

REPORT OF THE 41ST UCLA INTERNATIONAL KIR EXCHANGE

OCTOBER 20, 2016

KIR 161-164

For the 41st KIR Exchange, 4 DNA samples (KDNA#161 - 164) were shipped to 76 participating laboratories. A total of 72 laboratories submitted their KIR typing results.

The results for the 41st KIR Exchange are summarized in Table 1 and individual laboratory results reported for each DNA sample are provided in Tables 2 - 5. Subtyping results for KIR2DL2, 2DL5, 3DL1, 2DS1, 2DS3, 2DS4, and 3DP1 loci were reported by some laboratories. The subtypes for

2DS4 and 3DP1 are denoted as FULL or DEL. The positive/negative assignments for all 4 DNA samples were reported without any discrepancies for 14 of the 16 tested KIR loci (2DL1, 2DL2, 2DL4, 2DL5, 3DL1, 3DL2, 3DL3, 3DS1, 2DS1, 2DS2, 2DS3, 2DS4, 2DS5, and 3DP1), the most ever. Discrepant results from consensus are italicized in tables 1 - 5 and described in the summation for each sample. Discrepancies at the allele level are not italicized.

KIR Exchange Sample: KDNA # 161:

The consensus KIR type for this sample from a Hispanic donor is 2DL1-2DL2-2DL4-3DL1-3DL2-3DL3-2DS2-2DS4FULL&DEL-3DP1FULL&DEL. Two labs reported this sample as positive for 2DP1. A number of labs noted the presence of interesting haplotypes in this cell, as it was positive for 2DL1, but negative for 2DP1. Shalini shared the following findings: "2DP1 was detected in exon 7 and exon 9, but not exons 3-5, so our determination is of a 2DL2-2DP1 hybrid allele in addition to the normal 2DL2." Vilches observed a similar pattern, noting "Cell 161 is positive for the 2DL3 extracellular region, and negative for the 2DL3 intracellular portion; this result, and atypical absence of 2DP1 in presence of 2DL1, fit with the cell having a 2DL3/2DP1 chimera (similar to Traherne et al. Hum Mol Genet. 2010)" (1). Based on the presence or absence of genes, Hartzman and Hurley predicted the haplotypes in this sample as cB02/uncommon and tA01/tA01.

KIR Exchange Sample: KDNA # 162:

The consensus KIR genotype for this sample from a Hispanic donor is 2DL1-2DL3-2DL4-3DL1-3DL2-3DL3-2DS4FULL&DEL-2DP1-3DP1DEL. No discrepancies were reported for this sample. Arnold commented that this sample was "also positive for the 3DL1 variant alleles that are retained intracellularly." Hartzman and Hurley predicted the haplotypes in this cell to be cA01/cA01 and tA01/tA01. The genotype in this sample is commonly observed across all populations, including the Mestizo (38%) and Huichol (41.5%) populations in Mexico (2).

KIR Exchange Sample: KDNA # 163:

The consensus KIR type for this sample from a Filipino donor is 2DL1-2DL2-2DL4-2DL5A&B-3DL1-3DL2-3DL3-3DS1-2DS1-2DS2-2DS3-2DS4FULL-2DP1-3DP1FULL&DEL. Only 1 discrepancy was reported for this sample, as 1 lab reported 2DL3 as positive instead of negative. Hartzman and Hurley predicted the haplotypes in this cell to be cB01/cB01 or cB02 and fusion gene haplotype tB05/tB01. They further noted that "KDNA163 carries a 2DL5A/3DP1 fusion gene which was detected by an additional 2DL5A/3DP1-FG SSP." The genotype in this sample is observed in Persian (1.2%) and Azeri (1.2%) populations in Iran, as well as in Asian Indian Maharashtrians populations (1.7) (3)(4). It is absent in all other populations.

