
Supplementary information

**Antibodies against endogenous retroviruses
promote lung cancer immunotherapy**

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Table S1. HERV integrations with an Env open-reading frame analysed in this study.

Family	Subfamily	Chromosome	Start position	End position	Previously used aliases
LTR/ERV1	HERV17-int~LTR17	7	92467971	92475579	W; ERVW-1; Syncytin-1
LTR/ERV1	HERV17-int~LTR17	X	107052131	107054170	W2; ERVW-2; envW2
LTR/ERV1	HERV3-int~LTR4	7	64990324	64999936	R; ERV3-1; erv-3
LTR/ERV1	HERVE_a-int~LTR2	6	88662159	88670500	CTRCC; envE
LTR/ERV1	HERVE-int~LTR2C	17	28230519	28239339	E4-1; envE
LTR/ERV1	HERV-Fc1-int~HERV-Fc1_LTR1	7	153409350	153414153	F(c)2; ERVFC1-1; envFc2; ERVFC1
LTR/ERV1	HERV-Fc2-int~HERV-Fc2_LTR	X	97841482	97849424	F(c)1; envFc1; ERVFc1
LTR/ERV1	HERVHF19-int	X	72223661	72224476	HERV-HF 46; envHF46; HF46
LTR/ERV1	HERVHF19-int	X	72228335	72229908	HERV-HF 46; envHF46; HF46
LTR/ERV1	HERVH-int~LTR7	12	18195824	18203727	HERV-H 34; envH34; H34
LTR/ERV1	HERVH-int~LTR7	2	154867386	154874560	H3; envH3 (p59)
LTR/ERV1	HERVH-int~LTR7B	3	166822581	166829713	H2; envH2 (p60)
LTR/ERV1	HERVH-int~LTR7B	6	77658021	77666441	HERV-H 22; envH22; H22
LTR/ERV1	HERVH-int~LTR7C	6	40861398	40868318	HERV-H 21; envH21; H21
LTR/ERV1	HERVH-int~LTR7Y	2	165707550	165716198	H1; envH1 (p62)
LTR/ERV1	HERVIP10B3-int	14	92622868	92625542	P(b); Syncytin-3
LTR/ERV1	HERVS71-int~LTR6A	19	20362026	20371352	T; ERVS71-1; envT
LTR/ERV1	LTR10C	X	72227746	72228334	HERV-HF 46
LTR/ERV1	LTR60~MER66-int	19	53014945	53015888	V1; ERVV-1; envV1
LTR/ERV1	LTR60~MER66-int	19	53050106	53051058	V2; ERVV-2; envV2
LTR/ERV1	MER34-int	4	52743873	52746178	MER34; envHEMO; ERVMER34-1
LTR/ERV1	MER50-int	6	11103445	11112217	FRD; ERVFRD-1; Syncytin-2
LTR/ERV1	PABL_B-int	3	16766325	16772531	R(b) {ERVPALEB-1}
LTR/ERVK	HERVK-int	1	155629344	155634870	K102, K(C1b), K50a, ERVK-7
LTR/ERVK	HERVK-int	19	27638585	27641550	K3:HERV-K17833 C19; ERVK-19; envK3;
LTR/ERVK	HERVK-int~LTR5_Hs	11	101695063	101704528	K118, ERVK-25, K(C11c), K36; envK25
LTR/ERVK	HERVK-int~LTR5_Hs	11	118721015	118730174	ERVK-20, K(C11b), K37; envK20
LTR/ERVK	HERVK-int~LTR5_Hs	12	58327459	58335944	K1:HERV-K74261; ERVK-21; envK1
LTR/ERVK	HERVK-int~LTR5_Hs	2	129961965	129964636	K-76, K(2q21.1)
LTR/ERVK	HERVK-int~LTR5_Hs	22	18939648	18947848	K101, K(C22), ERVK-24; envK24
LTR/ERVK	HERVK-int~LTR5_Hs	3	113024277	113033435	K68, ERVK-3, K106, K(C3)
LTR/ERVK	HERVK-int~LTR5_Hs	5	30486653	30496098	K-17:HERVK17-env; envK-17
LTR/ERVK	HERVK-int~LTR5_Hs	6	77716945	77726366	K4:HML-2 (K109); ERVK-9; envK4
LTR/ERVK	HERVK-int~LTR5_Hs	7	4583400	4599422	K2:HML-2.HOM/K108; ERVK-6; envK2
LTR/ERVK	HERVK-int~LTR5_Hs	8	7497875	7507337	K6:HERV-K115; ERVK-8; envK6
LTR/ERVK	HERVK-int~LTR5	1	160690785	160697338	K(C1a), ERVK-18, K110, K18; CD48 intron
LTR/ERVK	HERVK-int~LTR5B	6	42893671	42900374	K(OLDAL035587), KOLD35587

Table S2. The TRACERx RNA-seq cohort analysed in the study.

Histology	RNA-seq	RNA-seq & SCNA
LUAD	n = 170 (420 regions + 1 lymph node metastasis)	n = 158 (393 regions)
LUSC	n = 112 (279 regions)	n = 105 (265 regions)
Normal (LUAD)	n = 51 (49 paired)	NA
Normal (LUSC)	n = 27 (27 paired)	NA