino - Cen-A/Cen-B + Tel-A/Tel-A

KDNA # 218: KIR2DL1-2DL2-2DL4-3DL1-3DL2-3DL3-2DS2-2DS4FULL&DEL-2DP1?-3DP1FULL&DEL was the reported consensus type for this sample from an Asian donor. Interestingly, no consensus was achieved for 2DP1, as 34 labs reported it as negative and 27 labs reported it as positive. Two labs kindly shared their findings regarding the ambiguity:

Fernandez-Vina: “For sample 218 two different methods were used for KIR content typing; the results were discrepant for 2DP1; SSP typing (LinkSeq was Positive; one well) and SSO typing was negative (three beads.)”

Fuessel: “For sample # 218 - gene 2DP1: NGS inhouse was positive for exon 4-9. Exon 3 was negative, but we obtained amplicons which matched to 2DL3 exon 3-sequences. Therefore we assume an hybrid/recombinant gene: 2DL3-2DP1. Olerup SSP was negative because the SSP primer targets exon 3 of 2DP1.”

Due to the lack of consensus for 2DP1, the gene was not included in the grading analysis.

Falco commented on the unusual haplotype present in this sample, noting that it is “characterized by: one CenB2 region, one peculiar CenB region including 2DS2, 2DL2 and 2DL1 but missing 2DL5B, 2DS3 and 2DP1 + 2 TelA regions. A similar CenB region has been described by Nakimuli and Coworkers analyzing African population (PNAS 2015).”

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Table 1. Summary of the 52nd KIR Exchange (KDNA #213-218)

KIR Ex.	DNA	# Labs	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1
#52	213	64	POS[64]	POS[63] *001[1]	POS[63] <i>NEG[1]</i>	POS[61] *007[1] DEL[1] NT[1]	POS[51] B[12] <i>NEG[1]</i>	POS[63] *001[1]	POS[64]	POS[63] NT[1]	NEG[64]	POS[62] *002[1] *002-*009[1]	POS[64]	NEG[64]	POS[42] DEL[19] *003[1] FULL, DEL[1] <i>NEG[1]</i>	POS[64]	POS[62] NT[2]	POS[49] DEL[11] FULL[2] NT[2]
	214	64	POS[64]	POS[63] *001[1]	POS[63] <i>NEG[1]</i>	POS[62] DEL[1] NT[1]	POS[54] A,B[8] B[1]	POS[63] *001[1]	POS[64]	POS[63] NT[1]	POS[63] <i>NEG[1]</i>	POS[62] *002[1] *002-*009[1]	POS[64]	POS[63] <i>NEG[1]</i>	POS[43] DEL[20] *003[1]	POS[64]	POS[62] NT[2]	POS[49] DEL[11] FULL[2] NT[2]
	215	64	NEG[61] <i>POS[3]</i>	POS[63] *001[1]	NEG[63] <i>POS[1]</i>	POS[62] DEL[1] NT[1]	POS[54] A[8] A,B[1] <i>NEG[1]</i>	POS[64]	POS[64]	POS[63] NT[1]	POS[64]	POS[62] *002[1] *002-*009[1]	POS[64]	NEG[64]	POS[35] DEL[27] *003[1] FULL,DEL[1]	POS[64]	NEG[60] <i>POS[2]</i> NT[2]	POS[49] FULL[11] DEL[1] <i>NEG[1]</i> NT[2]
	216	64	POS[64]	NEG[63] <i>POS[1]</i>	POS[64]	POS[62] DEL[1] NT[1]	NEG[64]	POS[63] *001[1]	POS[64]	POS[63] NT[1]	NEG[64]	NEG[64]	POS[64]	NEG[63] <i>POS[1]</i>	POS[45] FULL[18] FULL, DEL[1]	NEG[64]	POS[62] NT[2]	POS[47] DEL[12] *003[1] FULL[2] NT[2]
	217	64	POS[63] NT[1]	POS[59] *001[1] <i>NEG[3]</i> NT[1]	POS[62] NT[1] <i>NEG[1]</i>	POS[62] NT[2]	POS[50] B[13] NT[1]	POS[62] *001[1] NT[1]	POS[63] NT[1]	POS[62] NT[2]	NEG[63] NT[1]	NEG[63] NT[1]	NEG[63] NT[1]	NEG[63] NT[1]	POS[46] FULL, DEL[17] NT[1]	POS[63] NT[1]	POS[62] NT[2]	POS[48] DEL[12] FULL[2] NT[2]
	218	64	POS[64]	POS[63] *001[1]	NEG[62] <i>POS[2]</i>	POS[62] NORM[1] NT[1]	NEG[63] Null[1]	POS[63] *001[1]	POS[64]	POS[63] NT[1]	NEG[64]	NEG[64]	POS[64]	NEG[64]	POS[47] FULL, DEL[17]	NEG[64]	NEG[34] POS[27] NT[3]	POS[50] FULL, DEL[12] NT[2]