KIR Exchange Sample: KDNA # 164:

The consensus KIR type for this sample from a Black donor is 2DL1-2DL2-2DL3-2DL4-2DL5A&B-3DL1-3DL2-3DL3-3DS1-2DS1-2DS2-2DS3-2DS4DEL-2DS5-2DP1-3DP1DEL. A single discrepancy was observed for this sample, in which 1 lab reported 2DL3 as negative instead of positive. Predicted haplotypes by Hartzman and Hurley were cA01/cB01 and tA01/tB01. The KIR genotype in this sample is observed with the highest frequency among the Kanikar (23%)(3). It is also observed among African Americans at a frequency of 1.7% (4).

References:

1. Traherne J, Martin M, Ward R, et al. Mechanisms of copy number variation and hybrid gene formation in the KIR immune gene complex. *Human Molecular Genetics* 2009;19(5):737-51.
2. Gutierrez-Rodriguez ME, Sandoval-Ramirez L, Diaz-Flores M, et al. Human KIR Gene in Ethnic and Mestizo Populations from Mexico. *Human Immunology* 2006;67:85-93.
3. Ashouri E, Farjadian S, Reed EF, et al. KIR gene content diversity in four Iranian populations. *Immunogenetics*. 2009;61:483-492.
4. Norman PJ, Carrington CV, Byng M, Maxwell LD, Curran MD, et al. Natural killer cell immunoglobulin-like receptor (KIR) locus profiles in African and South Asian populations. *Genes Immun* 2002;3:86–95.



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Table 1. Summary of the 41st KIR Exchange (KDNA #161-164)

KIR Ex.	DNA	# Reporting Labs	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1
#41	161	72	POS[72]	POS[71] *001/ *002/ *003/ *005[1]	NEG[68] POS[3], CHIMERIC[1]	POS[70] NT[2]	NEG[72]	POS[71] *00402, *015NEW[1]	POS[71] NT[1]	POS[70] NT[2]	NEG[72]	NEG[72]	POS[72]	NEG[72]	POS[56] FULL, DEL[13] WT, DEL[1] DEL[2]	NEG[72]	NEG[69] POS[2] NT[1]	POS[60] FULL, DEL[10] NT[2]
	162	72	POS[72]	NEG[72]	POS[72]	POS[70] NT[2]	NEG[72]	POS[71] *00401, *01502[1]	POS[71] NT[1]	POS[70] NT[2]	NEG[72]	NEG[72]	NEG[72]	NEG[72]	POS[56] FULL, DEL[13] WT, DEL[1] DEL[2]	NEG[72]	POS[71] NT[1]	POS[55] DEL[14] *003[1] NT[2]
	163	72	POS[72]	POS[71] *001/ *002/ *003/ *005[1]	NEG[71] POS[1]	POS[70] NT[2]	POS[61] A,B[9] A*005, B*009/ *016)[1] A*00501, B*00201[1]	POS[70] *001[1] *008, *01502[1]	POS[71] NT[1]	POS[70] NT[2]	POS[72]	POS[70] *002-008[1] *002[1]	POS[72]	POS[71] *00101- *004/*006- *007[1]	POS[50] FULL[20] WT[1] *001[1]	NEG[72]	POS[71] NT[1]	POS[60] FULL, DEL[10] NT[2]
	164	72	POS[72]	POS[71] *001/ *002/ *003/ *005[1]	POS[71] NEG[1]	POS[70] NT[2]	POS[61] A,B[9] A*01201, B*00201[1] A*001, B*010[1]	POS[70] *001, *008[1] *001[1]	POS[71] NT[1]	POS[70] NT[2]	POS[72]	POS[70] *002- *008[1] *002[1]	POS[72]	POS[72]	POS[50] DEL[21] *003[1]	POS[72]	POS[71] NT[1]	POS[55] DEL[15] NT[2]

KEY for Table 1

[] - 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

KEY for Tables 2-5

italics - assignment different from consensus
 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. KIR Exchange Sample: KDNA #161 (Hispanic)

