

RT Epitopes 2, 3

Epitope #	HLA		
2	B*0801		
3	B8		
B · FR · HXB2			
CONSENSUS -A			
A.BY.97BL006			
A.KE.Q23			
A.SE.SE6594			
A.SE.SE7253			
A.SE.SE7535			
A.SE.SE8538			
A.SE.SE8891			
A.SE.UGSE8131			
A.UG.92UG037			
A.UG.U455			
A2.CD.97CDKKE4			
A2.CY.94CY017-41			
A2C.ZM.ZAM184			
A2D.-.97KR004			
A2G.CD.97CDKP58			
AC.ET.E3099G			
AC.IN.21301			
AC.RW.92RW009			
AC.SE.SE9488			
ACD.SE.SE8603			
ACG.BE.V11035			
AD.SE.SE6954			
AD.SE.SE7108			
ADHK.NO.97NOGIL3			
ADK.CD.MAL			
AG.BE.V11197			
AG.NG.92NG003			
AGHU.GA.V1354			
AGU.CD.Z321			
AJ.BW.BW2117			
CONSENSUS -B			
B.AU.MBC18			
B.AU.MBC200			
B.AU.MBC925			
B.AU.MBCC54			
B.AU.MBCC98			
B.AU.MBCD36			
B.AU.VH			
B.CN.RL42			
B.DE.D31			
B.DE.HAN			
B.FR.HXB2			
B.GA.OYI			
CONSENSUS -C			
C.BR.92BR025			
C.BW.96BW01B03			
C.BW.96BW0402			
C.BW.96BW0502			
C.BW.96BW1104			
C.BW.96BW1210			
C.BW.96BW15B03			
C.BW.96BW1626			
C.BW.96BW17A09			
C.ETH.ETH2220			
C.IN.93IN101			
C.IN.93IN904			
C.IN.93IN905			
C.IN.93IN999			
C.IN.94IN11246			
C.IN.95IN21068			
CONSENSUS -D			
D.CD.84ZR085			
D.CD.ELI			
D.CD.NDK			
D.CD.ZZZ6			
D.UG.94UG1141			
FI.BE.V1850			
FI.BR.93BR020-1			
FI.FI.FIN9363			
FI.FR.MP411			
CONSENSUS -E			
E.CY.97CY001			
E.CY.97CY002			
E.CY.97CY003			
E.CY.97CY004			
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E.CY.97CY006			
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E.CY.97CY256			
E.CY.97CY257			
E.C			

