

REPORT OF THE 55th UCLA INTERNATIONAL KIR EXCHANGE

NOVEMBER 2, 2022

KIR 231-236

For the 55th KIR Exchange, 6 DNA samples (KDNA#231 - 236) were shipped to 64 laboratories worldwide. KIR typing results were received from 62 of the laboratories. The results for the 55th KIR Exchange are summarized in Table 1 and individual laboratory results reported for each DNA sample are provided in Tables 2 - 7.

We would like to thank the labs reporting subtyping results for the various KIR genes, in particular, center 8047 who reported subtyping results for all 16 KIR genes. Subtyping results for KIR2DS4 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. For **sample # 231**, the results for KIR2DS3 were not included in the grading analysis. Seventy-nine percent of labs reported it as negative and 21% reported it as positive.

Lastly, we would like to express our appreciation to Arnold, Azzaro, Falco, and Renac for sharing their predicated haplotypes for the samples examined in this study.

KDNA # 231: KIR2DL1-2DL3-2DL4-2DL5A-3DL2-3DL3-3DS1-2DS1-2DS2-2DS3?-2DS5-2DP1-3DP1DEL was the consensus type for this sample from a Hispanic donor.

No agreement was achieved for the assignment of KIR2DS3 in this sample, as 49/62 (79%) labs reported it as absent and 13/62 (21%) indicated it was present. Among the labs reporting 2DS3 as present, 12 reported using the LinkSeqTM RT-PCR kit, and 1 lab reported using the Immucor SSO kit. Interestingly, Gendzekhadze observed a discrepancy in its tests results between SSP and qPCR, in which 2DS3 was negative by SSP, but positive by qPCR.

Arnold, Azzaro, and Falco commented on the unusual haplotype present in this sample, with Falco sharing the following observation: "A centromeric B region carrying KIR2DS2 and missing KIR2DL2 suggested the presence of KIR2DS2*005, a hybrid allele sharing the first six exons with KIR2DS2 and the exons 7 to 9 with KIR2DS3. KIR2DS2*005 presence was verified using a homemade SSP-PCR approach using the KIR2DS2*005 specific primers reported by Ordonez (Genes Immun. 2011)."

Predicted haplotypes:

Azzaro - Cen-A/Cen-B + Tel-B1*/Tel-B1

Falco - Cen-A/Cen-B contracted + Telomeric regions TelB1*/TelB1

Renac - AB

*classified as TelB1 by the presence of KIR2DS5, (Cisneros Frontiers in Immunology 2020)

KDNA # 232: KIR2DL1-2DL2-2DL3-2DL4-2DL5B-3DL1-3DL2-3DL3-2DS2-2DS4FULL-2DS5-2DP1-3DP1DEL was the consensus type for this sample from a Black donor.

Several discrepancies were observed in this sample, including 1 lab reporting 2DL5 as negative instead of positive. Three labs using the Olerup SSP – CareDx kit reported 2DS1 as positive instead of negative.

Predicted haplotypes

Azzaro - Cen-A/Cen-B1 + Tel-A/Tel-A (3DP1*003-L alleles characterize Cen-B1, Bono et al Immunology 2018).

Falco - Cen-A/Cen-B1 (with KIR2DS5) + Tel-A/Tel-A

Renac - AB

KDNA # 233: KIR2DL1-2DL3-2DL4-2DL5A-3DL1-3DL2-3DL3-3DS1-2DS3-2DS4DEL-2DP1-3DP1DEL was the consensus type for this sample from a Hispanic donor.

A number of discrepancies were observed for this sample. One lab reported 2DL2 as positive and another reported 3DS1 as negative. Two labs reported 2DS5 as positive instead of negative.

Arnold predicted the sample to have an uncommon haplotype in which "2DL5A is positive, but 2DS1 is negative." Azzaro and Falco also commented on the presence of an unusual haplotype, noting the presence of 3DS1 in the absence of 2DS1. Falco kindly shared the following observations:

"Presence of a TelB region including 3DS1-2DL5A-2DS3 but lacking 2DS1

characterizes this genotype and suggests the presence of an expanded haplotype (described by several groups and recently detected by Cisneros and coworkers in the Spanish population, *Frontiers in Immunology* 2020)."

