

REPORT OF THE 34th UCLA International KIR Exchange

AUGUST 6, 2014

KIR

133–136

Dear Colleagues:

For the 34th KIR Exchange, 4 DNA samples (KDNA#133-136) were shipped to participating laboratories on May 7, 2014. A total of 70 laboratories submitted their KIR typing results. The majority of the laboratories used either commercial or in-house developed sequence-specific primer (SSP) based PCR and sequence-specific oligonucleotide probe (SSOP) typing systems.

The results for the 34th 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 KIR2DL5, 3DL1, 2DS1, 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 discrepancy for 5 of the 16 tested KIR loci (KIR2DL1, 2DL4, 3DL1, 3DL3, and 2DP1). Discrepant results from the consensus typing are italicized in tables 1-5 and described in the summation for each sample. Discrepancies at the allele level are not italicized.

We thank you for your continued participation in the UCLA KIR Exchange program.

KIR Exchange Sample: KDNA #133:

The consensus KIR type for this Black sample is KIR2DL1-2DL2-2DL4-2DL5B-3DL1-3DL2-3DL3-2DS2-2DS4DEL-2DS5-2DP1-3DP1DEL. One lab reported this sample as negative for 2DL2, and positive for 2DS1. Three labs reported it as positive for 2DL3, and 3 labs reported it as positive for 3DS1. 2DS3 was reported as positive by 1 lab, 2DS5 was reported as negative by 2 labs, and 1 lab reported 3DP1 as negative. The genotype in this cell is observed in Iranian Arab populations, 1.3% (1, 2). This is the first time this genotype has been typed in the KIR Exchange.

Vilches noted that this sample may have a deletion of the central framework genes in 1 haplotype. Hartzman and Hurley also noted the deletion and added that the sample “carries a base substitution in 2DL5 5’UTR and an unexpected 2DS1.” Turner and Arnold commented on the unusual KIR haplotype of this sample, noting that in the absence of 3DS1 or 2DL5A, it was positive for KIR2DS1. The genotype in this cell is observed most frequently among the Cook Island populations in Southeast Asia, 8.1%, and among Amazonian Amerindians, 10% (3, 4).

KIR Exchange Sample: KDNA #134:

The consensus KIR type for this Asian sample is KIR2DL1-2DL2-2DL3-2DL4-2DL5B-3DL1-3DL2-3DL3-2DS1-2DS1-2DS2-2DS4DEL-2DS5-2DP1-3DP1DEL. Two labs reported this sample as positive for 3DS1 and 1 lab reported it as negative for 2DL2. One lab reported 2DL3, 3DL2, and 2DS4 as negative, while another lab reported this sample as negative for 2DS2, 2DS5, and 3DP1.

KIR Exchange Sample: KDNA #135:

The consensus KIR type for this sample is KIR2DL1-2DL2-2DL3-2DL4-2DL5A-3DL1-3DL2-3DL3-3DS1-2DS1-2DS2-2DS3-2DS4FULL-2DP1-3DP1FULL&DEL. One lab reported this sample as negative for 2DL3, 3DL2, and 2DS4, and 1 lab reported it as negative for 2DS1 and 2DS4. This sample is observed in all populations except Native Americans, with the highest frequencies among Australian Aborigines and Basque populations, 14.9% and 10% (5, 6).

KIR Exchange Sample: KDNA # 0136:

The consensus KIR type for this Asian sample KIR2DL1-2DL2-2DL3-2DL4-2DL5B-3DL1-3DL2-3DL3-3DS1-2DS2-2DS3-2DS4FULL-2DP1-3DP1FULL&DEL. Two labs reported this sample as negative for 2DL3, 2 reported it as negative for 2DL5, and 2 reported it as negative for 3DS1. KIR2DS3 was reported as negative by 2 labs, and 2DS4 was reported as negative by 2 labs. One lab reported 3DL2 as negative, 1 reported 2DS1 as positive, and another reported 2DS5 as positive.