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	Consensus	POS [72]	POS [72]	NEG [68]	POS [70]	NEG [72]	POS [72]	POS [71]	POS [70]	NEG [72]	NEG [72]	POS [72]	NEG [72]	POS[59]+ FULL, DEL[13]	NEG [72]	NEG [69]	POS [61]+ FULL, DEL[9]	
5488	Adams, Sharon	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP SSO
8094	Ameen, Reem	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
5462	Arnold, Paula	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	FULL, DEL	SSP
5133	Askar, Medhat	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	FULL, DEL	SSO NGS RT-PCR
8073	Bengtsson, Mats	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
713	Bettinotti, Maria	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8026	Bittencourt, Vanes	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8038	Cao, Kai	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	DEL	NEG	NEG	POS	SSO
8025	Carrington, Martin	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	NT	SSP
1461	Cauwelier, Barbara	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
774	Cecka, J. Michael	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
3224	Chen, Dong-Feng	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP SSO
3632	Colombe, Beth W.	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	FULL, DEL	SSP
189	Crowe, Deborah	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP SSO
1108	DeConinck, Martha	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	
8095	denHollander, Neal	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	POS	SSO
705	Ellis, Thomas	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
3410	Ellison, Cynthia	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
2549	Fagoaga, Omar	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
234	Fernandez, Casian	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8053	Fernandez-Vina, M	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP SSO RT-PCR
762	Fischer, Gottfried	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
1778	Freed, Brian	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8047	Fuessel, Monika	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8076	Gaitonde, Sujata	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
1647	Gautreaux, Michae	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8022	Hedlund, Anna	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	FULL, DEL	SSP
1694	Hesse, Nicole	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
4985	Hoover, Beverly	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	
5000	Hsu, Susan H.	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP SSO
2344	Hurley, Hartzman&	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	POS	SSP SSO SBT
8093	Jindra, Peter	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8074	JunHe,	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	POS	SSP SSO
8035	Kanangat, Siva	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8079	Kashi, Zahra M.	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8086	Keming, Du	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
4337	Kim, Tai-Gyu	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8084	Kimball, Pam	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	RT-PCR
8046	Kusnierczyk, Piotr	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	POS	SSP
8071	Kwok, Janette	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO

Table 2. KIR Exchange Sample: KDNA #161 (Hispanic)

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	Consensus	POS [72]	POS [72]	NEG [68]	POS [70]	NEG [72]	POS [72]	POS [71]	POS [70]	NEG [72]	NEG [72]	POS [72]	NEG [72]	POS[59]+ FULL, DEL[13]	NEG [72]	NEG [69]	POS [61]+ FULL, DEL[9]	
725	Lardy, N.M.	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
278	Lee, Jar-How	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8088	Liu, Cong	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8069	Maha, George	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	FULL, DEL	SSP
5142	Marsh, Steven	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8097	Meunier, Marie-Ch	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8080	Monos, Dimitrios	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8092	Morris, Gerald	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8091	Murphey, Cathi	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8083	Nikaein, Afzal	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	
3966	Permpikul, Vejbaes	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
4021	Pollack, Marilyn S.	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
8030	Poulton, Kay	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8050	Raja, Rajalingam	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	FULL, DEL	SSP
3753	Reed, Elaine F.	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP SSO
3798	Reinsmoen, Nancy	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP SSO
8090	Rossi, Angela	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP SSO
8060	Rost, Klein &	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8039	Scaf,Carolynn	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
4251	Schiller, Jennifer	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO RT-PCR
1426	Senitzer, David	POS	POS	NEG	POS	NEG	*00402, *015NEW	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	POS	FULL, DEL	SSP
8085	Shalini, Pereira	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	NGS
702	Spannagl, Michael	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP
3261	Stevens, Tait	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
3808	Thornton, Alycia	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	FULL, DEL	SSP
5451	Tilanus, Marcel G.	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
8024	Trowsdale, John	POS	POS	NEG	NT	NEG	POS	NT	NT	NEG	NEG	POS	NEG	WT, DEL	NEG	NEG	FULL, DEL	SSP
8028	Uhrberg, Markus	POS	POS	NEG	NT	NEG	POS	POS	NT	NEG	NEG	POS	NEG	POS	NEG	NT	NT	SSP
8023	Vilches, Carlos	POS	POS	POSSIBLY CHIMERIC	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	FULL, DEL	NEG	NEG	FULL, DEL	SSP
8098	Xu, Ri	POS	*001/ *022/ *003/ *005	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	DEL	NEG	NEG	POS	SSO
1466	Yu, Neng	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSO
5282	Yu, Neng	POS	POS	NEG	POS	NEG	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	NEG	POS	SSP