Predicted haplotypes

Azzaro - Cen-A/Cen-A + Tel-A/Tel-B2 (Tel-B2 has been assigned based on KIR2DS3 presence, Cisneros *Frontiers in Immunology* 2020)
Falco - Cen-A/Cen-A + Tel-A/Tel-B
Renac - AB

KDNA # 234: KIR2DL2-2DL4-2DL5A-3DL2-3DL3-3DS1-2DS1-2DS2-2DS5-3DP1FULL was the consensus type for this sample from a Hispanic donor.

Two labs accounted for the discrepancies observed in this sample. One lab reported 2DL5 as negative and 3DL1 as positive. The other lab reported 2DL1, 2DL3, and 2DP1 as positive and 2DL2 as negative.

Arnold predicts this sample to have 2 "Bdel" haplotypes.

Predicted haplotypes

Azzaro - Cen-B2/Cen-B2 + Tel-B1/Tel-B1(3DP1*001-L alleles characterize Cen-B2, Bono et al *J.-Immunolog.* 2018)
Falco - CenB2/CenB2 + TelB1/TelB1
Renac - B

KDNA # 235: KIR2DL1-2DL2-2DL3-2DL4-2DL5AB-3DL1-3DL2-3DL3-3DS1-2DS1-2DS2-2DS3-2DS4DEL-2DP1-3DP1DEL was the consensus type for this sample from a Hispanic donor.

One lab reported 2DL5 as negative and 2DS5 as positive. Another lab reported 3DS1 and 2DS3 as negative and 2DS5 as positive.

Predicted haplotypes:

Azzaro - Cen-A/Cen-B1 + Tel-A/Tel-B2
Falco - Cen-A/Cen-B1 + Tel-A/Tel-B2
Renac - AB

KDNA # 236: KIR2DL2-2DL4-3DL1-3DL2-3DL3-2DS2-2DS4FULL-3DP1FULL was the consensus type for this sample from a Hispanic donor.

Two labs reported 2DL5 as positive instead of negative. One lab accounted for the remaining discrepancies observed.

Predicted haplotypes

Azarro - Cen-B2/Cen-B2 + Tel-A/Tel-A
Falco - Cen-B2/Cen-B2 + Tel-A/Tel-A
Renac - AB



NEXT MAILING DATE: February 1, 2023

Arlene Locke, David Gjertson, Qiuhe Zhang, and Elaine F. Reed



Table 1. Summary of the 55th KIR Exchange (KDNA #231-236)