HIV CTL Epitope Alignments

F1.FR.MP411	--T---D---	05_DF.BE.VII1310	--T---D---
F2.CM.MP255	--T---D---	05_DF.BE.VI961	--T---D---
F2.CM.MP257	--T---K---	06_cpx.AU.BFP90	--T---K---
F2.KU.BE.VII126	--T---L---	06_cpx.ML.95ML.127	--T---L---
G.BE.DRCBL	--T---N---	06_cpx.ML.95ML.84	--T---N---
G.FI.HH8793-1-1	-xT-----R	06_cpx.SN.97SE.1078	--T---R---
G.NG.92NG083	--T---KD---	10_CD.-.BFL06131	--T---K---
G.SE.SE6165	--T---K---E	10_CD.-.BFL07132	--T---D---
H.BE.VI991	--T---L---	10_CD.-.BFL11033	--T---D---
H.BE.VI997	--T---M---	11_cpx.CM.97CM-MP818	--T---M---
H.CF.90CF056	--T---L---	11_cpx.FR.99FR-MPI298	--T---L---
J.SE.SE7022	--TQ--A-L-E	11_cpx.FR.99FR-MPI307	--K---L---
J.SE.SE7887	--TQ--A---E	11_cpx.GR.GR17	--T---L---
K.CD.EQTBI1C	-----	AltEICgemEIk	AltEICgemEIk
K.CM.MP535	--T---L---	CPZ.CD.CPZANT	--K--DKL-A
MO.CM.97CAMP645MO	--I-----	CPZ.CM.CAM3	--T---Q---
N.CM.YBF106	--R-----	CPZ.CM.CAM5	--T---Q---
N.CM.YBF30	--R-----	CPZ.GA.CPZGAB	--T---Q---
O.CM.ANT70	--TA-Q---Q	CPZ.US.CPZUS	--T---Q---
O.CM.MVP5180	--TA-Q---Q		
O.SN.99SE-MP1299	--TA-Q---Q		
O.SN.99SE-MP1300	--TA-Q---Q		
U.CD.-.83CD0031	--T---L---		
CONSENSUS -	ALtEiCkEmEe		
U155	--T---K---		
01_AE.CF.90CF11697	--T---K---E		
01_AE.CF.90CF402	--T---K---E		
01_AE.CF.90CF4071	--T---K---E		
01_AE.TH.93TH057	--T---K---E		
01_AE.TH.93TH065	--T---K---E		
01_AE.TH.93TH253	--T---K---E		
01_AE.TH.93TH902	--T---K---E		
01_AE.TH.94TH702	--T---K---E		
01_AE.TH.95TNIH047	--T---K---E		
01_AE.TH.CM240	--T---K---E		
01_AE.TH.TH022	--T---KK--E		
CONSENSUS -02_AG	altdiCtEMEX		
02_AG.CM.97CMMP807	--TD--L---		
02_AG.FR.DJ263	--T-----		
02_AG.FR.DJ264	--TD--A---		
02_AG.GH.G829	--TD--M---		
02_AG.NG.IBNG	--TD-----		
02_AG.SE.SE7812	--TD-----		
02_AG.SN.98SEMPI211	H-TD--A---		
02_AG.SN.98SEMPI213	--I-----		
03_AB.RU.KAL153-2	--TD--K---		
03_AB.RU.RU98001	--ID--K---		
04_cpx.CY.94CY032-3	--T---D---		
04_cpx.GR.97PVCH	--T-----		
04_cpx.GR.97PVMY	--R-----Q		

RT Epitopes 7-9

Epitope #	HLA
7	broad
8	B*5101
9	B51
B.FR.HXB2	
CONSENSUS -A	
A.BY.97BL006	CtEmEKkEgKISKIGP
A.KE.Q23	-K-x-----x-
A.SE.SE6594	-----
A.SE.SE7253	-----
A.SE.SE7535	-----
A.SE.SE8538	-----
A.SE.SE8891	-R-----
A.SE.UGSE8131	-----
A.UG.92UG037	-AD--R--R--
A.UG.U455	-N-----
A2.CD.97CDKFE4	-G-----
A2.CY.94CY017-41	-K-----
A2.CZM.ZAM184	-R-----
A2D.-.97KR004	-K-----
A2G.CD.97CDKFP58	-K-----
AC.ET.E3099G	-K-----
AC.IN.21301	-D-----
AC.RW.92RW009	-----
AC.SE.SE9488	--D---L-R--
ACD.SE.SE8603	-----R---
ACG.BE.VII035	-K-----
AD.SE.SE6954	-----AR--
AD.SE.SE7108	-----
ADHK.NO.97NOGIL3	-L-----
ADK.CD.MAL	-KD-----L-
AG.BE.VII197	-----
AG.NG.92NG003	--D-----
AGHU.GA.VI354	-N--Q-----R--
AGU.CD.Z321	F-----
AJ.BW.BW2117	F-----
CONSENSUS -B	CtEmEKkEgKISKIGP
B.AU.MBC18	-----
B.AU.MBC200	-----
B.AU.MBC925	VM-----
B.AU.MBCC54	-----
B.AU.MBCC98	-----
B.AU.MBCD36	-----K---R--
B.AU.VH	-----
B.CN.RL42	-----
B.DE.D31	-----
B.DE.HAN	-----
B.FR.HXB2	-----