[] - number of labs reporting allele assignment/POS/NEG/NT
 POS - Presence of gene
 NEG - Absence of gene
 NT - Not typed
 italics - assignment different from consensus
 Subtypes of 2DS4 and 3DP1 are designated as FULL and/or DEL

Methods
 NGS - Next-generation sequencing
 RT-PCR - Real-time PCR
 SSO - Sequence-specific oligonucleotide probe based typing
 SSP - Sequence-specific primer-based typing
 SBT - Sequencing-based typing

Table 2. KDNA #213 (Black)

CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[64]	POS[64]	POS[63]	POS[63]	POS[51]+ B[12]	POS[64]	POS[64]	POS[63]	NEG[64]	POS[64]	POS[64]	NEG[64]	POS[43]+ DEL[20]	POS[64]	POS[62]	POS[51]+ DEL[11]	
124	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	NT	NT	SSP
234	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
278	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
713	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	RT-PCR
733	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP NGS
762	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP
792	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
1108	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	POS	SSO
1426	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP RT-PCR
1466	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	RT-PCR
1694	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
1778	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
3224	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	NEG	POS	POS	POS	SSO
3410	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
3632	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	FULL, DEL	POS	POS	POS	SSP
3753	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP SSO
3798	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
3966	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
4021	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
4251	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
4337	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
4345	POS	POS	POS	2DL4 DEL	2DL5 (GROUP 1)	POS	POS	POS	NEG	POS	POS	NEG	SDS4 (DEL-22P)	POS	POS	3DP1 NORM	
4985	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
5000	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP SSO
5133	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	RT-PCR
5142	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	FULL	SSP
5219	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
5282	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
5451	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
5462	POS	POS	POS	POS	B	POS	POS	POS	NEG	*002- *009	POS	NEG	DEL	POS	POS	DEL	SSP RT-PCR
5488	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
8022	POS	POS	NEG	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP
8028	POS	POS	POS	NT	POS	POS	POS	NT	NEG	POS	POS	NEG	POS	POS	NT	NT	SSP
8030	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
8035	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
8038	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	POS	SSO
8047	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
8050	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP
8053	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSO RT-PCR

Table 2. KDNA #213 (Black)

CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[64]	POS[64]	POS[63]	POS[63]	POS[51]+ B[12]	POS[64]	POS[64]	POS[63]	NEG[64]	POS[64]	POS[64]	NEG[64]	POS[43]+ DEL[20]	POS[64]	POS[62]	POS[51]+ DEL[11]	
8060	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
8069	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	POS	SSP
8071	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
8073	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	RT-PCR
8074	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	POS	SSO
8079	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
8080	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	RT-PCR
8083	POS	*001	POS	*007	NEG	*001	POS	POS	NEG	*002	POS	NEG	*003	POS	POS	POS	SSP
8084	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	RT-PCR
8085	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	NGS
8086	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
8090	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP SSO
8092	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	RT-PCR
8094	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
8098	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL EX.5 ALL EX.4	POS	POS	POS	
8104	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP
8105	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	NGS
8106	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP
8110	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	
8113	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
8118	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
8122	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	RT-PCR
8124	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
8126	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	POS	SSP
8127	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	RT-PCR