KIR Ex.	DNA	# Labs	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1
#55	231	62	POS[61] *003/*006/ *034+ *004/*010/ *035[1]	NEG[61] POS[1]	POS[61] *00101[1]	POS[59] NORM[1] *00501+ *00501[1] NT[1]	POS[51] A[8] A,B[1] *001A/ *012A/ *006B/*008B +*00103A [1] NEG[1]	NEG[61] POS[1]	POS[61] *007+ *007 [1]	POS[60] *00301+ *00902 [1] NT[1]	POS[61] *01301/ *107+ *01301/ *107[1]	POS[60] *002-*009[1] *00201+ *00201 [1]	POS[61] *005[1]	NEG[49] POS[13]	NEG[61] POS[1]	POS[61] *00201+ *00201[1]	POS[60] NT[2]	POS[45] DEL[13] *001/*003/ *004/*009+ *00301[1] NORM*003, *005,*006[1] NT[2]
	232	62	POS[61] *00303/ *00306+ *01201/ *01202[1]	POS[61] *00101[1]	POS[61] *006[1]	POS[60] NORM / DEL[1] NT[1]	POS[48] B[11] *004B[1] NULL[1] NEG[1]	POS[61] *01502/ *01702+ *05901[1]	POS[61] *00201/ *00202/ *101/ *102[1]	POS[60] *00402/ *00801+ *005/ *034[1] NT[1]	NEG[62]	NEG[59] POS[3]	POS[61] *00101/ *002/ *00601[1]	NEG[62]	POS[44] FULL[16] NORM[1] *00101/ *01102/ *017[1]	POS[61] *00601/ *01202[1]	POS[59] *007+ *009[1] NT[2]	POS[45] DEL[13] NORM*003, *005,*006[1] *001/*003/ *004/*009+ *013[1] NT[2]
	233	62	POS[61] *00101/ *00201+ *007+ *01202[1]	NEG[61] POS[1]	POS[61] *00201+ *00501/ *036[1]	POS[60] NORM /DEL[1] NT[1]	POS[51] A[8] *005A/*002B/ *010B[1] A,B[1] NT[1]	POS[61] *00101/ *095+ *033[1]	POS[62]	POS[60] *01701+ *02702[1] NT[1]	POS[60] *01301/ *107[1] NEG[1]	NEG[62]	NEG[62]	POS[61] *00103/ *007[1]	POS[44] DEL[16] *00301+ *00401[1] DELTA[1]	NEG[60] POS[2]	POS[59] *00102+ *00301+ *013[1] NT[2]	POS[46] DEL[13] NORM*003, *005,*006[1] NT[2]
	234	62	NEG[61] POS[1]	POS[60] *00301+ *00301[1] NEG[1]	NEG[60] POS[1] NT[1]	POS[59] NORM/ 2DL4 DEL[1] *00501+ *00501[1] NT[1]	POS[51] A[8] A,B[1] *001A/*012A/ *006B/ *008B+ *00103A[1] NEG[1]	NEG[61] POS[1]	POS[61] *007+ *007[1]	POS[60] *00402+ *00402[1] NT[1]	POS[61] *01301/ *107+ *01301/ *107 [1]	POS[61] *002-*009[1]	POS[61] *001*002+ *001/ *002[1]	NEG[62]	NEG[62]	POS[61] *00201+ *00201[1]	NEG[59] POS[1] NT[2]	POS[46] FULL[13] *007+ *007[1] NT[2]
	235	62	POS[61] *003/*006/* 034+ *004/*010/* 035[1]	POS[61] *00101[1]	POS[61] *009[1]	POS[60] NORM /2DL4 DEL[1] NT[1]	POS[53] A,B[7] *005A/*002B/ *010B+ *005A/*002B/ *010B [1] NEG[1]	POS[61] *00101/ *095[1]	POS[61] *00701/ *00708/ *00709+ *01001/ *01004[1]	POS[60] *00301/ *00902+ *01002/ *02801[1] NT[1]	POS[60] *01301/ *107[1] NEG[1]	POS[60] *002-*009[1] Indeterm[1]	POS[61] *00101/ *002[1]	POS[60] *00103/ *007+ *00201[1] NEG[1]	POS[44] DEL[16] *0030101[1] DELTA[1]	NEG[60] POS[2]	POS[59] *00102+ *00201[1] NT[2]	POS[45] DEL[13] *001/*003 / *004/*009+ *003[1] NORM*003, *005,*006[1] NT[2]
	236	62	NEG[61] POS[1]	POS[60] *00301+ *00301[1] NEG[1]	NEG[59] POS[2] NT[1]	POS[59] *00102+ *00102[1] NORM[1] NT[1]	NEG[60] POS[2]	POS[62]	POS[61] *002/*101/ *102+*002/* 101/ *102[1]	POS[60] *00402+ *00402[1] NT[1]	NEG[61] POS[1]	NEG[62]	POS[60] *001/*002/ *006+ *001/*002/ *006[1] NEG[1]	NEG[61] POS[1]	POS[44] FULL[16] NORM[1] *001/*011/ *017+*001/ *011/*017[1]	NEG[61] POS[1]	NEG[59] POS[1] NT[2]	POS[46] FULL[13] *007+ *007[1] NT[2]

Table 1 Legend

[] - number of labs reporting allele assignment/POS/NEG/NT
POS - Presence of gene
NEG - Absence of gene
NT - Not typed; NR - Not reported
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 #231 (Hispanic)																	
CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[62]	NEG[61]	POS[62]	POS[61]	POS[53] +A[8]	NEG[61]	POS[62]	POS[61]	POS[62]	POS[62]	POS[62]	NEG[49] POS[13]	NEG[61]	POS[62]	POS[60]	POS[47]+ DEL[13]	
124	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NT	NT	SSP
278	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	
713	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	RT-PCR
733	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP NGS
762	POS	NEG	POS	POS	A	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	DEL	SSP
792	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP
1108	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO
1426	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	DEL	SSP RT-PCR
1466	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	RT-PCR
1694	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP
1778	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO
3224	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO
3410	POS	NEG	POS	POS	A	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP
3519	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP
3632	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	RT-PCR
3753	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO
3798	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP
3966	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	SSP RT-PCR
4021	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP
4251	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO
4337	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP
4345	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP
4985	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	
5000	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP SSO
5133	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	POS	POS	DEL	RT-PCR
5142	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	DEL	
5219	POS	POS	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
5282	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP
5451	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO
5462	POS	NEG	POS	POS	A	NEG	POS	POS	POS	*002-*009	POS	NEG	NEG	POS	POS	DEL	SSP RT-PCR
5488	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO
8022	POS	NEG	POS	POS	A	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	DEL	SSP
8028	POS	NEG	POS	NT	POS	NEG	POS	NT	POS	POS	POS	NEG	NEG	POS	NT	NT	
8030	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO
8038	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO
8047	*003/*006/ *034/*004/ *010/*035	NEG	*00101	*00501+	*001A/ *012A/ *006B/ *008B+*0 0103A	NEG	*007+	*00301+	*01301/ *107+	*00201+	*005	NEG	NEG	*00201+	POS	*001/*003/ *004/*009+ *00301	NGS
8050	POS	NEG	POS	POS	A	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	DEL	SSP
8053	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO RT-PCR
8060	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO

