

Protein Alignment Summary Table (ENV)

Name(s)	Locus	Accession No.	First Author	Reference
K89 KENYA KE89	HIVK89E	L22943	Louwagie J	<i>J Virol</i> 69 (1) 263–271 (1995)
Q23CXCCG	HIVQ2317	AF004885	Poss M	<i>J Virol</i> 72 (10) 8240–8251 (1998)
KIG93	HIVKIG93	L07082	Bex F	Unpublished (1992)
SF1703	HIVSF1703	M66533	Cheng-Mayer C	<i>PNAS</i> 85 (8) 2815–2819 (1988)
SE7253	ASOSE7253	AF069670	Carr JK	Unpublished (1998)
SE8538	ATZSE8538	AF069669	Carr JK	Unpublished (1998)
SE6594	AUGSE6594	AF069672	Carr JK	Unpublished (1998)
SE8891	AUGSE8891	AF069673	Carr JK	Unpublished (1998)
AF082486	AF082486	AF082486	Liitsola K	<i>AIDS</i> 12 (14) 1907–1919 (1998)
92UG037	H92UG037	U51190	Gao F	<i>J Virol</i> 70 (3) 1651–1657 (1996)
U455 U455A	HIVU455A	M62320	Oram JD	<i>ARHR</i> 6 (9) 1073–1078 (1990)
MA246	HIV1MA246	Y13718	Douglas NW	<i>J Mol Biol</i> 273 (1) 122–149 (1997)
MC108	HIV1MC108	Y13717	Douglas NW	<i>J Mol Biol</i> 273 (1) 122–149 (1997)
MBC18 C18 MBCC18	AUMBCC18B	AF042102	Oelrichs RB	<i>ARHR</i> 14 (9) 811–814 (1998)
SIM184 HSIM184	HIVSIM184 HSIM184	L07421	Bex F	<i>Blood</i> 84 (10) 3317–3326 (1994)
RL42	HCHRL42CG	U71182	Graf M	<i>ARHR</i> 14 (3) 285–288 (1998)
D31	HIV1D31	U43096	Kreutz R	<i>ARHR</i> 8 (9) 1619–1629 (1992)
HAN HAN-2 HAN2	HIVHAN2	U43141	Sauermann U	<i>ARHR</i> 6 (6) 813–823 (1990)
HXB2 HXB2CG	HIVHXB2R	K03455	Wong-Staal F	<i>Nature</i> 313 (6000) 277–284 (1985)
HXB2R HXB2RCG				
LAI HIVHXB2CG				
LAI BRU BRUCCG	HIVLAIICG	K02013	Wain-Hobson S	<i>Cell</i> 40 , 9–17 (1985)
PIH384	HIV1PIH384	AF041135	Ataman-Onal Y	Unpublished (1998)
OY1, 397	HIVOY1	M26727	Huet T	<i>AIDS</i> 3 (11) 707–715 (1989)
CAM1	HIVCAM1	D10112	McIntosh AA	Unpublished (1991)
ETR	HIVETR	D12582	Shimizu H	<i>Virology</i> 189 , 534–546 (1992)
3202A21	HIV1ACH320A	U34604	Gullion C	<i>ARHR</i> 11 (12) 1537–1541 (1995)
ACH3202A21				
89SP061	H89SP061	AJ006287	Olivares I	<i>ARHR</i> 14 (18) 1649–1651 (1998)

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TH936705 93TH067	HIV93TH067A	U39258	Penny MA	ARRHR 12 (8) 741-747 (1996)
93TH67 TH9367				
HIV1U3925				
QZ4589	HIVQZ4589	U32396	Blattner W	Unpublished (1995)
JRCSF	HIVJRCSF	M38429	O'Brien WA	<i>Nature</i> 348 (6296) 69-73 (1990)
JRFL	HIVJRFL	U63632	O'Brien WA	<i>Nature</i> 348, 69-73 (1990)
MNCG MN	HIVMN	M17449	Gurgo C	<i>Virology</i> 164, 531-536 (1988)
RF HAT3	HIVRF	M17451	Starich BR	<i>Cell</i> 45, 637-648 (1986)
SF2 SF2CG LAV2	HIVSF2CG	K02007	van Beveren CP	In: Weiss RNA Tumor Viruses, Second Edition, Vol. 2: 1124-1141 (1985)
ARV2 LAV-2 ARV-2				Unpublished (1995)
WEAU160 GHOSH	HIVWEAU160	U21135	Ghosh SK	Unpublished (1995)
MB314	HIVIMB314	Y13719	Douglas NW	<i>J Mol Biol</i> 273 (1) 122-149 (1997)
BU910611	HIV1BU9106	U39246	Penny MA	ARRHR 12 (8) 741-747 (1996)
BU910717	HIV1U39245	U39245	Penny MA	ARRHR 12 (8) 741-747 (1996)
BU910812	HIV1U39251	U39251	Penny MA	ARRHR 12 (8) 741-747 (1996)
92BR025	H92BR025	U52953	Gao F	<i>J Virol</i> 70 (3) 1651-1667 (1996)
BR911513 91BR015	HIV1U39234	U39234	Penny MA	ARRHR 12 (8) 741-747 (1996)
BW96BW0502	BW96BW0502		Novitsky V	Unpublished (1998)
DJ259A DJ2592	HIV1DJ259A	L22940	Louwagie J	<i>J Virol</i> 69 (1) 263-271 (1995)
	HIVDJ2592			
DJ373A	HIV1DJ373A	L23065	Louwagie J	<i>J Virol</i> 69 (1) 263-271 (1995)
	HIVDJ373A			
ETH2220 C2220	HIVETH2220	U46016	Salminen MO	ARRHR 12 (14) 1329-1339 (1996)
11246	IN11246	AF067159	Lole KS	<i>J Virol</i> 73 (1) 152-160 (1999)
21068	CIN21068	AF067155	Lole KS	<i>J Virol</i> 73 (1) 152-160 (1999)
301904	CIN301904	AF067157	Lole KS	<i>J Virol</i> 73 (1) 152-160 (1999)
SE364A	HIV1SE364A	L22944	Louwagie J	<i>J Virol</i> 69 (1) 263-271 (1995)
SM145A SM145A2	HIV1SM145A	L22946	Louwagie J	<i>J Virol</i> 69 (1) 263-271 (1995)
UG268A2	HIVUG268A2	L22948	Louwagie J	<i>J Virol</i> 69 (1) 263-271 (1995)
SE365A2	HIV1SE365A	L22945	Louwagie J	<i>J Virol</i> 69 (1) 263-271 (1995)
	HIVSE365A2			