HIV CTL Epitope Alignments

B.GA.OY1	-----V--	F1.FR.MP411	--D-----	05_DF.BE.VI1310	--D-----R--
B.GB.CAM1	-----	F2.CM.MP255	-----	05_DF.BE.VI961	--D-----R--
B.GB.GB8	-----	F2.CM.MP257	-----	06_cpx.AU.BFP90	-K-----
B.GB.MANC	-----	F2.KU.BE.VII126	-L-----	06_cpx.ML.95ML127	-----R--
B.KR.WK	-----	G.BE.DRCBL	-N-----	06_cpx.ML.95ML84	-----
B.NL.3202A21	-----	G.FLHH8793-1-1	-----R	06_cpx.SN.97SE1078	-----
B.TW.TWCYS	-----	G.NG.92NG083	-KD-----	10_CD.-.BFL06131	-K-----R--
B.UNK.NL43E9	-----	G.SE.SE6165	-K-E-----	10_CD.-.BFL07132	-D-----R--
B.US.AD8	-----R--	H.BE.VI991	-L-----	10_CD.-.BFL11033	-D-----R--
B.US.BC	-----	H.BE.VI997	-M-----	11_cpx.CM.97CM-MP818	-----
B.US.DHI23	-----	H.CF.90CF056	-----R--	11_cpx.FR.99FR-MP1298	-----
B.US.JRCSF	-----	J.SE.SE7022	-A-L-E-----	11_cpx.FR.99FR-MP1307	-L-----
B.US.JRFL	-----	J.SE.SE7887	-A-E-----RV--	11_cpx.GR.GR17	-----
B.US.MNCG	-----	K.CD.EQTB11C	-----	CqemEkeEgKIsriGP	-----
B.US.NY5CG	-----	K.CM.MP535	-----E--R--	CPZ.CD.CPZANT	-DKL-A-N--R--
B.US.P896	-----	MO.CM.97CAMP645MO	-----R--	CPZ.CM.CAM3	-Q-----R--
B.US.PT2-9-95C	-----L--	N.CM.YBF106	-----R--	CPZ.CM.CAM5	-Q-----
B.US.PT4-5-97	-----	N.CM.YBF30	-----R--	CPZ.GA.CPZGAB	-Q-----
B.US.RF	-----	O.CM.ANT70	-Q-Q-----R--	CPZ.US.CPZUS	-----TRV--
B.US.SF2	-----	O.CM.MVP5180	-Q-Q-----R--		
B.US.WEAU160	-----	O.SN.99SE-MP1299	-Q-Q-----R--		
B.US.WR27	-----VT--	O.SN.99SE-MP1300	-Q-Q-----R--		
B.US.YU2	-----	U.CD.-.83CD0031	-L-----		
BF1.BR.93BR029-4	-----				
CONSENSUS-C	CeMEkeGki tkIGP	CONSENSUS-	CkEmEeGKIsKIGP		
C.BR.92BR025	-D--R-----T--	UI55	-K-----		
C.BW.96BW01B03	-E-----T--	01_AE.CF.90CF11697	-K-E-----		
C.BW.96BW0402	-E-----T--	01_AE.CF.90CF402	-K-E-----		
C.BW.96BW0502	-E-----T--	01_AE.CF.90CF4071	-K-E-----		
C.BW.96BW1104	-E-----T--	01_AE.TH.93TH057	-K-E-----		
C.BW.96BW1210	-E-----VT--	01_AE.TH.93TH065	-K-E-----		
C.BW.96BW15B03	-E-----T--	01_AE.TH.93TH253	-K-E-----		
C.BW.96BW1626	-E-----T--	01_AE.TH.93TH902	-K-E-----		
C.BW.96BW17A09	-E-----T--	01_AE.TH.94TH702	-K-E-----		
C.ET.ETH2220	-E-Q-----R--	01_AE.TH.95THIH047	-K-E-----		
C.IN.93IN101	-D-----T--	01_AE.TH.CM240	-K-E-----		
C.IN.93IN904	-D-----T--	01_AE.TH.TH022	-KK-E-----		
C.IN.93IN905	-D-----T--	CONSENSUS-02_AG	CtEMEKEGKIsKIGP		
C.IN.93IN999	-D-R-----T--	02_AG.CM.97CMMMP807	-L-----		
C.IN.94IN11246	-N-----T--	02_AG.FR.DJ263	-----		
C.IN.95IN21068	-D-----T--	02_AG.FR.DJ264	-A-----		
CONSENSUS-D	CtemEkeGKIsriGP	02_AG.GH.G829	-M-----		
D.CD.84ZR085	--D-----R--	02_AG.NG.IBNG	-----R--		
D.CD.ELI	-D-----R--	02_AG.SE.SE7812	-----A--		
D.CD.NDK	-----R--	02_AG.SN.98SEMP1211	-----		
D.CD.ZZ6	-----RV--	02_AG.SN.98SEMP1213	-----		
D.UG.94UG1141	-S-L-----	03_AB.RU.KAL153-2	-K-----		
FI.BE.VI850	-L-----	03_AB.RU.RU98001	-K-----		
FI.BR.93BR020-1	-M-----	04_cpx.CY.94CY032-3	--D-----		
FI.FLFIN9363	--D-----R--	04_cpx.GR.97PVCH	-----Q--V--		