Table 3. KIR Exchange Sample: KDNA #162 (Hispanic)

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	Consensus	POS [72]	NEG [72]	POS [72]	POS [70]	NEG [72]	POS [72]	POS [71]	POS [70]	NEG [72]	NEG [72]	NEG [72]	NEG [72]	POS[59] +FULL, DEL[13]	NEG [72]	POS [71]	POS[56]+ DEL[14]	
5488	Adams, Sharon	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP SSO
8094	Ameen, Reem	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
5462	Arnold, Paula	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	NEG	POS	DEL	SSP
5133	Askar, Medhat	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	NEG	POS	DEL	SSO NGS RT-PCR
8073	Bengtsson, Mats	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
713	Bettinotti, Maria	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
8026	Bittencourt, Vanes	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
8038	Cao, Kai	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	DEL	NEG	POS	POS	SSO
8025	Carrington, Martin	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	NEG	POS	NT	SSP
1461	Cauwelier, Barbara	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	DEL	SSP
774	Cecka, J. Michael	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
3224	Chen, Dong-Feng	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP SSO
3632	Colombe, Beth W.	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	NEG	POS	DEL	SSP
189	Crowe, Deborah	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP SSO
1108	DeConinck, Martha	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	
8095	denHollander, Neal	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
705	Ellis, Thomas	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
3410	Ellison, Cynthia	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
2549	Fagoaga, Omar	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
234	Fernandez, Casian	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
8053	Fernandez-Vina, M	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	DEL	SSP SSO RT-PCR
762	Fischer, Gottfried	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	DEL	SSP
1778	Freed, Brian	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	DEL	SSP
8047	Fuessel, Monika	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
8076	Gaitonde , Sujata	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
1647	Gautreaux, Michae	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
8022	Hedlund, Anna	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	NEG	POS	DEL	SSP
1694	Hesse, Nicole	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
4985	Hoover, Beverly	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	
5000	Hsu, Susan H.	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP SSO
2344	Hurley, Hartzman&	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	NEG	POS	POS	SSP SSO SBT
8093	Jindra, Peter	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
8074	JunHe,	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	NEG	POS	POS	SSP SSO
8035	Kanangat, Siva	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
8079	Kashi, Zahra M.	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
8086	Keming, Du	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
4337	Kim, Tai-Gyu	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
8084	Kimball, Pam	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	RT-PCR
8046	Kusnierczyk, Piotr	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	NEG	POS	POS	SSP
8071	Kwok, Janette	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO

Table 3. KIR Exchange Sample: KDNA #162 (Hispanic)