Table 3. KDNA #214 (Unknown)																	
CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[64]	POS[64]	POS[63]	POS[63]	POS[56]+ A,B[8]	POS[64]	POS[64]	POS[63]	POS[63]	POS[64]	POS[64]	POS[63]	POS[43]+ DEL[21]	POS[64]	POS[62]	POS[51]+ DEL[11]	
124	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NT	NT	SSP
234	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
278	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
713	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	RT-PCR
733	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP NGS
762	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
792	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
1108	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	POS	SSO
1426	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP RT-PCR
1466	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	RT-PCR
1694	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
1778	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
3224	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
3410	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
3632	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	POS - DEL	POS	POS	POS	SSP
3753	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP SSO
3798	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
3966	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
4021	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
4251	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
4337	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
4345	POS	POS	POS	2DL4 DEL	2DL5ALL, 2DL5 (GROUP 1), 2DL5NULL	POS	POS	POS	NEG	POS	POS	NEG	SDS4 (DEL-22P)	POS	POS	3DP1 NORM	
4985	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
5000	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP SSO
5133	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	RT-PCR
5142	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	FULL	SSP
5219	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
5282	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
5451	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
5462	POS	POS	POS	POS	A, B	POS	POS	POS	POS	*002- *009	POS	POS	DEL	POS	POS	DEL	SSP RT-PCR
5488	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8022	POS	POS	NEG	POS	A, B	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
8028	POS	POS	POS	NT	POS	POS	POS	NT	POS	POS	POS	POS	POS	POS	NT	NT	SSP
8030	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8035	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8038	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	POS	SSO
8047	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8050	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP

Table 3. KDNA #214 (Unknown)

CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[64]	POS[64]	POS[63]	POS[63]	POS[56]+ A,B[8]	POS[64]	POS[64]	POS[63]	POS[63]	POS[64]	POS[64]	POS[63]	POS[43]+ DEL[21]	POS[64]	POS[62]	POS[51]+ DEL[11]	
8053	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSO RT-PCR
8060	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8069	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	POS	SSP
8071	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8073	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	RT-PCR
8074	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	POS	SSO
8079	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8080	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	RT-PCR
8083	POS	*001	POS	POS	B	*001	POS	POS	POS	*002	POS	POS	*003	POS	POS	POS	SSP
8084	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	RT-PCR
8085	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NGS
8086	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8090	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP SSO
8092	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	RT-PCR
8094	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8098	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL EX.5 ALL EX.4	POS	POS	POS	
8104	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
8105	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NGS
8106	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
8110	POS	POS	POS	POS	A,B?	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	
8113	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8118	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8122	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	RT-PCR
8124	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8126	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	POS	SSP
8127	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	RT-PCR

Table 4. KDNA #215 (Hispanic)

CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	NEG[61]	POS[64]	NEG[63]	POS[63]	POS[55]+ A[8]	POS[64]	POS[64]	POS[63]	POS[64]	POS[64]	POS[64]	NEG[64]	POS[36]+ DEL[28]	POS[64]	NEG[60]	POS[50]+ FULL[11]	
124	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NT	NT	SSP
234	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP
278	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSO
713	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	RT-PCR
733	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP NGS
762	NEG	POS	NEG	POS	A	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	FULL	SSP
792	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP
1108	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	POS	SSO
1426	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	FULL	SSP RT-PCR
1466	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	RT-PCR
1694	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP
1778	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSO
3224	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSO
3410	NEG	POS	NEG	POS	A	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP
3632	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	POS	FULL	SSP
3753	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP SSO
3798	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP
3966	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP
4021	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP
4251	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSO
4337	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	POS	SSP
4345	NEG	POS	NEG	2DL4 DEL, 2DL4 NORM	2DL5ALL, 2DL5 EXPR., 2DL5 (GROUP1)	POS	POS	POS	POS	POS	POS	NEG	SDS4 (DEL-22P)	POS	NEG	NEG	
4985	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP
5000	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP SSO
5133	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	FULL	RT-PCR
5142	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	DEL	SSP
5219	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSO
5282	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP
5451	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSO
5462	NEG	POS	NEG	POS	A	POS	POS	POS	POS	*002.*009	POS	NEG	DEL	POS	NEG	FULL	SSP RT-PCR
5488	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSO
8022	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	FULL	SSP
8028	NEG	POS	NEG	NT	POS	POS	POS	NT	POS	POS	POS	NEG	POS	POS	NT	NT	SSP
8030	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSO
8035	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSO
8038	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	POS	SSO
8047	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP
8050	NEG	POS	NEG	POS	A	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	FULL	SSP
8053	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	POS	SSO RT-PCR