Vilches commented that this sample may carry a duplication of the central framework genes, associated with KIR3DP1*004, in one haplotype. Hartzman and Hurley provided similar comments, noting that the sample carries a 2DL5A/3DP1 fusion gene and that the haplotype will likely carry a duplication of some genes. Turner and Arnold further noted this sample has an unusual haplotype as it is positive for KIR3DS1 in the absence of 2DL5A and 2DS1. This genotype is most frequently observed in Asian Indian, 8.6%, and Caucasian, 5.8%, populations. (2, 7).

References:

1. Ashouri E, Farjadian S, Reed EF, et al. KIR gene content diversity in four Iranian populations. *Immunogenetics* 2009;61:483-492.
2. Rajalingam, R, Du, Z, Meenagh, A, et al. Distinct diversity of KIR genes in three southern Indian populations: comparison with world populations revealed a link between KIR gene content and pre-historic human migrations. *Immunogenetics* 2008;60:207-217.
3. Norman PJ, Carrington CV, Byng M, et al. Natural killer cell immunoglobulin-like receptor (KIR) locus profiles in African and South Asian populations. *Genes Immun* 2002;3:86-95.
4. Ewerton PD, Leite Mde M, Magalhaes M, Sena L, Melo dos Santos EJ. Amazonian Amerindians exhibit high variability of KIR profiles. *Immunogenetics* 2007;59:625-630.
5. Toneva M, Lepage V, Lafay G, et al. Genomic diversity of natural killer cell receptor genes in three populations. *Tissue Antigens* 2001;57:358-362.
6. Santin I, de Nanclares GP, Calvo B, et al. Killer Cell Immunoglobulin-Like Receptor (KIR) Genes in the Basque Population: Association Study of KIR Gene Contents With Type 1 Diabetes Mellitus. *Hum Immunol* 2006;67:118-224.
7. Middleton D, Meenagh A, Moscoso J, et al. Killer immunoglobulin receptor gene and allele frequencies in Caucasoid, Oriental, and Black populations from different continents. *Tissue Antigens* 2008;71:105-113.

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Table 1. Summary of the 34rd KIR Exchange (KDNA #133-136)

KIR Ex.	DNA	Reporting Labs	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1
#34	133	70	POS[69] NT[1]	POS[68] <i>NEG[1]</i> NT[1]	NEG[66] <i>POS[3]</i> NT[1]	POS[67] NT[3]	POS[47] B[20] B*004[1] B*004, B*004/ *008/ *013/ *014[1] NT[1]	POS[67] *001, *007[1] *001[1] NT[1]	POS[68] NT[2]	POS[67] NT[3]	NEG[66] <i>POS[3]</i> NT[1]	NEG[68] <i>POS[1]</i> NT[1]	POS[69] NT[1]	NEG[68] <i>POS[1]</i> NT[1]	POS[41] DEL[27] DEL, FULL[1] NT[1]	POS[67] NT[1] <i>NEG[2]</i>	POS[67] NT[3]	POS[48] DEL[17] NT[4] <i>NEG[1]</i>
	134	70	POS[70]	POS[69] <i>NEG[1]</i>	POS[69] <i>NEG[1]</i>	POS[68] NT[2]	POS[49] B[19] B*006[1] B*00601[1]	POS[68] *001[1] *001, *005[1]	POS[68] <i>NEG[1]</i> NT[1]	POS[68] NT[2]	NEG[68] <i>POS[2]</i>	POS[64] *002[1] *0020101- *008[1] *002-*008[3] <i>NEG[1]</i>	POS[69] <i>NEG[1]</i>	NEG[70]	POS[41] DEL[27] DEL, FULL[1] <i>NEG[1]</i>	POS[69] <i>NEG[1]</i>	POS[68] NT[2]	POS[49] DEL[17] <i>NEG[1]</i> NT[3]
	135	70	POS[70]	POS[70]	POS[69] <i>NEG[1]</i>	POS[68] NT[2]	POS[48] A[20] A*00501[1] A*009/ *016[1]	POS[68] *002[1] *001[1]	POS[68] <i>NEG[1]</i> NT[1]	POS[68] NT[2]	POS[70]	POS[64] *002-*008[3] *0020101- *008[1] *002[1] <i>NEG[1]</i>	POS[70]	POS[70]	POS[40] FULL[26] FULL, DEL [1] WT[1] <i>NEG[2]</i>	NEG[70]	POS[68] NT[2]	POS[56] FULL, DEL[11] NT[3]
	136	70	POS[70]	POS[70]	POS[68] <i>NEG[2]</i>	POS[68] NT[2]	POS[47] B[19] B*00201[1] B*009/ *016[1] <i>NEG[2]</i>	POS[68] *01502[1] *001[1]	POS[68] <i>NEG[1]</i> <i>NT[1]</i>	POS[68] NT[2]	POS[68] <i>NEG[2]</i>	NEG[69] <i>POS[1]</i>	POS[70]	POS[68] <i>NEG[2]</i>	POS[41] FULL[25] WT[1] DEL[1] <i>NEG[2]</i>	NEG[69] <i>POS[1]</i>	POS[68] NT[2]	POS[57] FUL,DEL[9] FULL[1] NT[3]