RT Epitope 10

Epitope #	HLA	GIPHPAGLK	HLA	GIPHPAGLK	Reference	HLA	Reference
B.FR.HXB2		GIPHPAGLK	A3	GIPHPAGLK	B.GB.MANC		
CONSENSUS--A		gIPHPaGLK			B.KR.WK		
A.B.Y.97BL006					B.NL.3202A21		
A.KE.Q23					B.TW.TWCYS		
A.SE.SE6594					B.UNK.NL43E9		
A.SE.SE7253					B.US.AD8		
A.SE.SE7535					B.US.BC		
A.SE.SE8538					B.US.DH123		
A.SE.UGSE8131					B.US.JRCSF		
A.U.G.92UG037					B.US.JRFL		
A.U.G.U455					B.US.MNCG		
A2.CD.97CDKFE4					B.US.NY5CG		
A2.CY.94CY017-41					B.US.P896		
A2C.ZM.ZAMI84					B.US.PT2-9-95C		
A2D.-.97KR004					B.US.PT4-5-97		
A2G.CD.97CDKP58					B.US.RF		
AC.ETE3099G					B.US.SF2		
AC.IN.21301					B.US.WEAU160		
AC.RW.92RW009					B.US.WR27		
AC.SE.SE9488					B.US.YU2		
ACD.SE.SE8603					BF1.BR.93BR029-4		
ACG.BE.VII1035					CONSENSUS-C		
AD.SE.SE6954					C.BR.92BR025		
AD.SE.SE7108					C.BW.96BW01B03		
ADHK.NO.97NOGIL3					C.BW.96BW0402		
ADK.CD.MAL					C.BW.96BW0502		
AG.BE.VII1197					C.BW.96BW1104		
AG.NG.92NG003					C.BW.96BW1210		
AGHU.GA.VI354					C.BW.96BW15B03		
AGU.CD.Z321					C.BW.96BW1626		
AJ.BW.BW2117					C.BW.96BW17A09		
CONSENSUS--B					C.ET.ETH2220		
B.AU.MBC18					C.IN.93IN101		
B.AU.MBC200					C.IN.93IN904		
B.AU.MBC925					C.IN.93IN905		
B.AU.MBCC54					C.IN.93IN999		
B.AU.MBCC98					C.IN.94IN11246		
B.AU.MBCD36					C.IN.95IN21068		
B.AU.VH					CONSENSUS-D		
B.CN.RL42					D.CD.84ZR085		
B.DE.D31					D.CD.ELI		
B.DE.HAN					D.CD.NDK		
B.FR.HXB2					D.CD.ZZ6		
B.GA.OYI					D.UG.94UG1141		
B.GB.CAMI					F1.BE.VI850		
B.GB.GB8					F1.BR.93BR020-1		
					F1.FIN9363		
					F1.FR.MP411		
					F2.CM.MP255		
					F2.CM.MP257		
					CONSENSUS--C		
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					C.BW.96BW01B03		
					C.BW.96BW0402		
					C.BW.96BW0502		
					C.BW.96BW1104		
					C.BW.96BW1210		
					C.BW.96BW15B03		
					C.BW.96BW1626		
					C.BW.96BW17A09		
					C.ET.ETH2220		
					C.IN.93IN101		
					C.IN.93IN904		
					C.IN.93IN905		
					C.IN.93IN999		
					C.IN.94IN11246		
					C.IN.95IN21068		
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					D.CD.84ZR085		
					D.CD.ELI		
					D.CD.NDK		
					D.CD.ZZ6		
					D.UG.94UG1141		
					F1.BE.VI850		
					F1.BR.93BR020-1		
					F1.FIN9363		
					F1.FR.MP411		
					F2.CM.MP255		
					F2.CM.MP257		