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HIV-1-ENY

Amino Acids

87TZ4622	HIVU65075	U65075	Robbins KE	ARHR 12 (14) 1389-1391 (1996)
92UG024D	HIVU108805	U08805	WHO Global Programme	ARHR 10 (11) 1327-1343 (1994)
94UG1141	94UG114	U88824	Gao F	<i>J Virol</i> 72 (7) 5680-98 (1998)
C971412	HIVC971C	U36867	Douglas NW	<i>AIDS</i> 10 (1) 39-46 (1996)
UG266A2	HIV1UG266A	L22947	Louwagie J	<i>J Virol</i> 69 (1) 263-271 (1995)
	HIVUG266A2			
WHO15-474	HIV1U36886	U36886	Daniels RS	<i>AIDS</i> 10 (1) 39-46 (1996)
	HIV1WHO1527			
84ZR085	84ZR085	U88822	Gao F	<i>J Virol</i> 72 (7) 5680-98 (1998)
ELI ELJCG	HIVELJCG	K03454	Alizon M	<i>Cell</i> 46, 63-74 (1986)
JY1	HIVJY1	J03653	Youno J	ARHR 4, 165-173 (1988)
NDK	HIVNDK	M27323	Spire B	<i>Gene</i> 81, 275-284 (1989)
Z2Z6 Z2 Z34	HIVZ2Z6	M22639	Theodore T	Unpublished (1988)
93BR0201	93BR020	AF005494	Gao F	<i>J Virol</i> 72 (7) 5680-98 (1998)
BZ126A	HIV1BZ126A	L22082	Louwagie J	ARHR 10 (5) 561-567 (1994)
BZ163A	HIV1BZ163A	L22085	Louwagie J	ARHR 10 (5) 561-567 (1994)
FIN9363	FIN9363	AF075703	Salmiinen M	Unpublished (1998)
DRCBL	DRCBL	AF084936	Debyser Z	ARHR, in press (1999)
HH8793 G.FI-HH8793	HH8793121	AF061641	Salmiinen M	ARHR 8 (9) 1733-1742 (1992)
LBV217	HIV1U09664	U09664	Janssens W	ARHR 10, 877-879 (1994)
	HIVLBV217			
SE6165 G6165 G-SE- G6165	AF061642	AF061642	Carr JK	<i>Virology</i> 247 (1) 22-31 (1998)
VI91	VI91		Laukkanen T	Unpublished (1998)
VI97	VI97		Laukkanen T	Unpublished (1998)
U40561, U4056, 90CR056, H90CF056	90CF056	AF005496	Murphy E	ARHR 9 (10) 997-1006 (1993)
SE91733	SE91733	AF082395	Laukkanen T	ARHR 15 (3) 293-297 (1999)
SE92809	SE92809	AF082394	Laukkanen T	ARHR 15 (3) 293-297 (1999)
YBF30	NCMYBF30	AJ006022	Simon F	<i>Nature Medicine</i> 4 (9) 1032-1037 (1998)

ANT70C	HIVANT70C	L20587	Vanden Haesevelde M	<i>J Virol</i> 68 (3) 1586-1596 (1994)
CM4974	AF009033	AF009033	Korber BT	Unpublished (1998)
MVP5180	HIVMVP5180	L20571	Gurtler LG	<i>J Virol</i> 68 , 1581-1585 (1994)
VI686 HIV1VI686	HIVVI686	X96526	Janssens W	<i>AIDS</i> 10 (8) 903-910 (1996)
HIV1686EN				
341HA	HIVU82992	U82992	Hunt JC	<i>ARRHR</i> 13 (12) 995-1005 (1997)
655HA	HIVU82993	U82993	Hunt JC	<i>ARRHR</i> 13 (12) 995-1005 (1997)
U82990	HIV1U82990	U82990	Hunt JC	<i>ARRHR</i> 13 (12) 995-1005 (1997)
U82991	HIV1U82991	U82991	Hunt JC	<i>ARRHR</i> 13 (12) 995-1005 (1997)
90cr402 HIVU51188	HIV90CF402	U51188	Gao F	<i>J Virol</i> 70 (10) 7013-7029 (1996)
90CR402 CAR-E 4002				
KH03	HIVU48264	U48264	McCutchan FE	<i>J Virol</i> 70 (6) 3331-3338 (1996)
KH08	HIVU48266	U48266	McCutchan FE	<i>J Virol</i> 70 (6) 3331-3338 (1996)
TH920149	HIV1U39260	U39260	Penny MA	<i>ARRHR</i> 12 (8) 741-747 (1996)
93TH253	H93TH253	U51189	Gao F	<i>J Virol</i> 70 (10) 7013-7029 (1996)
A01021	HIVA01021	AF015916	Yu X	<i>ARRHR</i> 13 (16) 1439-1441 (1997)
CM240	HIV1CM240	U54771	Carr JK	<i>J Virol</i> 70 (9) 5935-5943 (1996)
E11429.A3-1	HE11429A31	AF015919	Yu X	<i>ARRHR</i> 13 (16) 1439-1441 (1997)
TH921110	HIV192TH11	U39261	Penny MA	<i>ARRHR</i> 12 (8) 741-747 (1996)
DJ263	DJ263	AF063223	Carr JK	<i>Virology</i> 247 (1) 22-31 (1998)
DJ264	HDI264	AF063224	Carr JK	<i>Virology</i> 247 (1) 22-31 (1998)
IBNG AG.LNG-1bNG	HIVIbNG	L39106	Howard TM	<i>ARRHR</i> 10 (12) 1755-1757 (1994)
GR11 97PVCH	AF049292	AF049292	Nasioulas G	<i>ARRHR</i> 14 (8) 685-690 (1998)
94CY032-3	AF049337	AF049337	Gao F	<i>J Virol</i> 72 (12) 10234-10241 (1998)
97PVMY GR84	97PVMY	AF119819	Nasioulas G	<i>ARRHR</i> 14 (8) 685-690 (1998)
CPZGAB CIVCG	SIVCPZGAB	X52154	Huet T	<i>Nature</i> 345 , 356-359 (1990)
CPZANT	SIVCPZANT	U42720	Vanden Haesevelde MM	<i>Virology</i> 221 (2) 346-350 (1996)
SIVCPZUS	SIVCPZUS	AF103818	Gao F	<i>Nature</i> 397 (6718) 436-441 (1999)