Table 4. KDNA #215 (Hispanic)

CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	NEG[61]	POS[64]	NEG[63]	POS[63]	POS[55]+ A[8]	POS[64]	POS[64]	POS[63]	POS[64]	POS[64]	POS[64]	NEG[64]	POS[36]+ DEL[28]	POS[64]	NEG[60]	POS[50]+ FULL[11]	
8060	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSO
8069	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	POS	SSP
8071	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSO
8073	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	FULL	RT-PCR
8074	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	POS	SSO
8079	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSO
8080	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	RT-PCR
8083	NEG	*001	NEG	POS	NEG	POS	POS	POS	POS	*002	POS	NEG	*003	POS	NEG	POS	SSP
8084	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	RT-PCR
8085	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	NGS
8086	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP
8090	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP SSO
8092	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	RT-PCR
8094	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSO
8098	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	DEL EX.5 ALL EX.4	POS	NEG	POS	
8104	NEG	POS	NEG	POS	A	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	FULL	SSP
8105	NEG	POS	NEG	POS	A	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	NGS
8106	NEG	POS	NEG	POS	A	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	FULL	SSP
8110	NEG	POS	NEG	POS	A, B?	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	FULL	
8113	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP
8118	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSO
8122	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	RT-PCR
8124	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	SSP
8126	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	NEG	POS	SSP
8127	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	RT-PCR

Table 5. KDNA #216 (Black)

CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[64]	NEG[63]	POS[64]	POS[63]	NEG[64]	POS[64]	POS[64]	POS[63]	NEG[64]	NEG[64]	POS[64]	NEG[63]	POS[46] FULL[18]	NEG[64]	POS[62]	POS[49] DEL[13]	
124	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NT	NT	SSP
234	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
278	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
713	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	RT-PCR
733	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP NGS
762	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	DEL	SSP
792	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
1108	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	POS	SSO
1426	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	DEL	SSP RT-PCR
1466	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	RT-PCR
1694	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
1778	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
3224	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
3410	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
3632	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	DEL	SSP
3753	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP SSO
3798	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
3966	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
4021	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
4251	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
4337	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
4345	POS	NEG	POS	2DL4 NORM	NEG	POS	POS	POS	NEG	NEG	POS	NEG	2DS4 NORM	NEG	POS	3DP1 NORM	
4985	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
5000	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP SSO
5133	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	DEL	RT-PCR
5142	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	FULL	SSP
5219	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
5282	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
5451	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
5462	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	DEL	SSP RT-PCR
5488	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
8022	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	POS	FULL	NEG	POS	DEL	SSP
8028	POS	NEG	POS	NT	NEG	POS	POS	NT	NEG	NEG	POS	NEG	POS	NEG	NT	NT	SSP
8030	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
8035	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
8038	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	POS	SSO
8047	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
8050	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	DEL	SSP
8053	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	DEL	SSO RT-PCR
8060	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
8069	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	POS	POS	SSP
8071	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO

Table 5. KDNA #216 (Black)

CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[64]	NEG[63]	POS[64]	POS[63]	NEG[64]	POS[64]	POS[64]	POS[63]	NEG[64]	NEG[64]	POS[64]	NEG[63]	POS[46] FULL[18]	NEG[64]	POS[62]	POS[49] DEL[13]	
8073	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	DEL	RT-PCR
8074	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	POS	SSO
8079	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
8080	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	RT-PCR
8083	POS	NEG	POS	POS	NEG	*001	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	*003	SSP
8084	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	RT-PCR
8085	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	NGS
8086	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
8090	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP SSO
8092	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	RT-PCR
8094	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
8098	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	ALL EX.4 FULL EX.5	NEG	POS	POS	
8104	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	DEL	SSP
8105	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	NGS
8106	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	DEL	SSP
8110	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	DEL	
8113	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
8118	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
8122	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	RT-PCR
8124	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
8126	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	POS	POS	SSP
8127	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	RT-PCR