					CONSENSUS--E		
					B.GB.MANC		
					B.KR.WK		
					B.NL.3202A21		
					B.TW.TWCYS		
					B.UNK.NL43E9		
					B.US.AD8		
					B.US.BC		
					B.US.DH123		
					B.US.JRCSF		
					B.US.JRFL		
					B.US.MNCG		
					B.US.NY5CG		
					B.US.P896		
					B.US.PT2-9-95C		
					B.US.PT4-5-97		
					B.US.RF		
					B.US.SF2		
					B.US.WEAU160		
					B.US.WR27		
					B.US.YU2		
					BF1.BR.93BR029-4		
					CONSENSUS--F		
					U155		
					01_AE.CF90CF11697		
					01_AE.CF90CF402		
					01_AE.CF90CF4071		
					01_AE.TH.93TH057		
					01_AE.TH.93TH065		
					01_AE.TH.93TH253		
					01_AE.TH.93TH902		
					01_AE.TH.94TH702		
					01_AE.TH.95TNIH047		
					01_AE.TH.CM240		
					01_AE.TH.TH022		
					CONSENSUS--G		
					02__AG.CM.97CMMP807		
					02__AG.FR.DI263		
					02__AG.FR.DI264		
					02__AG.GH.G829		
					02__AG.NG.IBNG		
					02__AG.SE.SE7812		
					02__AG.SN.98SEMPI211		
					02__AG.SN.98SEMPI213		
					03__AB.RU.KAL153-2		
					03__AB.RU.RU98001		
					04__cpx.CY.94CY032-3		
					04__cpx.GR.97PVCH		
					04__cpx.GR.97PVMY		
					05__DF.BE.VII1310		
					05__DF.BE.VI961		
					06__cpx.AU.BFP90		
					CONSENSUS--H		
					F2KU.BE.VII126		
					G.BE.DRCBL		
					G.FI.HH8793-1-1		
					G.NG.92NG083		
					G.SE.SE6165		
					H.BE.VI991		
					H.BE.VI997		
					H.CF.90CF056		
					J.SE.SE7022		
					J.SE.SE7887		
					K.CD.EQTBI1C		
					K.CM.MP535		
					MO.CM.97CAMP645MO		
					N.CM.YBF106		
					N.CM.YBF30		
					O.CM.ANT70		
					O.CM.MVP5180		
					O.SN.99SE-MP1299		
					O.SN.99SE-MP1300		
					U.CD.-.83CD0031		
					CONSENSUS--I		
					U155		
					01_AE.CF90CF11697		
					01_AE.CF90CF402		
					01_AE.CF90CF4071		
					01_AE.TH.93TH057		
					01_AE.TH.93TH065		
					01_AE.TH.93TH253		
					01_AE.TH.93TH902		
					01_AE.TH.94TH702		
					01_AE.TH.95TNIH047		
					01_AE.TH.CM240		
					01_AE.TH.TH022		
					CONSENSUS--J		
					02__AG.CM.97CMMP807		
					02__AG.FR.DI263		
					02__AG.FR.DI264		
					02__AG.GH.G829		
					02__AG.NG.IBNG		
					02__AG.SE.SE7812		
					02__AG.SN.98SEMPI211		
					02__AG.SN.98SEMPI213		
					03__AB.RU.KAL153-2		
					03__AB.RU.RU98001		
					04__cpx.CY.94CY032-3		
					04__cpx.GR.97PVCH		
					04__cpx.GR.97PVMY		
					05__DF.BE.VII1310		
					05__DF.BE.VI961		
					06__cpx.AU.BFP90		