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
 SSP - Sequence-specific priming-based typing
 SSOP - Sequence-specific oligonucleotide probing-based typing
 RSSOP - Reverse Sequence-specific oligonucleotide probing-based typing
 SBT - Sequencing-based typing

Table 2. KIR Exchange Sample: KDNA #133

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
5488	Adams, Sharon	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	DEL	SSP
234	Amador, Alexand	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
16	Askar, Medhat Z.	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	DEL	SSP SSO
8073	Bengtsson, Mats	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
8038	Cao, Kai	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	POS	SSO
8025	Carrington, Marti	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	NT	SSP
1461	Cauwelier, Barba	POS	POS	NEG	POS	B	POS	POS	POS	POS	NEG	POS	NEG	DEL	POS	POS	DEL	SSP
774	Cecka, J. Michael	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	
3632	Colombe, Beth V	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	DEL	SSP
189	Crowe, Deborah	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP SSO
8039	Davidson, Maurir	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
124	De Santis, Diann	POS	NEG	NEG	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	NT	NT	SSP
8031	Dinauer, David	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	DEL	SSP
705	Ellis, Thomas	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
8051	Endres, Robert C	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	DEL	SSP
2549	Fagoaga, Omar	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
762	Fischer, Gottfried	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	DEL	SSP
1778	Freed, Brian	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
8047	Fuessel, Monika	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
8026	Gardiner, Clair M	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	NEG	POS	NEG	SSP
1647	Gautreaux, Mich	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
4985	Graff, Ralph J.	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
8022	Hedlund, Anna	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
1694	Hesse, Kissel &	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
3808	Hogan, Patrick	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	DEL	SSP
5000	Hsu, Susan H.	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP SSO
2344	Hurley, Hartzmar	POS	POS	POS	POS	B*004	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	POS	SSP SSO
8077	IMMCO Diagnos	POS	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	POS	NEG	POS	POS	POS	POS	SSP SSO
3261	Iwaki, Yuichi	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP SSO
794	Jaatinen, Taina	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	POS	SSP
8076	Jaramillo, Gaiton	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	POS	SSP
859	Kamoun, Malek	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	
8035	Kanangat, Siva	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
8079	Kashi, Zahra M.	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP SSO
4337	Kim, Tai-Gyu	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
8084	Kimball, Pam	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
8046	Kusnierczyk, Pio	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	POS	SSP
8071	Kwok, Janette	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	SSO
791	Lacelle, Chantale	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	DEL	
278	Lee, Jar-How	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
8069	Maha, George	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	DEL	SSP