Table 6. KDNA #217 (Black)

CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[63]	POS[60]	POS[62]	POS[62]	POS[50]+ B[13]	POS[63]	POS[63]	POS[62]	NEG[63]	NEG[63]	NEG[63]	NEG[63]	POS[46]+ FULL, DEL[17]	POS[63]	POS[62]	POS[50]+ DEL[12]	
124	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	SSP
234	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
278	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSO
713	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	RT-PCR
733	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP NGS
762	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	DEL	SSP
792	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
1108	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	POS	SSO
1426	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	DEL	SSP RT-PCR
1466	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	RT-PCR
1694	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
1778	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSO
3224	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSO
3410	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
3632	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	DEL	SSP
3753	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP SSO
3798	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
3966	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
4021	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
4251	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSO
4337	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
4345	POS	NEG	POS	2DL4 NORM	2DL5 ALL, 2DL5 (GROUP 1)	POS	POS	POS	NEG	NEG	NEG	NEG	2DS4 NORM, 2DS4 (DEL-22P)	POS	POS	3DP1 NORM	
4985	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
5000	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP SSO
5133	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	DEL	RT-PCR
5142	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	FULL	SSP
5219	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSO
5282	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
5451	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSO
5462	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	DEL	SSP RT-PCR
5488	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSO
8022	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	DEL	SSP
8028	POS	POS	POS	NT	POS	POS	POS	NT	NEG	NEG	NEG	NEG	POS	POS	NT	NT	SSP
8030	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSO
8035	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSO
8038	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	POS	SSO
8047	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
8050	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	DEL	SSP
8053	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	DEL	SSO RT-PCR

Table 6. KDNA #217 (Black)

CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[63]	POS[60]	POS[62]	POS[62]	POS[50]+ B[13]	POS[63]	POS[63]	POS[62]	NEG[63]	NEG[63]	NEG[63]	NEG[63]	POS[46]+ FULL, DEL[17]	POS[63]	POS[62]	POS[50]+ DEL[12]	
8060	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSO
8069	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	POS	SSP
8071	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSO
8073	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	DEL	RT-PCR
8074	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	POS	SSO
8079	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSO
8080	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	RT-PCR
8083	POS	*001	POS	POS	B	*001	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
8084	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	RT-PCR
8085	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	NGS
8086	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
8090	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP SSO
8092	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	RT-PCR
8094	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSO
8098	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	
8104	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	DEL	SSP
8105	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	NGS
8106	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	DEL	SSP
8110	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	DEL	
8113	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
8118	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSO
8122	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	RT-PCR
8124	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	SSP
8126	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	POS	POS	POS	SSP
8127	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	POS	POS	POS	RT-PCR

Table 7. KDNA #218 (Asian)

CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[64]	POS[64]	NEG[62]	POS[63]	NEG[63]	POS[64]	POS[64]	POS[63]	NEG[64]	NEG[64]	POS[64]	NEG[64]	POS[47]+ FULL, DEL[17]	NEG[64]	NEG[34] POS[27]	POS[50]+ FULL, DEL[12]	
124	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NT	NT	SSP
234	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
278	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
713	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	RT-PCR
733	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP NGS
762	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
792	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
1108	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	POS	POS	SSO
1426	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	POS	FULL, DEL	SSP RT-PCR
1466	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	RT-PCR
1694	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
1778	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
3224	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
3410	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
3632	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	FULL, DEL	SSP
3753	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP SSO
3798	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
3966	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
4021	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
4251	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
4337	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
4345	POS	POS	POS	2DL4 NORM	2DL5 NULL	POS	POS	POS	NEG	NEG	POS	NEG	2DS4 NORM, 2DS4 (DEL-22BP)	NEG	POS	3DP1 NORM, 3DP1 VARIANT	
4985	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
5000	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP SSO
5133	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	POS	FULL, DEL	RT-PCR
5142	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	POS	FULL, DEL	SSP
5219	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
5282	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
5451	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
5462	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	FULL, DEL	SSP RT-PCR
5488	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8022	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	FULL, DEL	SSP
8028	POS	POS	NEG	NT	NEG	POS	POS	NT	NEG	NEG	POS	NEG	POS	NEG	NT	NT	SSP
8030	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8035	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8038	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	POS	SSO
8047	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8050	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	FULL, DEL	SSP
8053	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NT	POS	SSO RT-PCR