HIV CTL Epitope Alignments

B.GA.OY1	-----	F1.FR.MP411	-----	05_DF.BE.V11310	-----
B.GB.CAM1	-----	F2.CM.MP255	-----	05_DF.BE.V1961	-----
B.GB.GB8	-----	F2.CM.MP257	-R-----	06_cpx.AU.BFP90	-----
B.GB.MANC	-----	F2.KU.BE.V1126	-----	06_cpx.ML.95ML127	-----
B.KR.WK	-----	G.BE.DRCBL	-R-----	06_cpx.ML.95ML84	R-----
B.NL.3202A21	-----	G.FL.HH8793-1-1	ENQSA--	06_cpx.SN.97SE1078	-----
B.TW.TWCYS	-G-A-----	G.NG.92NG083	-R-----	10_CD-.BFL06131	-----
B.UNK.NL43E9	-----	G.SE.SE6165	-----	10_CD-.BFL07132	-----
B.US.AD8	-----	H.BE.V1991	-----S-----G-----	10_CD-.BFL11033	-----
B.US.BC	-----R-----	H.BE.V1997	-----S-----	11_cpx.CM.97CM-MP818	-----
B.US.DH123	-----	H.CF.90CF056	-----S-----	11_cpx.FR.99FR-MP1298	-----
B.US.JRCSF	-----	J.SE.SE7022	-----	11_cpx.FR.99FR-MP1307	-----
B.US.JRFL	R-----	J.SE.SE7887	-----	11_cpx.GR.GR17	-----
B.US.MNCG	-----	K.CD.EQTB11C	-----	KkSVTVLVDVGDAYFS	-----
B.US.NY5CG	-----	K.CM.MP535	-----	CPZ.CD.CPZANT	-----
B.US.P896	-----	MO.CM.97CAMF645MO	-----N-----	CPZ.CM.CAM3	-----
B.US.PT2-9-95C	-----	N.CM.YBF106	-----x-----	CPZ.CM.CAM5	-----
B.US.PT4-5-97	-----	N.CM.YBF30	-----	CPZ.GA.CPZGAB	-----
B.US.RF	-----	O.CM.ANT70	-Q-----	CPZ.US.CPZUS	-R-----
B.US.SF2	-----	O.CM.MVP5180	RQ-----		
B.US.WEAU160	-----	O.SN.99SE-MP1299	-Q-----		
B.US.WR27	-----x-----	O.SN.99SE-MP1300	-Q-----		
B.US.YU2	-----	U.CD-.83CD0031	-----		
BF1.BR.93BR029-4	-----				
CONSENSUS-C	KKSVTVLVDVGDAYFS	CONSENSUS-	KKSVTVLVDVGDAYFS		
C.BR.92BR025	-----	U155	-----		
C.BW.96BW01B03	-----	01_AE.CF.90CF11697	-----		
C.BW.96BW0402	-----	01_AE.CF.90CF402	-----		
C.BW.96BW0502	-----M-----	01_AE.CF.90CF4071	-----		
C.BW.96BW1104	-----	01_AE.TH.93TH057	-----		
C.BW.96BW1210	-----	01_AE.TH.93TH065	-----		
C.BW.96BW15B03	-----	01_AE.TH.93TH253	-----		
C.BW.96BW1626	-----	01_AE.TH.93TH902	-----		
C.BW.96BW17A09	-----	01_AE.TH.94TH702	-----		
C.ET.ETH2220	-----	01_AE.TH.95THIH047	-----		
C.IN.93IN101	-----	01_AE.TH.CM240	-----		
C.IN.93IN904	-----	01_AE.TH.TH022	-----		
C.IN.93IN905	-----				
C.IN.93IN999	-----	CONSENSUS-02_AG	KkSVTVLVDVGDAYFS		
C.IN.94IN11246	-----	02_AG.CM.97CMMMP807	-R-----		
C.IN.95IN21068	-----	02_AG.FR.DJ263	-----		
CONSENSUS-D	KKSVTVLVDVGDAYFS	02_AG.FR.DJ264	-Q-----		
D.CD.84ZR085	-----I-----	02_AG.GH.G829	-----		
D.CD.ELI	-----	02_AG.NG.IBNG	-----		
D.CD.NDK	-----	02_AG.SE.SE7812	-----		
D.CD.Z2Z6	-----	02_AG.SN.98SEMP1211	-----		
D.UG.94UG1141	-----	02_AG.SN.98SEMP1213	-E-----		
FI.BE.V1850	-----	03_AB.RU.KAL153-2	-----		
FI.BR.93BR020-1	-----	03_AB.RU.RU98001	-----		
FI.FLFIN9363	-----	04_cpx.CY.94CY032-3	-----		
	-----	04_cpx.GR.97PVCH	-----		
	-----	04_cpx.GR.97PVMY	-----		