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	Consensus	POS [72]	NEG [72]	POS [72]	POS [70]	NEG [72]	POS [72]	POS [71]	POS [70]	NEG [72]	NEG [72]	NEG [72]	NEG [72]	POS[59] +FULL, DEL[13]	NEG [72]	POS [71]	POS[56]+ DEL[14]	
725	Lardy, N.M.	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
278	Lee, Jar-How	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
8088	Liu, Cong	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
8069	Maha, George	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	NEG	POS	DEL	SSP
5142	Marsh, Steven	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
8097	Meunier, Marie-Ch	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
8080	Monos, Dimitrios	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
8092	Morris, Gerald	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
8091	Murphey, Cathi	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
8083	Nikaein, Afzal	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	*003	
3966	Permpikul, Vejbaes	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
4021	Pollack, Marilyn S.	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
8030	Poulton, Kay	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
8050	Raja, Rajalingam	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	NEG	POS	DEL	SSP
3753	Reed, Elaine F.	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP SSO
3798	Reinsmoen, Nancy	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP SSO
8090	Rossi, Angela	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP SSO
8060	Rost, Klein &	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
8039	Scaff,Carolynn	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
4251	Schiller, Jennifer	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO RT-PCR
1426	Senitzer, David	POS	NEG	POS	POS	NEG	*00401, *01502	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	NEG	POS	DEL	SSP
8085	Shalini, Pereira	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	NGS
702	Spannagl, Michael	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP
3261	Stevens, Tait	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
3808	Thornton, Alycia	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	NEG	POS	DEL	SSP
5451	Tilanus, Marcel G.	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
8024	Trowsdale, John	POS	NEG	POS	NT	NEG	POS	NT	NT	NEG	NEG	NEG	NEG	WT, DEL	NEG	POS	DEL	SSP
8028	Uhrberg, Markus	POS	NEG	POS	NT	NEG	POS	POS	NT	NEG	NEG	NEG	NEG	POS	NEG	NT	NT	SSP
8023	Vilches, Carlos	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	FULL, DEL	NEG	POS	DEL	SSP
8098	Xu, Ri	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	DEL	NEG	POS	POS	SSO
1466	Yu, Neng	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSO
5282	Yu, Neng	POS	NEG	POS	POS	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	SSP

Table 4. KIR Exchange Sample: KDNA #163 (Filipino)

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method	
	Consensus	POS [72]	POS[72]	NEG [71]	POS [70]	POS[62]+ A,B[10]	POS [72]	POS [71]	POS [70]	POS [72]	POS [72]	POS [72]	POS [72]	POS [51] +FULL[21]	NEG [72]	POS [71]	POS [61]+ FULL, DEL[9]		
5488	Adams, Sharon	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP SSO	
8094	Ameen, Reem	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
5462	Arnold, Paula	POS	POS	NEG	POS	POS	POS	POS	POS	POS	*002- *008	POS	POS	FULL	NEG	POS	FULL, DEL	SSP	
5133	Askar, Medhat	POS	POS	NEG	POS	A,B	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	FULL, DEL	SSO NGS RT-PCR	
8073	Bengtsson, Mats	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
713	Bettinotti, Maria	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
8026	Bittencourt, Vanesa	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
8038	Cao, Kai	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSO	
8025	Carrington, Martin	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	NT	SSP	
1461	Cauwelier, Barbara	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	*00101- *004/ *006- *007	FULL	NEG	POS	POS	SSP
774	Cecka, J. Michael	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
3224	Chen, Dong-Feng	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO	
3632	Colombe, Beth W.	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	FULL, DEL	SSP	
189	Crowe, Deborah	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO	
1108	DeConinck, Martha	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
8095	denHollander, Neal	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
705	Ellis, Thomas	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
3410	Ellison, Cynthia	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
2549	Fagoaga, Omar	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
234	Fernandez, Casian	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
8053	Fernandez-Vina, M	POS	POS	NEG	POS	A, B	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP SSO RT-PCR	
762	Fischer, Gottfried	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP	
1778	Freed, Brian	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP	
8047	Fuessel, Monika	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
8076	Gaitonde, Sujata	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
1647	Gautreaux, Michael	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
8022	Hedlund, Anna	POS	POS	NEG	POS	A, B	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	FULL, DEL	SSP	
1694	Hesse, Nicole	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
4985	Hoover, Beverly	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
5000	Hsu, Susan H.	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO	
2344	Hurley, Hartzman &	POS	POS	NEG	POS	A*00501, B*00201	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP SSO SBT	
8093	Jindra, Peter	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
8074	JunHe,	POS	POS	NEG	POS	A, B	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP SSO	
8035	Kanangat, Siva	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
8079	Kashi, Zahra M.	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	