Table 7. KDNA #218 (Asian)

CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[64]	POS[64]	NEG[62]	POS[63]	NEG[63]	POS[64]	POS[64]	POS[63]	NEG[64]	NEG[64]	POS[64]	NEG[64]	POS[47]+ FULL, DEL[17]	NEG[64]	NEG[34] POS[27]	POS[50]+ FULL, DEL[12]	
8060	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8069	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	POS	SSP
8071	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
8073	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	POS	FULL, DEL	RT-PCR
8074	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	POS	SSO
8079	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
8080	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	RT-PCR
8083	POS	*001	NEG	POS	NEG	*001	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8084	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	RT-PCR
8085	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	NGS
8086	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
8090	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP SSO
8092	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	RT-PCR
8094	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8098	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	
8104	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	FULL, DEL	SSP
8105	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	NGS
8106	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	FULL, DEL	SSP
8110	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	POS	FULL, DEL	
8113	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8118	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
8122	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	RT-PCR
8124	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSP
8126	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	POS	POS	SSP
8127	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	RT-PCR

Table 8. Participating Centers						
Name			Institution	City	State	Country
Alquist	Caroline	Dr	Hoxworth Blood Center	Cincinnati	OH	
Ameen	Reem	Dr	Health Science Center, Kuwait University	Jabriya		Kuwait
Arnold	Paula	PhD	St Jude Children's Research Hosp	Memphis	TN	
Askar	Medhat	MD, PhD	Baylor University Medical Center	Dallas	TX	
Bangol	Barbara	Dr.	MVZ Martinsried GmbH	Martinsried		Germany
Bengtsson	Mats	MD	Uppsala University Hospital	Uppsala		Sweden
Bettinotti	Maria	PhD	Johns Hopkins University	Baltimore	MD	
Blasczyk	Rainer	Prof Dr	Transplantationsimmunologie OE 8350	Hannover		Germany
Blouin	Amanda	MD, PhD	Memorial Sloan Kettering Cancer Center	New York	NY	
Cao	Kai	Dr	UT MD Anderson Cancer Center	Houston	TX	
Carrington	Mary	Dr	Frederick Natl Lab for Cancer Research, Nat'l Cancer Institute	Frederick	MD	
Cereb	Nezih	Dr	Histogenetics	Ossining	NY	
Chan	Marieta	Dr	Health Sciences Authority			Singapore
Chang	Yenhui		Beijing BoFuRui Medical Laboratory Co. Ltd.	Beijing		China
Chang	Yenhui	Dr	TBG Biotechnology Corp.	New Taipei City		Taiwan, Province Of China
Charlton	Ronald	PhD	Cancer Care Manitoba	Winnipeg	MB	Canada
Chen	Dong Feng	PhD	Duke	Durham	NC	
Czerwinski	Pawel		Gyncentrum Fertility Clinic			Poland
Daniel	Dolly	Prof Dr	Christian Medical College & Hospital	Tamil Nadu		India
D'Orsogna	Lloyd	Dr	Path West Fiona Stanley Hospital	Murdoch		Australia
Du	Keming		Shanghai Tissuebank Medical Laboratory	Shanghai		China
Falco	Michela	PhD	Istituto Giannina Gaslini	Genoa		Italy
Fernandez-Vina	Marcelo	PhD	Stanford Blood Center	Palo Alto	CA	
Fischer	Gottfried	Dr	AKH-Blood Group Serology & Transfusion Medicine	Vienna		Austria
Freed	Brian M.	PhD, D(ABHI)	University of Colorado Denver, Anschutz Medical Campus	Aurora	CO	
Fuessel	Monika	PhD	DKMS Life Science Lab GmbH	Dresden		Germany
Furst	Daniel	PD Dr med	IKT Und Immunogenetik Ulm	Ulm		Germany
Gandhi	Manish	MD	Mayo Clinic	Rochester	MN	
Gebhart	Catherine	Dr	American Red Cross East Division	Dedham	MA	
Gendzekhadze	Keteven	PhD	City of Hope Medical Center	Duarte	CA	
Graff	Ralph J.	Dr	Saint Louis University Hospital	St Louis	MO	
He	Jun		First Affiliated Hospital of Soochow University	Suzhou, Jiangsu		China
Hedlund	Anna		Care Dx	Stockholm		Sweden
Huang	Yanping	MD, PhD	Thomas Jefferson Hospital	Philadelphia	PA	
Kanangat	Sivadasan	PhD	Rush University Medical Center	Chicago	IL	
Kashi	Zahra M.	Dr	Kashi Clinical Laboratories	Portland	OR	
Kim	Tai-Gyu	Prof	The Catholic University of Korea College of Med	Seoul		Korea, Republic Of
Kimball	Pam	PhD	VCU Health Systems	Richmond	VA	
Kwok	Janette	Dr	Queen Mary Hospital			Hong Kong
Maha	George	PhD	LabCorp	Burlington	NC	
Marsh	Steven	Prof	Anthony Nolan	London		United Kingdom