Table 2. KIR Exchange Sample: KDNA #133

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
8067	Marino, Susana	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP SSO
5142	Marsh, Steven	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	*003/ *004/ *006/ *007	POS	POS	*003	SSP
733	Mytilineos, Joan	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	POS	SSP
5231	Nelson, Karen	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	
8083	Nikaein, Afzal	POS	POS	POS	POS	B	*001	POS	POS	NEG	NEG	POS	NEG	*003	POS	POS	POS	SSP
1108	Osada, Masako	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	DEL, FULL	POS	POS	POS	SSO
3966	Permpikul, Vejba	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
8030	Poulton, Kay	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
8050	Raja, Rajalingam	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	DEL	SSP
3753	Reed, Elaine F.	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP SSO
3798	Reinsmoen, Nan	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	
8060	Rost, Klein &	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
4251	Schiller, Jennifer	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
3410	Schroeder, M.L.	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	DEL	SSP
1426	Senitzer, David	POS	POS	NEG	POS	B*004, B*004/ *008/ *013/ *014	*001, *007	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	*003	SSP
8085	Shalini, Pereira	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	
702	Spannagl, Micha	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP SSO
2518	Tambur, Anat	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
769	Tavoularis, Sofia	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	POS	SSP SSO
5451	Tilanus, Marcel C	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSO
8024	Trowsdale, John	POS	POS	NEG	NT	POS	POS	NT	NT	NEG	NEG	POS	NEG	DEL	POS	POS	DEL	SSP
5462	Turner, E.V.	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	POS	SSP
8053	Tyan, Fernandez	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	DEL	SSP SSO
8028	Uhrberg, Markus	POS	POS	NEG	NT	POS	POS	POS	NT	NEG	NEG	POS	NEG	POS	POS	NT	NT	SSP
3775	Vidan-Jeras, Bla	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	
8023	Vilches, Carlos	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	DEL	
5282	Yu, Neng	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
1466	Yu, Neng	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP
713	Zachary, Andrea	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	NEG	POS	POS	POS	POS	SSP SSO

Table 3. KIR Exchange Sample: KDNA #134

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
5488	Adams, Sharon	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP
234	Amador, Alexand	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
16	Askar, Medhat Z	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP SSO
8073	Bengtsson, Mats	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
8038	Cao, Kai	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	POS	SSO
8025	Carrington, Marti	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	NT	SSP
1461	Cauwelier, Barba	POS	POS	POS	POS	B	POS	POS	POS	POS	POS	POS	NEG	DEL	POS	POS	DEL	SSP
774	Cecka, J. Michael	POS	POS	NEG	POS	POS	POS	NEG	POS	NEG	POS	POS	NEG	NEG	POS	POS	POS	
3632	Colombe, Beth V	POS	POS	POS	POS	B	POS	POS	POS	NEG	*002-*008	POS	NEG	DEL	POS	POS	DEL	SSP
189	Crowe, Deborah	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP SSO
8039	Davidson, Maurir	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
124	De Santis, Diann	POS	NEG	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	NT	NT	SSP
8031	Dinauer, David	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP
705	Ellis, Thomas	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
8051	Endres, Robert C	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP
2549	Fagoaga, Omar	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
762	Fischer, Gottfried	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP
1778	Freed, Brian	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
8047	Fuessel, Monika	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
8026	Gardiner, Clair M	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	NEG	SSP
1647	Gautreaux, Micha	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
4985	Graff, Ralph J.	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
8022	Hedlund, Anna	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
1694	Hesse, Kissel &	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
3808	Hogan, Patrick	POS	POS	POS	POS	B	POS	POS	POS	NEG	*0020101- *008	POS	NEG	DEL	POS	POS	DEL	SSP
5000	Hsu, Susan H.	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP SSO
2344	Hurley, Hartzmar	POS	POS	POS	POS	B*00601	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	POS	SSP SSO
8077	IMMCO Diagnost	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	POS	SSP SSO
3261	Iwaki, Yuichi	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP SSO
794	Jaatinen, Taina	POS	POS	POS	POS	B	POS	POS	POS	NEG	*002-*008	POS	NEG	DEL	POS	POS	POS	SSP
8076	Jaramillo, Gaiton	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	POS	SSP
859	Kamoun, Malek	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	
8035	Kanangat, Siva	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
8079	Kashi, Zahra M.	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP SSO
4337	Kim, Tai-Gyu	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
8084	Kimball, Pam	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP