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B. FR. HXB2	KLPLGLVSLKCTDLKNDIN	TNSSGGMIMEKGIKRCSPNISIRGKVQYKAYFPYKLDLIPID	NDPTS	YKLTSGNTSVI	TOACPWSPF	PIPIHXC	218
A. KE. K89	-----T-N-SNVAVYAT	.....	-----T-EL-DRR-V-SL-R-VV-NE	.....	N-SSNN	.....	E-R-IN-A-	.....	-----T	.....	-----T	216
A. KE. Q23XCCG	-----T-H-NVAVNT	.....	-----T-DRREGL	.....	NGG	.....	E-R-IN-A-	.....	-----T	.....	-----T	210
A. RM. KI693	-----T-D-NVNTLST	.....	-----KTPSPYTNISEMRE	.....	SKPK	.....	Q-R-IN-A-	.....	-----T	.....	-----T	220
A. RM. SFI703	-----T-N-SHNTTTH	IT	-----TANNPNTTKYME	.....	Y-ML-EL-D-K-VHSI	.....	VV-K	.....	-----T	.....	-----T	224
A. SE. SOSR7253	-----I-N-MANGTO	.....	-----VNTITVGMR	.....	ML-EL-D-K-G-SL	.....	VQ-ND	.....	-----T	.....	-----T	224
A. SE. TZS58538	-----I-E-N-YAVNYAT	.....	-----HSYAVNVO-M	.....	VT-EL-D-R-VTSI	.....	VV	.....	-----T	.....	-----T	219
A. SE. UGSR6594	-----T-N-NVAVTRV	.....	-----VA-ND-E	.....	MT-EL-D-Q-VHSI	.....	VQ-NE	.....	-----T	.....	-----T	213
A. SE. UGSR8891	-----T-N-SSV-SSV	.....	-----TNTSTMA	.....	MT-E-D-R-VH-L	.....	VQ-NE	.....	-----T	.....	-----T	213
A. UA. AF0824486	-----T-N-AEP-STSS	.....	-----NNSSVN-NSDSILFE-M	.....	MT-EL-D-R-RTVHSL	.....	VSTCK	.....	-----T	.....	-----T	220
A. UG. 92U037	-----T-D-SYNTLNTT	.....	-----ITNSVAVRE	.....	MT-EL-D-NR-V-SL	.....	VQ-NN	.....	-----T	.....	-----T	216
A. UG. U455	-----T-D-HNTLNTNT	.....	-----NNTITLTDVRE-M	.....	MT-EL-D-K-V-SL	.....	VQ-NN	.....	-----T	.....	-----T	216
A. ZR. MA246	-----T-N-S-VAVNAT	.....	-----YVAVDT-VM-E-R	.....	MT-EL-DRK-V-SL-R	.....	VVQ-NN	.....	-----T	.....	-----T	218
B. AU. MRC18	-----T-E-FVHRTKTKT	.....	-----NITTEMI	.....	MT-EL-D-K-VHSL	.....	VVEMSN	.....	-----T	.....	-----T	218
B. BE. SIM784	-----N-A-T	.....	-----SMTSSSSSTN-SLEQKA	.....	T-NM-D-O-I-S-V	.....	VV-ED	.....	-----T	.....	-----T	216
B. CN. RL42	-----T-N-NM-SAMSTS	.....	-----TM-S-LB	.....	VT-KN	.....	VV-ED	.....	-----T	.....	-----T	210
B. DE. D31	-----T-N-N-A-TSST	.....	-----TM-WITGEM	.....	T-KT-#D-L	.....	VV-G	.....	-----T	.....	-----T	218
B. DE. HAN	-----T-N-YN-A-SS	.....	-----WGR	.....	KVT-N-D	.....	S-L	.....	-----T	.....	-----T	220
B. FR. LAI	-----G-A	.....	-----TMSN	.....	E-M	.....	V-Q-G	.....	-----T	.....	-----T	223
B. FR. PIH384	-----T-N-NVQGM-TT	.....	-----NVGNTTYPNATAI-DM	.....	T-D	.....	V-Q-G	.....	-----T	.....	-----T	223
B. GA. OYI	-----T-D-SVATTS	.....	-----SLRNATVTT-SMET	.....	TT-D-M-EG-L	.....	VL-K	.....	-----T	.....	-----T	223
B. GB. CAM1	-----T-I-NVN-TRT	.....	-----NSSDMDRREGEM	.....	VT-N-D-R-L	.....	VV-K	.....	-----T	.....	-----T	219
B. JP. ETR	-----T-N-R-T	.....	-----NN-SIEEK	.....	VT-N-D-R-L	.....	VV-N	.....	-----T	.....	-----T	225
B. NL. ACH320A	-----T-N-PG-A	.....	-----N-T-VI-I	.....	K-N-NMKD-A-I-L	.....	VV-N	.....	-----T	.....	-----T	221
B. SP. 89SP061	-----T-N-YG-A	.....	-----TNNSSATNPT-SGGMEGR	.....	TR-D-K-L-S-V	.....	KD	.....	-----T	.....	-----T	224
B. TH. TH936705	-----T-N-R-A	.....	-----N-S-PM-GG	.....	T-T-K-D-L	.....	VV-D	.....	-----T	.....	-----T	211
B. TT. QZ4889	-----T-N-K-IPN	.....	-----T-RKMEI	.....	TSG-N-M-M-L	.....	D	.....	-----T	.....	-----T	223
B. US. JRCGF	-----T-N-K-VNAT	.....	-----NTT-SEGM-R	.....	TK-D	.....	VV-N	.....	-----T	.....	-----T	216
B. US. JRFPL	-----T-N-K-VNAT	.....	-----NTTDSSEGT-R	.....	T-DE	.....	VV-N	.....	-----T	.....	-----T	215
B. US. MN	-----T-N-R-T	.....	-----TNNSTAN-N-NSGTLKG-M	.....	T-D-M	.....	VV-N	.....	-----T	.....	-----T	223
B. US. RF	-----T-N-AMLNGT	.....	-----NVT-GTM-N	.....	QVT-R-D-T-K-L	.....	VV-N	.....	-----T	.....	-----T	221
B. US. SF2	-----T-N-EKA	.....	-----TN-NMKEEI	.....	T-D-I-N-LN	.....	VV-N	.....	-----T	.....	-----T	221
B. US. WEAU160	-----T-N-NVAVTMI	.....	-----KMETN	.....	VT-L-N-RKT-L	.....	VV-H	.....	-----T	.....	-----T	222
B. ZR. MB314	-----T-N-OS-N	.....	-----NTTNNNGV-OGE-M	.....	T-D-R-L	.....	VV-N	.....	-----T	.....	-----T	217
C. BI. BU910611	-----T-S-NATRNG	.....	-----ITVAVTME	.....	T-E-D-RKVH-L	.....	V-LNE	.....	-----T	.....	-----T	223
C. BI. BU910717	-----T-VNATKNS	.....	-----ATVNSAVVANNVME	.....	T-EL-D-E-VR-L	.....	V-LNE	.....	-----T	.....	-----T	222
C. BI. BU910812	-----T-N-SKIVTAL	.....	-----NATAY-NENDVAV-M	.....	T-E-D-K-RA-L	.....	VSLNE	.....	-----T	.....	-----T	218
C. BR. 92BR025	-----T-H-SNRTI-Y	.....	-----N-TDMWG	.....	MT-EV-D-RE-VH-L	.....	V-LKN	.....	-----T	.....	-----T	216
C. BR. RP911513	-----T-N-SNARTS	.....	-----YAVSPRTSYNMS	.....	MT-EV-D-KM-VH-L	.....	V-LKN	.....	-----T	.....	-----T	223
C. BM. BM96BR0502	-----T-N-RVAVNS	.....	-----IM-WIDNSN-M	.....	VT-EL-DRK-EVH-L	.....	VV-LQG	.....	-----T	.....	-----T	216
C. DU. DU289A	-----T-N-SNVDSNAT	.....	-----TENS-E-M	.....	VT-EL-D-R-A-L	.....	VV-LNE	.....	-----T	.....	-----T	209
C. DU. DU373A	-----T-N-SKVYTA-G	.....	-----NG-VYNSTEKDMR	.....	T-EL-D-K-K-L	.....	V-LNE	.....	-----T	.....	-----T	215
C. ET. ETH2220	-----T-N-NAI-N-K	.....	-----VTNNSINSAND-M	.....	TT-EL-D-KR-A-L	.....	V-LNN	.....	-----T	.....	-----T	215
C. IN. 11246	-----T-E-GNVQNGT	.....	-----YNDSDNK-T	.....	TT-E-RK-V-L	.....	V-SE	.....	-----T	.....	-----T	211
C. IN. 21068	-----T-E-RNVASTG	.....	-----GTH-KTYNSMK	.....	AT-V-KD-K-TV-L	.....	V-LN	.....	-----T	.....	-----T	224
C. IN. 301904	-----T-E-KNV-ST	.....	-----HNEYTESVK	.....	AT-E-DRK-TV-L	.....	V-LNS	.....	-----T	.....	-----T	219
C. SN. SE364A	-----T-N-RVAVTNS	.....	-----NATSDNDN	.....	T-EL-D-RN-L	.....	V-LSG	.....	-----T	.....	-----T	218
C. SO. SMI45A	-----T-N-EAMINIT	.....	-----SVGNVTSNDN-E	.....	AT-ELSD-K-V-L	.....	V-LNE	.....	-----T	.....	-----T	219
C. UG. UG2688A2	-----T-N-NVAVNIT	.....	-----NNANAVTSPYENK-L-Q	.....	VT-E-D-K-TAH-L	.....	VVSLFG	.....	-----T	.....	-----T	223