Table 8. Participating Centers						
Name			Institution	City	State	Country
Monos	Dimitri	PhD	Children's Hospital of Philadelphia	Philadelphia	PA	
Morris	Gerald	MD, PhD	UCSD	San Diego		
Nikaein	Afzal	PhD, HCLD	Texas Medical Specialty, Inc.	Dallas	TX	
Pereira	Shalini		Scisco Genetics, Inc.	Seattle	WA	
Permpikul	Vejbaesya &	Drs	Mahidol University	Bangkok		Thailand
Philogene	Mary Carmelle	Dr	American Red Cross	Philadelphia	PA	
Pollack	Marilyn S.	PhD	UCSF Benioff Children's Hospital-Oakland	Oakland	CA	
Poulton	Kay	Dr	Transplantation Laboratory	Manchester		United Kingdom
Raja	Rajalingam	PhD	University of California, San Francisco	San Francisco	CA	
Reed	Elaine F.	PhD	UCLA Immunogenetics Center	Los Angeles	CA	
Rossi	Angela	Dr	Ospedale Guglielmo Da Saliceto	Piacenza		Italy
Ruiz	Phillip	MD, PhD	University of Miami	Miami	FL	
Sachsenberg	N.	Dr	BAG Diagnostics GmbH	Lich, Hesse		Germany
Sayer	David		CareDX PtyLtd	Fremantle		Australia
Schiller	Jennifer	PhD	Versiti-Wisconsin	Milwaukee	WI	
Schlenke	Peter	Prof Dr	LKH Univ. Klinikum Graz	Graz		Austria
Siedlar	Maciej		Children University Hospital	Cracow		Poland
Sortino	Grazia	Dr	AOU "Policlinico-Vitt. Emanuele"	Catania		Italy
Stray	Allison		Immucor GTI Diagnostics	Waukesha	WI	
Uhrberg	Markus	Dr	Universitatsklinikum Dusseldorf	Dusseldorf		Germany
Vander Horn	Peter	Dr	Thermo Fisher Scientific	West Hills	CA	
Ward	William	PhD, D(ABHI)	NIH	Bethesda	MD	
Wieten	Lotte	Dr	Maastricht University Medical Center	Maastricht		Netherlands
Yu	Neng	Dr	UMMHC	Worcester	MA	
Zhang	Xiaohai	PhD	Cedars-Sinai Medical Center	Los Angeles	CA	