Table 2. KDNA #231 (Hispanic)																	
CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[62]	NEG[61]	POS[62]	POS[61]	POS[53] +A[8]	NEG[61]	POS[62]	POS[61]	POS[62]	POS[62]	POS[62]	NEG[49] POS[13]	NEG[61]	POS[62]	POS[60]	POS[47]+ DEL[13]	
8069	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO
8071	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO
8073	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	POS	POS	DEL	RT-PCR
8079	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO
8080	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	POS	POS	DEL	RT-PCR
8083	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO
8084	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	RT-PCR
8085	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	NGS
8090	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP SSO
8092	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	RT-PCR
8094	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSO
8098	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	
8104	POS	NEG	POS	POS	A	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	DEL	SSP
8105	POS	NEG	POS	POS	A	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	NGS
8106	POS	NEG	POS	POS	A	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	DEL	SSP
8110	POS	NEG	POS	POS	A,B?	NEG	POS	POS	POS	POS	POS	POS	NEG	POS	POS	DEL	RT-PCR
8113	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP
8118	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	RT-PCR
8122	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	RT-PCR
8124	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP SSO
8126	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	DEL	SSP
8127	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	RT-PCR
8129	POS	NEG	POS	NORM	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NORM *003,*005, *006, ...	SSP

Table 3. KDNA #232 (Black)

CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[62]	POS[62]	POS[62]	POS[61]	POS[49] +B[12]	POS[62]	POS[62]	POS[61]	NEG[62]	NEG[59]	POS[62]	NEG[62]	POS[46] +FULL[16]	POS[62]	POS[60]	POS[47] +DEL[13]	
124	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	NT	NT	SSP
278	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	
713	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	RT-PCR
733	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP NGS
762	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	DEL	SSP
792	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
1108	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	POS	SSO
1426	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	DEL	SSP RT-PCR
1466	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	RT-PCR
1694	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
1778	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
3224	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
3410	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
3519	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
3632	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	RT-PCR
3753	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	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	NEG	POS	NEG	POS	POS	POS	POS	SSP RT-PCR
4021	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
4251	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
4337	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
4345	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
4985	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	
5000	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP SSO
5133	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	DEL	RT-PCR
5142	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	DEL	
5219	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
5282	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
5451	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
5462	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	DEL	SSP RT-PCR
5488	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
8022	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	DEL	SSP
8028	POS	POS	POS	NT	POS	POS	POS	NT	NEG	NEG	POS	NEG	POS	POS	NT	NT	
8030	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
8038	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	POS	SSO
8047	*00303/ *00306+ *01201/ *01202	*00101	*006	POS	*004B	*01502/ *01702+ *05901	*00201/ *00202/ *101/ *102	*00402/ *00801+ *005/ *034	NEG	NEG	*00101/ *002/ *00601	NEG	*00101/ *01102/ *017	*00601/ *01202	*007+ *009	*001/ *003/*004/ *009+*013	NGS
8050	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	FULL	POS	POS	DEL	SSP
8053	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO RT-PCR
8060	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
8069	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	POS	SSO