RT Epitopes 15-18

Epitope #	HLA	B-FR.HXB2	-----K	F1.FLFIN9363	-----K
15	VLDVGDAYFSVPLDE	B.GA.OYI	-----K	F1.FR.MP411	-----K
16	VLDVGDAYFSV	B.GB.CAMI	-----K	F2.CM.MP255	-----K
17	VLDVGDAYFSV	B.GB.GB8	-----K	F2.CM.MP257	-----K
18	VLDVGDAYFSVPL	B.GB.MANC	-----Y-	F2KU.BE.V11126	-----P
B.FR.HXB2	DAYFSVPL	B.KR.WK	-----	G.BE.DRCBL	-----
	VLDVGDAYFSVPLDE	B.NL.3202A21	-----K	G.FI.HH8793-1-1	-----K
		B.TW.TWCYS	-----K	G.NG.92NG083	-----K
		B.UNK.NL43E9	-----K	G.SE.SE6165	-----
		B.US.AD8	-----K	H.BE.V1991	-----G-
		B.US.BC	-----R-	H.BE.V1997	-----K
		B.US.DH123	-----I-	H.CF.90CF056	-----K
		B.US.JRCSF	-----K	J.SE.SE7022	-----Y-
		B.US.JRFL	-----K	J.SE.SE7887	-----Y-
		B.US.MNCG	-----K	K.CD.EQTBI1C	-----K
		B.US.NY5CG	-----K	K.CM.MP535	-----K
		B.US.P896	-----	MO.CM.97CAMP645MO	-----N-
		B.US.PT2-9-95C	-----K	N.CM.YBF106	-----x-
		B.US.PT4-5-97	-----H-	N.CM.YBF30	-----C--K
		B.US.RF	-----K	O.CM.ANT70	-----C--P
		B.US.SF2	-----K	O.CM.MVP5180	-----C--P
		B.US.WEAU160	-----	O.SN.99SE-MP1299	-----C--P
		B.US.WR27	-----x--x--x	O.SN.99SE-MP1300	-----C--P
		B.US.YU2	-----H-	U.CD.-83CD0031	-----
		BF1.BR.93BR029-4	-----K		
				CONSENSUS-	VLDVGDAYFSVPLde
				U155	-----H-
				01_AE.CF.90CF11697	-----Y-
				01_AE.CF.90CF402	-----
				01_AE.CF.90CF4071	-----H-
				01_AE.TH.93TH057	-----
				01_AE.TH.93TH065	-----
				01_AE.TH.93TH253	-----
				01_AE.TH.93TH902	-----
				01_AE.TH.94TH702	-----
				01_AE.TH.95TNIH047	-----
				01_AE.TH.CM240	-----
				01_AE.TH.TH022	-----
				CONSENSUS-02_AG	VLDVGDAYFSVPLdk
				02_AG.CM.97CMMP807	-----
				02_AG.FR.DJ263	-----K
				02_AG.FR.DJ264	-----K
				02_AG.GH.G829	-----K
				02_AG.NG.IBNG	-----K
				02_AG.SE.SE7812	-----K
				02_AG.SN.98SEMP1211	-----
				02_AG.SN.98SEMP1213	-----K
				03_AB.RU.KALI53-2	-----Q
				03_AB.RU.RU98001	-----Q
				04_cpx.CY.94CY032-3	-----P
				04_cpx.GR.97PVCH	-----P
				CONSENSUS-C	VLDVGDAYFSVPLde
				C.BR.92BR025	-----
				C.BW.96BW01B03	-----
				C.BW.96BW0402	-----M-
				C.BW.96BW0502	-----
				C.BW.96BW1104	-----
				C.BW.96BW1210	-----
				C.BW.96BW15B03	-----
				C.BW.96BW1626	-----
				C.BW.96BW17A09	-----
				C.ETETH2220	-----
				C.IN.93IN101	-----Y-
				C.IN.93IN904	-----Y-
				C.IN.93IN905	-----Y-
				C.IN.93IN999	-----Y-
				C.IN.94IN11246	-----Y-
				C.IN.95IN21068	-----Y-
				CONSENSUS-D	VLDVGDAYFSVPLde
				D.CD.84ZR085	-----I--C-
				D.CD.ELI	-----
				D.CD.NDK	-----
				D.CD.ZZ6	-----K
				D.UG.94UG1141	-----H-
				Fl.BE.VI850	-----K
				Fl.BR.93BR020-1	-----K
				CONSENSUS-B	VLDVGDAYFSVPLdk
				B.AU.MBC18	-----K
				B.AU.MBC200	-----Y-
				B.AU.MBC925	-----
				B.AU.MBCC54	-----K
				B.AU.MBCC98	-----
				B.AU.MBCD36	-----K
				B.AU.VH	-----K
				B.CN.RL42	-----K
				B.DE.D31	-----
				B.DE.HAN	-----K