Table 4. KIR Exchange Sample: KDNA #163 (Filipino)

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method	
	Consensus	POS [72]	POS[72]	NEG [71]	POS [70]	POS[62]+ A,B[10]	POS [72]	POS [71]	POS [70]	POS [72]	POS [72]	POS [72]	POS [72]	POS [51] +FULL[21]	NEG [72]	POS [71]	POS [61]+ FULL, DEL[9]		
8086	Keming, Du	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
4337	Kim, Tai-Gyu	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
8084	Kimball, Pam	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	RT-PCR	
8046	Kusnierczyk, Piotr	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP	
8071	Kwok, Janette	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
725	Lardy, N.M.	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
278	Lee, Jar-How	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
8088	Liu, Cong	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
8069	Maha, George	POS	POS	NEG	POS	A, B	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	FULL, DEL	SSP	
5142	Marsh, Steven	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
8097	Meunier, Marie-Chr	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
8080	Monos, Dimitrios	POS	POS	NEG	POS	A, B	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
8092	Morris, Gerald	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
8091	Murphey, Cathi	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
8083	Nikaein, Afzal	POS	POS	NEG	POS	POS	*001	POS	POS	POS	*002	POS	POS	*001	NEG	POS	POS		
3966	Permpikul, Vejbaes	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
4021	Pollack, Marilyn S.	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
8030	Poulton, Kay	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
8050	Raja, Rajalingam	POS	POS	NEG	POS	A, B	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	FULL, DEL	SSP	
3753	Reed, Elaine F.	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO	
3798	Reinsmoen, Nancy	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO	
8090	Rossi, Angela	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO	
8060	Rost, Klein &	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
8039	Scalf, Carolyn	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
4251	Schiller, Jennifer	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO RT-PCR	
1426	Senitzer, David	POS	POS	NEG	POS	A*005, B*009/*016	*008, *01502	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	FULL, DEL	SSP
8085	Shalini, Pereira	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NGS	
702	Spannagl, Michael	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	
3261	Stevens, Tait	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
3808	Thornton, Alycia	POS	POS	NEG	POS	A, B	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	FULL, DEL	SSP	
5451	Tilanus, Marcel G.	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
8024	Trowsdale, John	POS	POS	NEG	NT	POS	POS	NT	NT	POS	POS	POS	POS	WT	NEG	POS	FULL, DEL	SSP	
8028	Uhrberg, Markus	POS	POS	NEG	NT	POS	POS	POS	NT	POS	POS	POS	POS	POS	NEG	NT	NT	SSP	
8023	Vilches, Carlos	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	FULL, DEL	SSP	
8098	Xu, Ri	POS	*001/ *002/ *003/ *005	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSO	
1466	Yu, Neng	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO	
5282	Yu, Neng	POS	POS	NEG	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP	

Table 5. KIR Exchange Sample: KDNA #164 (Black)