Table 3. KIR Exchange Sample: KDNA #134

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
8046	Kusnierczyk, Pio	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	POS	SSP
8071	Kwok, Janette	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
791	Lacelle, Chantale	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	
278	Lee, Jar-How	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
8069	Maha, George	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP
8067	Marino, Susana	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP SSO
5142	Marsh, Steven	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	*003/ *004/ *006/ *007	POS	POS	*003	SSP
733	Mytilineos, Joanr	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	POS	SSP
5231	Nelson, Karen	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	
8083	Nikaein, Afzal	POS	POS	POS	POS	B	*001	POS	POS	NEG	*002	POS	NEG	*003	POS	POS	POS	SSP
1108	Osada, Masako	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL, FULL	POS	POS	POS	SSO
3966	Permpikul, Vejba	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
8030	Poulton, Kay	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
8050	Raja, Rajalingam	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP
3753	Reed, Elaine F.	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP SSO
3798	Reinsmoen, Nan	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	
8060	Rost, Klein &	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
4251	Schiller, Jennifer	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
3410	Schroeder, M.L.	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP
1426	Senitzer, David	POS	POS	POS	POS	B*006	*001, *005	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	*003	SSP
8085	Shalini, Pereira	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	
702	Spannagl, Micha	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP SSO
2518	Tambur, Anat	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
769	Tavoularis, Sofia	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	POS	SSP SSO
5451	Tilanus, Marcel C	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSO
8024	Trowsdale, John	POS	POS	POS	NT	POS	POS	NT	NT	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP
5462	Turner, E.V.	POS	POS	POS	POS	B	POS	POS	POS	NEG	*002-*008	POS	NEG	DEL	POS	POS	POS	SSP
8053	Tyan, Fernandez	POS	POS	POS	POS	B	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	SSP SSO
8028	Uhrberg, Markus	POS	POS	POS	NT	POS	POS	POS	NT	NEG	POS	POS	NEG	POS	POS	NT	NT	SSP
3775	Vidan-Jeras, Bla	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	
8023	Vilches, Carlos	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	DEL	POS	POS	DEL	
5282	Yu, Neng	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
1466	Yu, Neng	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP
713	Zachary, Andrea	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	POS	POS	POS	POS	SSP SSO

Table 4. KIR Exchange Sample: KDNA #135

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
5488	Adams, Sharon	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP
234	Amador, Alexand	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
16	Askar, Medhat Z.	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	FULL, DEL	SSP SSO
8073	Bengtsson, Mats	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
8038	Cao, Kai	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSO
8025	Carrington, Marti	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	NT	SSP
1461	Cauwelier, Barba	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP
774	Cecka, J. Michael	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	
3632	Colombe, Beth V	POS	POS	POS	POS	A	POS	POS	POS	POS	*002-*008	POS	POS	FULL	NEG	POS	FULL, DEL	SSP
189	Crowe, Deborah	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO
8039	Davidson, Maurir	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
124	De Santis, Diann	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NT	NT	SSP
8031	Dinauer, David	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	FULL, DEL	SSP
705	Ellis, Thomas	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
8051	Endres, Robert C	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	FULL, DEL	SSP
2549	Fagoaga, Omar	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
762	Fischer, Gottfried	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP
1778	Freed, Brian	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
8047	Fuessel, Monika	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
8026	Gardiner, Clair M	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	NEG	POS	POS	SSP
1647	Gautreaux, Mich	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
4985	Graff, Ralph J.	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
8022	Hedlund, Anna	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
1694	Hesse, Kissel &	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
3808	Hogan, Patrick	POS	POS	POS	POS	A	POS	POS	POS	POS	*0020101- *008	POS	POS	FULL	NEG	POS	FULL, DEL	SSP
5000	Hsu, Susan H.	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO
2344	Hurley, Hartzmar	POS	POS	POS	POS	A*00501	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP SSO
8077	IMMCO Diagnos	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO
3261	Iwaki, Yuichi	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO
794	Jaatinen, Taina	POS	POS	POS	POS	A	POS	POS	POS	POS	*002-*008	POS	POS	FULL	NEG	POS	POS	SSP
8076	Jaramillo, Gaiton	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP
859	Kamoun, Malek	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	
8035	Kanangat, Siva	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
8079	Kashi, Zahra M.	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO
4337	Kim, Tai-Gyu	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
8084	Kimball, Pam	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
8046	Kusnierczyk, Pio	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP
8071	Kwok, Janette	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
791	Lacelle, Chantale	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	FULL, DEL	