HIV-1 ENV

B.FR.HXB2	APAGFAILKNNKKTNGNGPCPCNNVST	VOCHHGRLRPVVSTOLLINGSLAE	EEVIVSVNPT	DNAKTIIVQNTSVEINCTSP	NNNTR	KRIRI	ORGGRARVTTGK	IGNMRQAHGNI	SRA
A.KE.K89	KD-K---	K---	G-M-E-I-N-N	PAEP-K---	MS	---	Q-YAT-D	I-DI	V-N
A.KE.Q23XCCG	KNIT---	L-K---	VOP-T-K-I	---	S	---	Q-YAT-D	I-DI	K-Y-V-T
A.RW.K1G93	KEAN-T---	K-S---	EKD-Q-E-I-N	PTKA-K---	KT	---	Q-WYAR-N	M-DI	K-Y-V-T
A.RW.SF1703	DAE---	K---	GR-K-E-I-N	KT	SV	---	Q-YAT-D	I-DI	Y-V
A.SE.SOSE7253	RD-E---	N-K---	KIM-E-IS	TEP-T	TS	---	Q-YAT-D	IT-DI	V-S
A.SE.TZS8538	REN---	K-K---	R-K-M-E-I-N-V-N	KEP-N	S	---	Q-YAT-E	V-DI	V-S
A.SE.UGS8594	KDA---	R-K---	KGGIR-E-I-N-V-L	DKP-N-T-I	YH	T-H	Q-YAT-D	IK-SI	TVN-S
A.UA.UGS8891	D-E---	K-S---	T-M-AE-I-N-I-N	F-K-I-I	S	---	Q-YAT-D	V-DI	Y-DVN-T
A.UA.AFO824486	KDTN-T---	K-K---	K-M-E-I-N-V-N	TEP-N-T-I	G	TS	Q-YAT-D	V-DI	K-Y-V
A.UG.U455	D-E---	L-K---	GK-M-E-I-N-V-N	E-T	RSV	---	Q-YAT-D	I-DI	V-GS
A.ZR.MA236	KDPE---	K-R---	R-IR-E-I-N-N	VNP-K-S	Y##	N-RYSI	Q-YAT-E	I-DI	V-R
A.ZR.MC108	E-K---	K-K---	SK-M-E-I-N-N-L	TSP-N-S-I	SV	---	Q-YAT-E	I-DI	Y-VN-S
B.AU.MBC18	E-K---	K-K---	M-E-I-N-N	FT	RS	---	Q-YATND	I-DI	Q-DVN-T
B.BE.SIMT84	D-K---	K-K---	K-D-N	T-V	RS.P	---	Y-TEI	I-DI	Y-TK
B.ON.RL42	T---	L-K---	KPS	E-K-V	SK	TLHM	K-YAT-D	IGGYT-YI	---
B.DE.D31	M---	KD-R---	D	KE	Y-S	S-HL	K-WY-T-Q	I-DI	L-ST
B.DE.HAN	D-K---	K-K---	D	H-E	G-H	---	AR-Y-K	I-DI	G-
B.FR.LAI	---	K---	A	Q	S	---	Y-T-R	IV-DI	L-
B.FR.PIH384	---	K---	I-FD-I	K-I	S-F	---	YAA-D	I-DI	GV
B.GA.OYI	D-K---	K-K---	I-S-N-I	KEP	N-S	---	H-TKQ	I-DI	L-
B.GB.CAM1	T---	D-K---	K-E-E-N	ET-K-I	S-A	---	TVYATDR	I-DI	L-ST
B.JP.ETR	L---	K-K---	G	E	VTM	---	VYV-T-E	I-DI	L-
B.NL.ACH320A	L---	D-K---	A-S-N	E-A	G-H	---	K-YAT-Q	I-DI	L-
B.SP.89SP061	D---	K-K---	D-S	V-H-E	L	I	RS-HVGHV	Q-WY-T-Q	I-DI
B.TH.TH936705	T---	D-K---	S	RV	E	S-PL	Y-GET	I-DI	L-ST
B.UU.OZ489	---	D-K---	E	N-L	E	S-H	Y-GET	I-DI	L-T
B.UU.JRCSF	---	K-Q-K---	D	N	KE	S-H	Y-T-E	I-DI	---
B.UU.JRFL	---	D-K---	E	H	S-H	---	Y-T-E	I-DI	---
B.UU.MN	T---	D-K-S-K-S-K---	E	E	Q	S-TK	Y-TKN	I-TI	---
B.UU.RF	---	D-K---	D	N	E-A	S-Y	VYAT-Q	I-DI	K-L
B.UU.SF2	T---	K-K---	D	N	E-A	S-Y	H-T-R	I-DI	R-L
B.UU.WEAV160	---	D-K---	DI	E	V-I	ET	VLY-T-E	I-DI	R-L-T
B.ZR.MB314	---	K-S-N---	I	E	M	I	YAT-D	I-DI	---
C.BI.BU910611	---	K-T---	K	T	H	K	V	ES	QYAT-D
C.BI.BU910717	---	D-N---	N	T	E	M	N	I	I
C.BI.BU910812	---	A-N---	G	I	K	L	S	N	I
C.BR.92BR025	---	N-N---	I	TK	K	L	V	H	E
C.BR.BR911513	---	K-I---	II	K	L	V	H	KEP	QYAT-E
C.BM.BM96BR0502	T---	O-N---	A	K	I	V	H	KEP	QYAT-E
C.DJ.DJ289A	---	RD-N---	V	K	G	II	E	L	N
C.DJ.DJ373A	---	RD-T---	DDII	E	L	N	I	E	A
C.ET.ETH220	---	RD-T---	I	G	TL	FE	L	N	I
C.IN.11246	---	D---	S	G	II	E	L	N	V
C.IN.21068	---	Y---	GGII	E	L	N	V	H	OP
C.IN.301904	---	Y---	G	II	E	L	N	H	Q
C.SN.SE364A	---	Y---	G	II	E	L	N	H	E
C.SO.SM145A	---	E---	GT	M	E	L	N	H	Q
C.UG.UG268A2	---	Y---	II	E	L	N	I	K	I