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	Consensus	POS [72]	POS [72]	POS [71]	POS [70]	POS[62]+ A,B[10]	POS [72]	POS [71]	POS [70]	POS [72]	POS [72]	POS [72]	POS [72]	POS[51] +DEL[21]	POS [72]	POS [71]	POS[56] +DEL[14]	
5488	Adams, Sharon	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP SSO
8094	Ameen, Reem	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
5462	Arnold, Paula	POS	POS	POS	POS	POS	POS	POS	POS	POS	*008	POS	POS	DEL	POS	POS	DEL	SSP
5133	Askar, Medhat	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	RT-PCR
8073	Bengtsson, Mats	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
713	Bettinotti, Maria	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8026	Bittencourt, Vanes	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8038	Cao, Kai	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	POS	SSO
8025	Carrington, Martin	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	NT	SSP
1461	Cauwelier, Barbara	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
774	Cecka, J. Michael	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
3224	Chen, Dong-Feng	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP SSO
3632	Colombe, Beth W.	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
189	Crowe, Deborah	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP SSO
1108	DeConinck, Martha	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	
8095	denHollander, Neal	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
705	Ellis, Thomas	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
3410	Ellison, Cynthia	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
2549	Fagoaga, Omar	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
234	Fernandez, Casian	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8053	Fernandez-Vina, M	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP SSO
762	Fischer, Gottfried	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
1778	Freed, Brian	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
8047	Fuessel, Monika	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8076	Gaitonde, Sujata	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
1647	Gautreaux, Michae	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8022	Hedlund, Anna	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
1694	Hesse, Nicole	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
4985	Hoover, Beverly	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	
5000	Hsu, Susan H.	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP SSO
2344	Hurley, Hartzman&	POS	POS	POS	POS	A*01201, B*00201	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	POS	SSP SSO SBT
8093	Jindra, Peter	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8074	JunHe,	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	POS	SSP SSO
8035	Kanangat, Siva	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8079	Kashi, Zahra M.	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8086	Keming, Du	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
4337	Kim, Tai-Gyu	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8084	Kimball, Pam	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	RT-PCR
8046	Kusnierczyk, Piotr	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	POS	SSP
8071	Kwok, Janette	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO

Table 5. KIR Exchange Sample: KDNA #164 (Black)

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
	Consensus	POS [72]	POS [72]	POS [71]	POS [70]	POS[62]+ A,B[10]	POS [72]	POS [71]	POS [70]	POS [72]	POS [72]	POS [72]	POS [72]	POS[51] +DEL[21]	POS [72]	POS [71]	POS[56] +DEL[14]	
725	Lardy, N.M.	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
278	Lee, Jar-How	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8088	Liu, Cong	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8069	Maha, George	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
5142	Marsh, Steven	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8097	Meunier, Marie-Chi	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8080	Monos, Dimitrios	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8092	Morris, Gerald	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8091	Murphey, Cathi	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8083	Nikaein, Afzal	POS	POS	NEG	POS	POS	*001	POS	POS	POS	*002	POS	POS	*003	POS	POS	POS	
3966	Permpikul, Vejbaes	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
4021	Pollack, Marilyn S.	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
8030	Poulton, Kay	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8050	Raja, Rajalingam	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
3753	Reed, Elaine F.	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP SSO
3798	Reinsmoen, Nancy	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP SSO
8090	Rossi, Angela	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP SSO
8060	Rost, Klein &	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8039	Scalf,Carolynn	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
4251	Schiller, Jennifer	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO RT-PCR
1426	Senitzer, David	POS	POS	POS	POS	B*010	*008	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
8085	Shalini, Pereira	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NGS
702	Spannagl, Michael	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP
3261	Stevens, Tait	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
3808	Thornton, Alycia	POS	POS	POS	POS	A, B	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
5451	Tilanus, Marcel G.	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
8024	Trowsdale, John	POS	POS	POS	NT	POS	POS	NT	NT	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
8028	Uhrberg, Markus	POS	POS	POS	NT	POS	POS	POS	NT	POS	POS	POS	POS	POS	POS	NT	NT	SSP
8023	Viiches, Carlos	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	DEL	SSP
8098	Xu, Ri	POS	*003/ *005	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	DEL	POS	POS	POS	SSO
1466	Yu, Neng	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSO
5282	Yu, Neng	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	SSP