Table 4. KIR Exchange Sample: KDNA #135

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
278	Lee, Jar-How	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
8069	Maha, George	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	FULL, DEL	SSP
8067	Marino, Susana	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO
5142	Marsh, Steven	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	*001	NEG	POS	*001/ *002/ *004,*003	SSP
733	Mytilineos, Joanr	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	FULL, DEL	NEG	POS	POS	SSP
5231	Nelson, Karen	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	
8083	Nikaein, Afzal	POS	POS	POS	POS	A	*001	POS	POS	POS	*002	POS	POS	*001	NEG	POS	POS	SSP
1108	Osada, Masako	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSO
3966	Permpikul, Vejba	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
8030	Poulton, Kay	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
8050	Raja, Rajalingam	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP
3753	Reed, Elaine F.	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO
3798	Reinsmoen, Nan	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	
8060	Rost, Klein &	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
4251	Schiller, Jennifer	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
3410	Schroeder, M.L.	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP
1426	Senitzer, David	POS	POS	POS	POS	A*009/ *016	*002	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	*003	SSP
8085	Shalini, Pereira	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	
702	Spannagl, Micha	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO
2518	Tambur, Anat	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
769	Tavoularis, Sofia	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	POS	SSP SSO
5451	Tilanus, Marcel C	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSO
8024	Trowsdale, John	POS	POS	POS	NT	POS	POS	NT	NT	POS	POS	POS	POS	WT	NEG	POS	FULL, DEL	SSP
5462	Turner, E.V.	POS	POS	POS	POS	A	POS	POS	POS	POS	*002-*008	POS	POS	FULL	NEG	POS	POS	SSP
8053	Tyan, Fernandez	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	FUL	NEG	POS	POS	SSP SSO
8028	Uhrberg, Markus	POS	POS	POS	NT	POS	POS	POS	NT	POS	POS	POS	POS	POS	NEG	NT	NT	SSP
3775	Vidan-Jeras, Bla	POS	POS	POS	POS	A	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	
8023	Vilches, Carlos	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	FULL	NEG	POS	FULL,DEL	
5282	Yu, Neng	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
1466	Yu, Neng	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP
713	Zachary, Andrea	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	SSP SSO