<----- V3 neutralization loop

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DEC 98

B, FR, HXB2	KWNNTLQOLA	SKLRPFRGN	NKT	ILFKOSSGGDEPVIIVH	SPNCGEPPYCN	SNLQPLFMSIVM	F, NSI	WTEBESNDEES	DTLTPCRIKOLINIMWOKV	KAMVYAPPI	SGQIRGSS	NITG	451
D, SN, SE365A2	R-K-Q-VV	R-KDL	NK	EP	EP	EP	EP	EP	EP	EP	EP	EP	452
D, TZ, 87T2462	E-K-IG-VT	KR	KHL	P	OP	OP	OP	OP	OP	OP	OP	OP	453
D, UG, 92U0024D	A-KK-E-V	K	KVL	SR	T	D	P	T	T	T	T	T	454
D, UG, 94U0614E1	G-K-Q-V	E	GLNL	L	Q	P	P	T	T	T	T	T	455
D, UG, C971412	A-K-Q-V	K	DLNL	T	L	Q	P	T	T	T	T	T	456
D, UG, UG266A2	G-K-Q-V	K	GLNL	L	T	P	P	T	T	T	T	T	457
D, UG, WHO15474	D-K-Q-V	K	GLNL	L	T	P	P	T	T	T	T	T	458
D, ZR, 842R085	R-V	V	K	GLNL	L	T	P	P	T	T	T	T	459
D, ZR, ELI	O-SK-Q-V	R	GLNL	L	T	P	P	T	T	T	T	T	460
D, ZR, JYI	A-K-Q-V	R	GLNL	L	T	P	P	T	T	T	T	T	461
D, ZR, NDK	E-K-Q-V	T	GNLNL	T	T	P	P	T	T	T	T	T	462
D, ZR, 222E	R-R	AKVK	A	GSY	P	A	K	NS	L	TR	N	M	463
F, BR, 93BR0201	O-K-E	EVV	A	KSH	P	A	K	NS	L	TR	N	M	464
F, BR, B2126A	O-K-E	VR	A	KSH	P	A	K	NS	L	TR	N	M	465
F, F1, F1N3363	O-K-E	VR	A	KSH	P	A	K	NS	L	TR	N	M	466
G, BE, DR6BL	O-K-E	VR	A	KSH	P	A	K	NS	L	TR	N	M	467
G, F1, HH8793	N-S	MIEKVK	AQ	KI	NK	T	DS	A	L	T	R	R	468
G, GA, LBV217	D-RM	OKVK	AO	QGI	YVK	S	T	NS	A	L	TA	R	469
G, SE, SE6165	K-EA	QNV	AE	GKI	NK	SE	T	NS	A	L	T	R	470
H, BE, V1991	O-E	HKVI	T	GSY	D	L	OP	A	L	I	T	R	471
H, CE, 90CG056	D-K	H	VV	TO	GH	L	R	L	PH	L	VT	R	472
J, SE, SE91733	D-S	RRV	K	H	NK	D	T	SP	I	T	T	R	473
J, SE, SE92809	D-S	RRV	K	H	NK	D	T	SP	I	T	T	R	474
N, CM, YBF30	L	EPW	NR	PEIK	KI	K	I	FR	AP	RE	N	L	475
O, CM, ANT70C	D	GKI	T	ERY	EL	VNT	GS	I	N	MT	NH	L	476
O, CM, CM4974	G	IEA	N	T	OR	K	V	N	V	T	G	MS	477
O, CM, WVP180	V	E	A	Q	T	IK	N	V	Q	T	IK	N	478
O, GA, V1686	D	EKA	MT	ERY	EL	VNT	GS	I	N	MT	NH	L	479
O, GO, 341HA	A	EE	HT	ERY	EL	VNT	GS	I	N	MT	NH	L	480
O, GO, 655HA	A	EE	HT	ERY	EL	VNT	GS	I	N	MT	NH	L	481
O, GO, HIVU82990	A	ER	Q	T	ER	W	L	E	V	N	T	G	482
O, GO, HIVU82991	E	EE	T	ER	W	L	E	V	N	T	G	483	
O, GO, HIVU82991	E	EE	T	ER	W	L	E	V	N	T	G	484	
AE, CF, 90CR402	AE	TH	KH03	R	G	H	L	ANG	TM	S	R	P	485
AE, TH, KH03	AE	TH	KH03	R	G	H	L	ANG	TM	S	R	P	486
AE, TH, KH08	AE	TH	KH08	R	G	H	L	ANG	TM	S	R	P	487
AE, TH, KH920149	AE	TH	KH920149	R	G	H	L	ANG	TM	S	R	P	488
AE, TH, 93TH253	AE	TH	93TH253	R	G	H	L	ANG	TM	S	R	P	489
AE, TH, A01021	AE	TH	A01021	R	G	H	L	ANG	TM	S	R	P	490
AE, TH, CM240	AE	TH	CM240	R	G	H	L	ANG	TM	S	R	P	491
AE, TH, E11429	AE	TH	E11429	R	G	H	L	ANG	TM	S	R	P	492
A31	AE	TH	E11429	R	G	H	L	ANG	TM	S	R	P	493
AG, DJ, DJ263	AG	JD	DJ263	R	G	H	L	ANG	TM	S	R	P	494
AG, NG, IENG	AG	JD	DJ263	R	G	H	L	ANG	TM	S	R	P	495
AGI, GR, 97PVG	AGI	GR	97PVG	R	G	H	L	ANG	TM	S	R	P	496
AGI, CY, 94CY032	AGI	GR	97PVG	R	G	H	L	ANG	TM	S	R	P	497
GSZGAB	T	R	VEEV	C	A	L	A	T	S	P	R	A	498
GTZANI	L	E	OR	K	T	E	V	A	L	E	B	H	499
STVCPZUS	L	E	OR	K	T	E	V	A	L	E	B	H	500