Table 6. Participating Centers											
Name			City	State	Country	Name			City	State	Country
Adams	Sharon		Bethesda	MD		Kusnierczyk	Piotr	PhD	Wroclaw		Poland
Ameen	Reem	Dr	Jabriya		Kuwait	Kwok	Janette	Dr			Hong Kong
Arnold	Paula	PhD	Memphis	TN		Lacelle	Chantale	Ph.D.	Dallas	TX	
Askar	Medhat	Dr	Dallas	TX		Lardy	N.M.	Dr	Amsterdam		Netherlands
Bengtsson	Mats	MD	Uppsala		Sweden	Lee	Jar-How	Dr	Woodland Hills	CA	
Bettinotti	Maria	PhD	Baltimore	MD		Liu	Cong	PhD	Grand Rapids	MI	
Bittencourt	Vanessa Zaiatz		Dublin		Ireland	Maha	George	PhD	Burlington	NC	
Cao	Kai	Dr	Houston	TX		Marsh	Steven	Prof	London		United Kingdom
Carrington	Martin &	Drs	Frederick	MD		Meunier	Marie-Christine	PhD	Montreal, Quebec		Canada
Cauwelier	Barbara	Dr	Brugge		Belgium	Monos	Dimitrios	PhD	Philadelphia	PA	
Cecka	J. Michael	PhD	Honolulu	HI		Morris	Gerald	MD, PhD	San Diego		
Chen	Dong-Feng	PhD	Durham	NC		Murphey	Cathi	PhD	San Antonio	TX	
Colombe	Beth W.	PhD	Philadelphia	PA		Mytilineos	Joannis	MD	Ulm		Germany
Crowe	Deborah	PhD	Nashville	TN		Nikaein	Afzal	PhD	Dallas	TX	
DeConinck	Martha		Stamford	CT		Permpikul	Vejbaesya &	Drs	Bangkok		Thailand
denHollander	Neal	Dr	Toronto, ON		Canada	Pollack	Marilyn S.	PhD	Oakland	CA	
Ellis	Thomas	Dr	Madison	WI		Poulton	Kay		Manchester		United Kingdom
Ellison	Cynthia	PhD	Winnipeg, MB		Canada	Raja	Rajalingam	PhD	San Francisco	CA	
Fagoaga	Omar	Dr	Detroit	MI		Reed	Elaine F.	PhD	Los Angeles	CA	
Fernandez	Casiana		Miami	FL		Reinsmoen	Nancy L.	PhD	Los Angeles	CA	
Fernandez-Vina	Marcelo	Dr	Palo Alto	CA		Roberts	Chrissy H.		London		United Kingdom
Fischer	Gottfried	Dr	Vienna		Austria	Rossi	Angela	Dr	Piacenza		Italy
Freed	Brian	PhD	Aurora	CO		Rost	Klein &	Drs	Martinsried		Germany
Fuessel	Monika	PhD	Dresden		Germany	Scalf	Carolynn		Minneapolis	MN	
Gaitonde	Sujata	Dr	Chicago	IL		Schiller	Jennifer	PhD	Milwaukee	WI	
Gautreaux	Michael	Dr	Winston-Salem	NC		Senitzer	David	PhD	Duarte	CA	
Gizzarelli	Laila		Murdoch		Australia	Shalini	Pereira		Seattle	WA	
Hedlund	Anna		Stockholm		Sweden	Shanahan	Thomas C.	PhD	Buffalo	NY	
Hesse	Nicole		Lich		Germany	Spannagl	Michael	Prof	Munich		Germany
Hoover	Beverly		St Louis	MO		Stevens	Tait	Dr	Loma Linda	CA	
Hsu	Susan H.	PhD	Philadelphia	PA		Thornton	Alycia		Brisbane QLD		Australia
Hurley	Hartzman&	Drs	Rockville	MD		Tilanus	Marcel G.J.	Prof Dr	Maastricht		Netherlands
Jindra	Peter	PhD	Houston	TX		Trowsdale	John	Prof	Cambridge		United Kingdom
JunHe			Beijing		China	Uhrberg	Markus	Dr	Dusseldorf		Germany
Kanangat	Siva	PhD	Chicago	IL		Vilches	Carlos	Dr	Majadahonda		Spain
Kashi	Zahra M.	Dr	Portland	OR		Xu	Ri		BDA Beijing		China
Keming	Du		Shanghai		China	Yu	Neng	Dr	Dedham	MA	
Kim	Tai-Gyu	Prof	Seoul		S. Korea	Yu	Neng	Dr	Worcester	MA	
Kimball	Pam	Dr	Richmond	VA							