Table 5. KIR Exchange Sample: KDNA #136

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
5488	Adams, Sharon	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	POS	SSP
234	Amador, Alexand	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSO
16	Askar, Medhat Z.	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	FULL, DEL	SSP SSO
8073	Bengtsson, Mats	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP
8038	Cao, Kai	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	POS	SSO
8025	Carrington, Marti	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	NT	SSP
1461	Cauwelier, Barba	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	POS	SSP
774	Cecka, J. Michael	POS	POS	NEG	POS	NEG	POS	NEG	POS	POS	NEG	POS	NEG	NEG	NEG	POS	POS	
3632	Colombe, Beth V	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	FULL, DEL	SSP
189	Crowe, Deborah	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP SSO
8039	Davidson, Maurir	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSO
124	De Santis, Diann	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	NT	NT	SSP
8031	Dinauer, David	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	FULL, DEL	SSP
705	Ellis, Thomas	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSO
8051	Endres, Robert C	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	FULL, DEL	SSP
2549	Fagoaga, Omar	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP
762	Fischer, Gottfried	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	POS	SSP
1778	Freed, Brian	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP
8047	Fuessel, Monika	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP
8026	Gardiner, Clair M	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	NEG	NEG	POS	POS	SSP
1647	Gautreaux, Mich	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP
4985	Graff, Ralph J.	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP
8022	Hedlund, Anna	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP
1694	Hesse, Kissel &	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP
3808	Hogan, Patrick	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	FULL, DEL	SSP
5000	Hsu, Susan H.	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP SSO
2344	Hurley, Hartzmar	POS	POS	POS	POS	B*00201	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	POS	SSP SSO
8077	IMMCO Diagnos	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP SSO
3261	Iwaki, Yuichi	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP SSO
794	Jaatinen, Taina	POS	POS	NEG	POS	B	POS	POS	POS	NEG	NEG	POS	NEG	DEL	POS	POS	POS	SSP
8076	Jaramillo, Gaiton	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	POS	SSP
859	Kamoun, Malek	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP
8035	Kanangat, Siva	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSO
8079	Kashi, Zahra M.	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP SSO
4337	Kim, Tai-Gyu	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP
8084	Kimball, Pam	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP
8046	Kusnierczyk, Pio	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	POS	SSP
8071	Kwok, Janette	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSO
791	Lacelle, Chantale	POS	POS	POS	POS	B	POS	POS	POS	NEG	NEG	POS	POS	FULL	NEG	POS	FULL, DEL	
278	Lee, Jar-How	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSO

Table 5. KIR Exchange Sample: KDNA #136

CTR	Investigator	2DL1	2DL2	2DL3	2DL4	2DL5	3DL1	3DL2	3DL3	3DS1	2DS1	2DS2	2DS3	2DS4	2DS5	2DP1	3DP1	Method
8069	Maha, George	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	FULL, DEL	SSP
8067	Marino, Susana	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP SSO
5142	Marsh, Steven	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	*001	NEG	POS	*001/ *002/ *004, *003	SSP
733	Mytilineos, Joanr	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	POS	SSP
5231	Nelson, Karen	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	
8083	Nikaein, Afzal	POS	POS	POS	POS	B	*001	POS	POS	POS	NEG	POS	POS	*001	NEG	POS	POS	SSP
1108	Osada, Masako	POS	POS	POS	POS	NEG	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	POS	SSO
3966	Permpikul, Vejba	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP
8030	Poulton, Kay	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSO
8050	Raja, Rajalingam	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	POS	SSP
3753	Reed, Elaine F.	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP SSO
3798	Reinsmoen, Nan	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	
8060	Rost, Klein &	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSO
4251	Schiller, Jennifer	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSO
3410	Schroeder, M.L.	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	POS	SSP
1426	Senitzer, David	POS	POS	POS	POS	B*009/ *016	*01502	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	*003	SSP
8085	Shalini, Pereira	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	
702	Spannagl, Micha	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP SSO
2518	Tambur, Anat	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSO
769	Tavoularis, Sofia	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	POS	SSP SSO
5451	Tilanus, Marcel C	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSO
8024	Trowsdale, John	POS	POS	POS	NT	POS	POS	NT	NT	POS	NEG	POS	POS	WT	NEG	POS	FULL, DEL	SSP
5462	Turner, E.V.	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	POS	SSP
8053	Tyan, Fernandez	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	FUL	NEG	POS	POS	SSP SSO
8028	Uhrberg, Markus	POS	POS	POS	NT	POS	POS	POS	NT	POS	NEG	POS	POS	POS	NEG	NT	NT	SSP
3775	Vidan-Jeras, Bla	POS	POS	POS	POS	B	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	
8023	Vilches, Carlos	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	FULL	NEG	POS	FULL,DEL	
1466	Yu, Neng	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP
5282	Yu, Neng	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP
713	Zachary, Andrea	POS	POS	POS	POS	POS	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS	SSP SSO