Table 3. KDNA #232 (Black)																	
CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[62]	POS[62]	POS[62]	POS[61]	POS[49] +B[12]	POS[62]	POS[62]	POS[61]	NEG[62]	NEG[59]	POS[62]	NEG[62]	POS[46]+ FULL[16]	POS[62]	POS[60]	POS[47]+ DEL[13]	
8071	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
8073	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	DEL	RT-PCR
8079	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
8080	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	DEL	RT-PCR
8083	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
8084	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	RT-PCR
8085	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	NGS
8090	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP SSO
8092	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	RT-PCR
8094	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
8098	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	POS	
8104	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	DEL	SSP
8105	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	NGS
8106	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	DEL	SSP
8110	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	DEL	RT-PCR
8113	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
8118	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	RT-PCR
8122	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	RT-PCR
8124	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP SSO
8126	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	POS	POS	DEL	SSP
8127	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	RT-PCR
8129	POS	POS	POS	NORM/ DEL	NULL	POS	POS	POS	NEG	NEG	POS	NEG	NORM	POS	POS	NORM *003,*005, *006, ...	SSP

Table 4. KDNA #233 (Hispanic)																	
CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[62]	NEG[61]	POS[62]	POS[61]	POS[53] +A[8]	POS[62]	POS[62]	POS[61]	POS[61]	NEG[62]	NEG[62]	POS[62]	POS[46]+ DEL[16]	NEG[60]	POS[60]	POS[47]+ DEL[13]	
124	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	NT	NT	SSP
278	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	
713	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	RT-PCR
733	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSP NGS
762	POS	NEG	POS	POS	A	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	DEL	SSP
792	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSP
1108	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	POS	SSO
1426	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	DEL	SSP RT-PCR
1466	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	RT-PCR
1694	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSP
1778	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSO
3224	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSO
3410	POS	NEG	POS	POS	A	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSP
3519	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSP
3632	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	RT-PCR
3753	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSO
3798	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSP
3966	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSP RT-PCR
4021	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSP
4251	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSO
4337	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSP
4345	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	POS	POS	SSP
4985	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	
5000	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSP SSO
5133	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	DEL	RT-PCR
5142	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	DEL	
5219	POS	POS	POS	POS	NEG	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	POS	POS	SSO
5282	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSP
5451	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSO
5462	POS	NEG	POS	POS	A	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	DEL	SSP RT-PCR
5488	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSO
8022	POS	NEG	POS	POS	A	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	DEL	SSP
8028	POS	NEG	POS	NT	POS	POS	POS	NT	POS	NEG	NEG	POS	POS	NEG	NT	NT	
8030	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSO
8038	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	POS	SSO
	*00101/ *00201+ *007+		*00201+ *00501/ *036	POS	*005A/ *002B/ *010B	*00101/ *095+ *033	POS	*01701+ *02702	*01301/ *107	NEG	NEG	*00103/ *007	*00301+ *00401	NEG	*00102+ *00301+ *013	POS	NGS
8047	*01202	NEG															
8050	POS	NEG	POS	POS	A	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	DEL	SSP
8053	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSO RT-PCR
8060	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSO
8069	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	POS	SSO

Table 4. KDNA #233 (Hispanic)																	
CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[62]	NEG[61]	POS[62]	POS[61]	POS[53] +A[8]	POS[62]	POS[62]	POS[61]	POS[61]	NEG[62]	NEG[62]	POS[62]	POS[46]+ DEL[16]	NEG[60]	POS[60]	POS[47]+ DEL[13]	
8071	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSO
8073	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	DEL	RT-PCR
8079	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSO
8080	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	DEL	RT-PCR
8083	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSO
8084	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	RT-PCR
8085	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	NGS
8090	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	POS	POS	NEG	POS	POS	SSP SSO
8092	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	RT-PCR
8094	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSO
8098	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	POS	
8104	POS	NEG	POS	POS	A	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	DEL	SSP
8105	POS	NEG	POS	POS	A	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	NGS
8106	POS	NEG	POS	POS	A	POS	POS	POS	POS	NEG	NEG	POS	DELTA	NEG	POS	DEL	SSP
8110	POS	NEG	POS	POS	A,B?	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	DEL	RT-PCR
8113	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSP
8118	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	RT-PCR
8122	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	RT-PCR
8124	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSP SSO
8126	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	DEL	NEG	POS	DEL	SSP
8127	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	RT-PCR
8129	POS	NEG	POS	NORM/ DEL	POS	POS	POS	POS	POS	NEG	NEG	POS	DEL-22BP	NEG	POS	NORM *003,*005, *006, ...	SSP