CD4 binding
 V4 loop
 CD4 binding
 CD4 binding

Amino Acids

	CD4	<-----	V5	----->		gp120\gp41	- fusion peptide -|			
B.FR.HXB2	LIITRDGNSN	.....	NESEIFPPGGGDMRWSELYKYKVKI	EPPLGVA	PKAKR	.....	RVYQREKRAV.G.IGALPLFG.FLGAAGSTMGAA	SMTLITVQAROLLISGITVQOONMLLRA	IEAQOHL	566
A.KE.K89	-----DN	.....	NS-VN-T	-----	-----	-----	-----	-----	-----	568
A.KE.Q23XCCG	-----KD	.....	N-VN-T	-----	-----	-----	-----	-----	-----	556
A.RW.KI93	-----VG	.....	DNST-GT-T	-----	-----	-----	-----	-----	-----	569
A.RW.SF1703	-----DN	.....	NSAN-T	-T-N-	-----	-----	-----	-----	-----	571
A.SE.SOSE7253	-----VV	.....	NSIN-T	-N-K-	-----	-----	-----	-----	-----	539
A.SE.TZS8538	-----SN	.....	NSTN-T	-----	-----	-----	-----	-----	-----	562
A.SE.UGS86594	-----DA	.....	G-N-T	-----	-----	-----	-----	-----	-----	564
A.SE.UGS88891	-----SG	.....	N	-----	-----	-----	-----	-----	-----	555
A.UA.AF082486	-----I	-----	TMSSN-T	-I-N-	-----	-----	-----	-----	-----	564
A.UG.92U037	-----I	-----	SSD-T	-----	-----	-----	-----	-----	-----	560
A.UG.U455	-----I	-----	VM	-----	-----	-----	-----	-----	-----	558
A.ZR.MA236	-----I	-----	VS-T	-----	-----	-----	-----	-----	-----	561
A.ZR.MC108	-----I	-----	GNSS	.....	VS-T	-----	-----	-----	-----	562
B.AU.MBC18	-----I	-----	GNST	.....	ESKK-T	-----	-----	-----	-----	562
B.BE.SIMT84	-----KNES	.....	NTT.D-ST-T	-----	R-	-----	-----	-----	-----	574
B.ON.RL42	-----KNES	.....	ETT-T	-----	-----	-----	-----	-----	-----	566
B.DE.D31	-----KMK	.....	D-T-T	-----	N	-----	-----	-----	-----	554
B.DE.HAN	-----I	-----	NSST	-----	N	-----	-----	-----	-----	560
B.FR.LAI	-----N	-----	G	-----	-----	-----	-----	-----	-----	565
B.FR.PIH384	-----V	-----	N-NT	-----	-----	-----	-----	-----	-----	571
B.GA.OYI	-----KNT	.....	T-GI	-A	-----	-----	-----	-----	-----	567
B.GB.CAM1	-----RGE	.....	T-T	-----	-----	-----	-----	-----	-----	566
B.JP.ETR	-----T	.....	QNNNTSSI	-----	-----	-----	-----	-----	-----	572
B.NL.ACH320A	-----KD	.....	ENKTKT	-----	K	-----	-----	-----	-----	566
B.SP.89SP061	-----I	-----	INOF	.....	-TT-T	-----	-----	-----	-----	572
B.TH.TH936705	-----I	-----	NGS	.....	-TT-T	-----	-----	-----	-----	549
B.TT.QZ489	-----I	-----	GT	-----	N	-----	-----	-----	-----	569
B.US.JRCGF	-----KNES	.....	E-GI	-----	-----	-----	-----	-----	-----	558
B.US.JRFL	-----I	-----	E-GI	-----	-----	-----	-----	-----	-----	557
B.US.MN	-----I	-----	TDI-DI	-----	T	-----	-----	-----	-----	567
B.US.RF	-----KD	.....	TT-T	-L-N	-----	-----	-----	-----	-----	575
B.US.SF2	-----I	-----	VT-DI	-V	-----	-----	-----	-----	-----	565
B.US.WEAU160	-----S	.....	EE-OT	-----	N-K	-----	-----	-----	-----	569
B.ZR.MB314	-----I	-----	N.S	-T-DI-T	-----	-----	-----	-----	-----	560
C.BI.BU910611	-----S	.....	EANKTG-T	-----	K	-----	-----	-----	-----	567
C.BI.BU910717	-----GO	.....	N-GP-T	-----	N	-----	-----	-----	-----	555
C.BI.BU910812	-----I	-----	L	-----	N	-----	-----	-----	-----	566
C.BR.92BR025	-----TG	.....	MDDT-T	-E	-----	-----	-----	-----	-----	559
C.BR.BR911513	-----I	-----	DT-T	-----	E-K-I	-----	-----	-----	-----	562
C.BM.BM96BR0502	-----KT	.....	GT	-----	N	-----	-----	-----	-----	559
C.DJ.DJ289A	-----I	-----	TT-G	-----	E-K-V-I	-----	-----	-----	-----	559
C.DJ.DJ373A	-----TN	.....	STD-T	-----	E-K-L	-----	-----	-----	-----	542
C.ET.ETH2220	-----AKE	.....	PSTK-T	-E	-----	-----	-----	-----	-----	553
C.IN.11246	-----I	-----	SG	.....	S-GT-T	-----	-----	-----	-----	555
C.IN.21068	-----V	-----	ED	.....	KNNTEI-KT-T	-----	-----	-----	-----	573
C.IN.301904	-----V	-----	AE	.....	AKT-NT-T	-----	-----	-----	-----	560
C.SN.SE364A	-----TT	.....	N-NT	-----	E-K-I	-----	-----	-----	-----	551
C.SO.SM145A	-----L	-----	D.PKRTEDQ-NT-R	-----	E-K-I	-----	-----	-----	-----	564
C.UG.UG268A2	-----ET	.....	SET-ST-T	-----	EVK-I	-----	-----	-----	-----	559