PARTICIPATING CENTERS

Name			City/State	Country	Name			City/State	Country
Adams	Sharon		Bethesda MD		Kimball	Pam	PhD	Richmond VA	
Nikaein	Afzal	PhD	Buffalo NY		Klein	Rost/	Drs	Martinsried	Germany
Amador	Alexandra		Miami FL		Kusnierczyk	Piotr	PhD	Wroclaw	Poland
Askar	Medhat	MD PhD	Cleveland OH		Kwok	Janette	Dr	Hong Kong	
Balazs	Ray/		Stamford CT		Lacelle	Chantale	PhD	Dallas TX	
Cao	Kai	Dr	Houston TX		Lee	Jar-How	Dr	Canoga Park CA	
Carrington/Martin		Drs	Frederick MD		Maha	George	PhD	Burlington NC	
Cauwelier	Barbara	Dr	Brugge	Belgium	Marino	Susana R		Chicago IL	
Cecka	J. Michael	PhD	Honolulu HI		Marsh	Steven	Dr	London	England
Colombe	Beth	PhD	Philadelphia PA		Masako	Osada		Stamford CT	
Crowe	Deborah	PhD	Nashville TN		Mytilineos	Joannis	MD	Ulm	Germany
Davidson	Maureen		Minneapolis MN		Nelson	Karen		Seattle WA	
De Santis	Dianne	Dr	Perth	Australia	Nikaein	Afzal	PhD	Dallas TX	
Dinauer	David		Brown Deer WI		Poulton	Kay V.	Dr	Manchester	England
Ellis	Thomas	Dr	Madison WI		Raja	Rajalingam	Dr	San Francisco CA	
Endres	Robert	Dr	Tempe AZ		Reed	Elaine F.	Dr	Los Angeles CA	
Fagoaga	Omar	Dr	Detroit MI		Roberts	Chrissy H.		London	England
Fischer	Gottfried	Dr	Vienna	Austria	Schiller	Jennifer	PhD	Milwaukee WI	
Freed	Brian	Dr	Aurora CO		Schroeder	M.L.	MD	Winnipeg MB	Canada
Fuessel	Monika	PhD	Dresden	Germany	Senitzer	David	PhD	Duarte CA	
Gardiner	Clair M.	PhD	Dublin	Ireland	Shalini	Pereira		Seattle WA	
Gautreaux	Michael	Dr	Winston-Salem NC		Shanahan	Thomas	PhD	Buffalo NY	
Graff	Ralph J.	Dr	St Louis MO		Spannagl	Michael	Dr	Munchen	Germany
Hedlund	Ann		Saltsjobaden	Sweden	Tambur	Anat		Chicago IL	
Kissel	Hesse &		Lich	Germany	Tavoularis	Sofia	Dr	Ottawa ON	Canada
Hogan	Patrick	Dr	Herston	Australia	Tiercy	Jean-Marie	Dr	Geneva	Switzerland
Hsu	Susan H.	PhD	Philadelphia PA		Tilanus	Marcel G.J.	Dr	Maastricht	Germany
Hartzman	Hurley/	Drs	Rockville MD		Trowsdale	John	Prof	Cambridge	England
IMMCO Diagnostics			Buffalo NY		Turner	E.V.	PhD	Memphis TN	
Iwaki	Yui	Dr	San Bernardino CA		Tyan	Fernandez-Vina/	Dr	Palo Alto CA	
Jaatinene	Taina	Dr	Helsinki	Finland	Uhrberg	Markus	Dr	Dusseldorf	Germany
Jaramillo	Gaitonde&	Drs	Chicago IL		Vidan-Jeras	Blanka		Ljubljana	Slovenia
Pan	Jie		Shanghai	China	Vilches	Carlos	Dr	Madrid	Spain
Kamoun	Malek	MD	Philadelphia PA		Yu	Neng	MD	Dedham MA	
Kanangat	Siva	PhD	Chicago IL		Yu	Neng	MD	Worcester MA	
Kashi	Zahra	Dr	Portland OR		Zachary	Andrea	PhD	Baltimore MD	
Kim	Tai-Gyu	Prof	Seoul	S. Korea					