Table 5. KDNA #234 (Hispanic)																	
CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	NEG[61]	POS[61]	NEG[60]	POS[61]	POS[53]+ A[8]	NEG[61]	POS[62]	POS[61]	POS[62]	POS[62]	POS[62]	NEG[62]	NEG[62]	POS[62]	NEG[60]	POS[47]+ FULL[13]	
124	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NT	NT	SSP
278	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	
713	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	RT-PCR
733	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP NGS
762	NEG	POS	NEG	POS	A	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	SSP
792	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP
1108	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
1426	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	SSP RT-PCR
1466	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	RT-PCR
1694	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP
1778	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
3224	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
3410	NEG	POS	NEG	POS	A	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP
3519	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP
3632	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	RT-PCR
3753	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
3798	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP
3966	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP RT-PCR
4021	NEG	POS	NT	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP
4251	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
4337	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP
4345	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP
4985	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	
5000	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP SSO
5133	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	RT-PCR
5142	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	
5219	NEG	POS	NEG	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
5282	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	SSP
5451	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
5462	NEG	POS	NEG	POS	A	NEG	POS	POS	POS	*002-*009	POS	NEG	NEG	POS	NEG	FULL	SSP RT-PCR
5488	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
8022	NEG	POS	NEG	POS	A	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	SSP
8028	NEG	POS	NEG	NT	POS	NEG	POS	NT	POS	POS	POS	NEG	NEG	POS	NT	NT	
8030	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
8038	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
8047	NEG	*00301+	NEG	*00501+	*001A/ *012A/ *006B/ *008B+ *00103A	NEG	*007+	*00402+	*01301/ *107+	POS	*001/ *002+ *001/ *002	NEG	NEG	*00201+	NEG	*007+*007	NGS
8050	NEG	POS	NEG	POS	A	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	SSP
8053	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO RT-PCR
8060	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO

Table 5. KDNA #234 (Hispanic)																	
CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	NEG[61]	POS[61]	NEG[60]	POS[61]	POS[53]+ A[8]	NEG[61]	POS[62]	POS[61]	POS[62]	POS[62]	POS[62]	NEG[62]	NEG[62]	POS[62]	NEG[60]	POS[47]+ FULL[13]	
8069	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
8071	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
8073	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	RT-PCR
8079	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
8080	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	RT-PCR
8083	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
8084	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	RT-PCR
8085	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	NGS
8090	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP SSO
8092	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	RT-PCR
8094	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSO
8098	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	
8104	NEG	POS	NEG	POS	A	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	SSP
8105	NEG	POS	NEG	POS	A	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	NGS
8106	NEG	POS	NEG	POS	A	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	SSP
8110	NEG	POS	NEG	POS	A,B?	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	RT-PCR
8113	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP
8118	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	RT-PCR
8122	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	RT-PCR
8124	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP SSO
8126	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	FULL	SSP
8127	NEG	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	RT-PCR
8129	NEG	POS	NEG	NORM/ 2DL4 DEL	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	SSP

CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[62]	POS[62]	POS[62]	POS[61]	POS[54]+ A,B[7]	POS[62]	POS[62]	POS[61]	POS[61]	POS[61]	POS[62]	POS[61]	POS[46]+ DEL[16]	NEG[60]	POS[60]	POS[47]+ DEL[13]	
124	POS	POS	POS	POS	POS	POS	POS	POS	POS	INDETER	POS	POS	POS	NEG	NT	NT	SSP
278	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	
713	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	RT-PCR
733	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP NGS
762	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	NEG	POS	DEL	SSP
792	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
1108	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	NEG	POS	POS	SSO
1426	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	NEG	POS	DEL	SSP RT-PCR
1466	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	RT-PCR
1694	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
1778	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
3224	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
3410	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
3519	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
3632	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	RT-PCR
3753	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
3798	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
3966	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP RT-PCR
4021	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
4251	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
4337	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
4345	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
4985	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	
5000	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO
5133	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	NEG	POS	DEL	RT-PCR
5142	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	NEG	POS	DEL	
5219	POS	POS	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
5282	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	SSP
5451	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
5462	POS	POS	POS	POS	POS	A, B	POS	POS	POS	POS	*002-*009	POS	POS	DEL	NEG	POS	SSP RT-PCR
5488	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
8022	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	DEL	SSP
8028	POS	POS	POS	NT	POS	POS											