CD4 <----- V5 <-----> gp120 \ gp41 - fusion peptide - |

B.FR.HXB2
 D.SN.SE365A2
 D.TZ.87TZ4622
 D.UG.92UG024D
 D.UG.94UG01141
 D.UG.C971412
 D.UG.WG266A2
 D.UG.WH015474
 D.ZR.84ZR085
 D.ZR.ELI
 D.ZR.JY1
 D.ZR.NDK
 D.ZR.2226
 F.BR.93BR0201
 F.BR.BZ126A
 F.BR.BZ163A
 F.FI.FIN9363
 G.BE.DR8BL
 G.FI.HH8793
 G.GA.LBV217
 G.SE.SE6165
 H.BE.VI991
 H.BE.VI997
 H.CF.90CF056
 J.SE.SE91733
 J.SE.SE92809
 N.CM.YBF30
 O.CM.ANT70C
 O.CM.CM4974
 O.CM.MV9180
 O.GA.VI686
 O.GQ.341HA
 O.GQ.655HA
 O.GQ.HIVU82990
 O.GQ.HIVU82991
 AE.CF.90CFR402
 AE.TH.KH03
 AE.TH.KH08
 AE.TH.T9H20149
 AE.TH.93TH253
 AE.TH.A01021
 AE.TH.CM240
 AE.TH.E11429.A31
 AE.TH.T9H21110
 AG.DJ.DJ264
 AG.NG.IBNG
 AGI.GR.97PVCH
 AGI.CY.94CY032
 AGI.GR.97PVWY
 CPZGAB
 CPZANT
 STVCPZUS

ILLPFDGNSN.....NESEIIRPGGDWRDWRSELYKYVVKTEPLVAPT.KAKR.....RVVQEKRAV.G.IAALPLG.FLGAAGSTMGAAWTLTVQAROLLISGIVOOONMLLRATBAOQHL
 -L-...IH...NTS-T-T...-R-L...-T...-K...-I...-L-V...-A...-T-K...-D
 -A...-...NSSD-T...-R-I-L...-E...-I...-L-V...-A...-T-K...-D
 -TS...-...ON-T...-I...-R...-I...-L-V...-A...-T-K...-D
 -AI...-...NSSON-T...-N...-L-I-L...-A...-I...-L-V...-T...-V-L...-D
 -A...-...NNSON-T...-L...-L...-R...-I...-L-V...-A...-T-K...-D
 -VN-S...-...ON-T...-IRL...-L...-R...-I...-L-V...-A...-T-K...-D
 -I...-AN-GS...-...NN-T...-I...-T...-E...-I...-L-V...-A...-T-K...-D
 -AN-T...-...ONDT...-R...-I...-L-V...-A...-T-K...-D
 -IN...-...NSTM-T...-Q...-R...-I...-L-V...-A...-T-K...-D
 -VN-S...-...TM-T...-K-N...-R...-I...-L-V...-A...-T-K...-D
 -AN-S...-...SH-TI...-I...-R...-I...-L-V...-A...-T-K...-D
 -TN-S...-...SM-T...-N-K...-E...-I...-L-V...-A...-T-K...-D
 -LNST...-...OT-T...-N-K...-E...-I...-L-V...-A...-T-K...-D
 -F-K...-...ONSN...-...OT-T...-K-Y-V...-E...-I...-L-V...-A...-T-K...-D
 -ON-N...-...NSD-T...-K...-E...-I...-L-V...-A...-T-K...-D
 -DN-S...-...I...-KN...-T-KS-I...-R-R...-I...-L-V...-A...-T-K...-D
 -A-N...-...AS-T-T-A-N-K-N...-K...-I...-L-V...-A...-T-K...-D
 -TN...-...GN-T-A...-I-K...-I...-L-V...-A...-T-K...-D
 -N-NT...-...NTS...-T-KS...-R-R...-I...-L-V...-A...-T-K...-D
 -F-RM-T...-...NVT...-R...-I...-L-V...-A...-T-K...-D
 -Y-EDKG-N...-...DNVT...-E-R...-I...-L-V...-A...-T-K...-D
 -I-E-ASA...-...NYT...-E-R...-I...-L-V...-A...-T-K...-D
 -R...-NGSB-GT-T-T-N-K...-E...-I...-L-V...-A...-T-K...-D
 -R...-GNGSB-GT-T-T-N-K...-E...-I...-L-V...-A...-T-K...-D
 -V-EYS-PD...-...TKET-VY-S-N-VNL-O...-S-I-G...-I...-L-V...-A...-T-K...-D
 -MT-OM-NMWN...-...SS-NNVT...-I-K-I-T-PN...-RVK-FS...-PI-RP-VISRP...-L-M...-V-S...-AT-A-RHS-IK...-D-S...-Q
 -MT-BLHNDYN...-...KS-PVTT-G-T...-I-A-CN...-QVK-FS...-KVSREIISINPH...-L-M...-V-S...-ATA-RHS-IK...-D-S...-Q
 -MT-QL-QPWN...-...STGNL-V...-K-I-T-F...-RVK-FS...-IA-PVIGSTH...-L-W...-V-S...-ATA-RHS-IK...-D-S...-Q
 -MT-OM-MPWN...-...KSWT...-K-I-T-F...-RVK-FS...-PIA-PVIGSTH...-L-W...-V-S...-ATA-RHS-IK...-D-S...-Q
 -MT-OM-TPWN...-...NSSAG-RVATL-A-E-K-I-T-LN...-R-K-FS...-PIA-PVIGSTH...-L-M...-V-S...-ATA-RHS-IK...-D-S...-Q
 -MT-OM-RPWN...-...NSSR-RVATL-V-E-K-I-T-LN...-R-K-FS...-HIA-PVIGSTH...-L-M...-V-S...-ATA-RHS-IK...-D-S...-Q
 -MT-OM-NQWN...-...TS...-TNAK...-I-K-FN...-RVK-FS...-HIS-PVIGSTH...-L-M...-V-S...-ATA-RHS-IK...-D-S...-Q
 -MT-OM-KPWN...-...SSTG...-RVATL-V-E-K-I-T-LN...-R-K-FS...-PIA-PVIGSTH...-L-M...-V-S...-ATA-RHS-IK...-D-S...-Q
 -I...-INO...-...NOT-KN-T...-NIK...-R...-I...-L-V...-A...-T-K...-D
 -I...-PN-MT...-...N-T...-NIK...-N...-R...-I...-L-V...-A...-T-K...-D
 -I...-A...-...NST...-N-T...-NIK...-N...-R...-I...-L-V...-A...-T-K...-D
 -I...-LAND...-...TM-T...-NIK...-N...-R...-I...-L-V...-A...-T-K...-D
 -I...-ANG...-...NGT-ME-T...-NIK...-N...-R...-I...-L-V...-A...-T-K...-D
 -I...-AN...-...NAASN-GT-T...-NIK...-Q...-I...-R...-I...-L-V...-A...-T-K...-D
 -I...-VN...-...NTDM-T...-NIK...-Q...-I...-R...-I...-L-V...-A...-T-K...-D
 -I...-INDS...-...TTE...-NIK...-Q...-I...-R...-I...-L-V...-A...-T-K...-D
 -I...-DID...-...KTN-T...-NIK...-Q...-I...-R...-I...-L-V...-A...-T-K...-D
 -I...-SN...-...NSTM-T...-I...-H...-E...-I...-L-V...-A...-T-K...-D
 -I...-SN...-...NSTM-T...-I...-H...-E...-I...-L-V...-A...-T-K...-D
 -I...-I...-...NSTM-T...-I...-H...-E...-I...-L-V...-A...-T-K...-D
 -I...-I...-...NNNET-DN-TL...-V...-I...-R...-I...-L-V...-A...-T-K...-D
 -I...-I...-...NNNET-DN-TL...-V...-I...-R...-I...-L-V...-A...-T-K...-D
 -I...-I...-...SPTGN-T...-N-K-I...-Q...-V...-R...-I...-L-V...-A...-T-K...-D
 -I...-I...-...NNSGMLT...-T-N-K-I...-Q...-V...-R...-I...-L-V...-A...-T-K...-D
 -S-TPVT...-...NET...-VVVSPAARVA-Q-A-SR-Q-E-X-S...-TX-PEIKOH.S-Q-G.T...-LF...-L-S...-IA-A-T-N-XH...-A-Q-T
 I-DLISIAV...-...NMSR-I...-TVM-I...-TAL-KN-H...-S-I-G...-I...-L-V...-A...-T-K...-D