Table 6. KDNA #235 (Hispanic)																	
CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	POS[62]	POS[62]	POS[62]	POS[61]	POS[54]+ A,B[7]	POS[62]	POS[62]	POS[61]	POS[61]	POS[61]	POS[62]	POS[61]	POS[46]+ DEL[16]	NEG[60]	POS[60]	POS[47]+ DEL[13]	
8060	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
8069	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	NEG	POS	POS	SSO
8071	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
8073	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	NEG	POS	DEL	RT-PCR
8079	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
8080	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	NEG	POS	DEL	RT-PCR
8083	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
8084	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	RT-PCR
8085	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NGS
8090	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO
8092	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	RT-PCR
8094	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
8098	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	ALL EX.4 DEL EX.5	NEG	POS	POS	
8104	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	DEL	NEG	POS	DEL	SSP
8105	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NGS
8106	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	DELTA	NEG	POS	DEL	SSP
8110	POS	POS	POS	POS	A,B?	POS	POS	POS	POS	POS	POS	POS	DEL	NEG	POS	DEL	RT-PCR
8113	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
8118	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	RT-PCR
8122	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	RT-PCR
8124	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO
8126	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	NEG	POS	DEL	SSP
8127	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	RT-PCR
8129	POS	POS	POS	NORM/ 2DL4 DEL	POS	POS	POS	POS	POS	POS	POS	POS	DEL-22BP	NEG	POS	NORM *003,*005, *006, ...	SSP

Table 7. KDNA #236 (Hispanic)																	
CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	NEG[61]	POS[61]	NEG[59]	POS[61]	NEG[60]	POS[62]	POS[61]	POS[61]	NEG[61]	NEG[62]	POS[61]	NEG[61]	POS[46]+ FULL[16]	NEG[61]	NEG[59]	POS[47]+ FULL[13]	
124	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NT	NT	SSP
278	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	
713	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	RT-PCR
733	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP NGS
762	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	FULL	SSP
792	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
1108	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	POS	SSO
1426	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	FULL	SSP RT-PCR
1466	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	RT-PCR
1694	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
1778	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
3224	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
3410	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
3519	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
3632	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	RT-PCR
3753	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
3798	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
3966	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP RT-PCR
4021	NEG	POS	NT	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
4251	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
4337	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
4345	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
4985	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	
5000	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP SSO
5133	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	FULL	RT-PCR
5142	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	FULL	
5219	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	NEG	POS	SSO
5282	POS	NEG	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	NEG	POS	POS	SSP
5451	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
5462	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	FULL	SSP RT-PCR
5488	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8022	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	FULL	SSP
8028	NEG	POS	POS	NT	POS	POS	POS	NT	NEG	NEG	POS	NEG	POS	NEG	NT	NT	
8030	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8038	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	POS	SSO
8047	NEG	*00301+ *00301	NEG	*00102+ *00102	NEG	POS	*002/*101/ *102+ *002/ *101/*102	*00402+ *00402	NEG	NEG	*001/*002/ *006+ *001/ *002/*006	NEG	*001/*011/ *017+ *001/ *011/*017	NEG	NEG	*007+ *007	NGS
8050	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	FULL	SSP
8053	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO RT-PCR
8060	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8069	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	POS	SSO

Table 7. KDNA #236 (Hispanic)																	
CTR	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	NEG[61]	POS[61]	NEG[59]	POS[61]	NEG[60]	POS[62]	POS[61]	POS[61]	NEG[61]	NEG[62]	POS[61]	NEG[61]	POS[46]+ FULL[16]	NEG[61]	NEG[59]	POS[47]+ FULL[13]	
8071	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8073	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	FULL	RT-PCR
8079	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8080	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	FULL	RT-PCR
8083	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8084	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	RT-PCR
8085	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	NGS
8090	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP SSO
8092	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	RT-PCR
8094	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
													ALL EX.4 FULL LENGTH				
8098	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	EX.5	NEG	NEG	POS	
8104	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	FULL	SSP
8105	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	NGS
8106	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	FULL	SSP
8110	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	FULL	RT-PCR
8113	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8118	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	RT-PCR
8122	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	RT-PCR
8124	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP SSO
8126	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL	NEG	NEG	FULL	SSP
8127	NEG	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	RT-PCR
8129	NEG	POS	NEG	NORM	NEG	POS	POS	POS	NEG	NEG	POS	NEG	NORM	NEG	NEG	POS	SSP