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Amino Acids

B.FR.HXB2	SAVSLNATPAIVANGTDRVLEVVQAGCAPLRHPRIRIQGLERILL	856
A.KE.K89	--SN-VDTI--V--GM--IA-IG-L--L--V--A--	855
A.KE.Q23CXCGG	--IN-VDTI--GM--IA-RIG-L--V--A--	855
A.RW.KIG93	--IN-FDTI--V--GM--G-RIG-FLN--A-A-I	856
A.RW.SF1703	--IN-DTI--GM--IG-AI--LN--F-A--	856
A.SE.SOSE7253	--I--FDTI--GM--G-LI-RIG--LN--F-RA--	854
A.SE.TZSR8538	--I--DTI--GM--LG-RL--L--V--F-A--	859
A.SE.UGSR6594	--IN-DT--GM--I--IG-FL--LN--F-A--	850
A.SE.UGSR8891	--IN-DTI--VI--GM--IG-F--F##--SK--K-A-Q	861
A.UA.AF082486	--IN-IDTI--GM--IG-RF--N--x--A-KA-Q	857
A.UG.92UG037	--IN--DTI--GM--T--RIG--LN--F--A--	854
A.UG.U459	--IT--D-V-V--GWL--IG-TIG--LN--A--	858
A.ZR.MA246	--IN-DTI--II--GM--IG-RF--LN--F-A--	859
A.ZR.MC108	--IN-DTI--GM--LG-RLY--LN--F-A--	864
B.AU.MBC18	--F--AL--RTY--L--A--	856
B.BE.SIM184	--T--V--RIG--VL--L--F-A--	844
B.CN.RL42	--IG--R-Y--L--T--A--	850
B.DE.D31	--R-W--L--V--A--	855
B.DE.HAN	--F-TI--R--L--V--A--	861
B.FR.LAI	--R--L--V--A--	857
B.FR.PIH384	--R-G--L--T--V--L--	855
B.GA.OYT	--VI--I--R-Y--FLN--A--	856
B.GB.CAM1	--FDTI--R--L--L--	861
B.JP.ETR	--L--RTY--L--VK--A--	856
B.NL.ACH320A	--R--VL--VL--V--A--	862
B.SP.89SF061	--L--R--L--L--A-Q	837
B.TH.TH936705	--T--R-Y--L--T--FK-A--	859
B.TT.QZ4589	--I--I--KA--RI--L--T--F-A--	848
B.US.JRC5F	--I--RVY--L--T--A--	847
B.US.JRF1	--I--AL--RTY--L--T--A--	856
B.US.MN	--L--R--G--L--T--A--	865
B.US.RF	--T--A--RIL--FL--L--A--	855
B.US.SF2	--W--T--A--R-Y--L--H--L--	859
B.US.WEAU160	--I--RT--L--L--A--	850
B.ZR.MB314	--I--I--L--RI--LN--T--A--	857
C.BI.BU910611	--I--FDTI--L--LIRIG--CS--F-AA-Q	852
C.BI.BU910717	--IN-DT--L--L--RIM--CN--T--F-AA-Q	852
C.BI.BU910812	--I--DT--I--LI--RSV--CN--F-AA-Q	863
C.BR.92BR025	--I--FDTI--I--I--IW--CN--F-AA-Q	856
C.BR.BR911513	--VI--D--L--I--IW--YN--F-AA-Q	859
C.BW.BW96BW0502	--I--DTI--I--FI--RI--N--F-AA-Q	849
C.DJ.DJ259A	--I--T--T--I--KFI--LM--CN--F-AA-Q	832
C.DJ.DJ373A	--IN--T--V--G--F--LI--RIM--FCN--F-AA-Q	843
C.ET.ETH2220	--IR--DIT--I--II--RIM--FCN--AA-Q	851
C.IN.11246	--IN--DIT--I--II--T--N--AA-Q	852
C.IN.21068	--IN--DRI--L--L--RI--N--F-AA-Q	870
C.IN.301904	--I--DTI--L--L--RT--N--F-AA-Q	857
C.SN.SE394A	--I--DTI--L--L--RI--SN--T--F-AA-Q	841
C.SO.SM145A	--I--DTI--L--LA--RI--GV--N--T--F-AA-Q	861
C.UG.UG268A2	--I--DTI--S--I--G--IG--L--F-AA-Q	856

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