HIV CTL Epitope Alignments

F1.FR.MP411
 F2.CM.MP255
 F2.CM.MP257
 F2.KU.BE.VII126
 G.BE.DRCBL
 G.FLHH8793-1-1
 G.NG.92NG083
 G.SE.SE6165
 H.BE.V1991
 H.BE.V1997
 H.CF.90CF056
 J.SE.SE7022
 J.SE.SE7887
 K.CD.EQTB11C
 K.CM.MP535
 M.O.CM.97CAMP645MO
 N.CM.YBF106
 N.CM.YBF30
 O.CM.ANT70
 O.CM.MVP5180
 O.SN.99SE-MP1299
 O.SN.99SE-MP1300
 U.CD.-.83CD0031

CONSENSUS -
 U155
 01_AE.CF.90CF11697
 01_AE.CF.90CF402
 01_AE.TH.93TH057
 01_AE.TH.93TH065
 01_AE.TH.93TH253
 01_AE.TH.93TH902
 01_AE.TH.94TH702
 01_AE.TH.95TNIH047
 01_AE.TH.CM240
 01_AE.TH.TH022

CONSENSUS-02_AG
 02_AG.CM.97CAMP807
 02_AG.FR.DJ263
 02_AG.FR.DJ264
 02_AG.GH.G829
 02_AG.NG.IBNG
 02_AG.SE.SE7812
 02_AG.SN.98SEMP1211
 02_AG.SN.98SEMP1213
 03_AB.RU.KAL153-2
 03_AB.RU.RU98001
 04_cpx.CY.94CY032-3
 04_cpx.GR.97PVCH
 04_cpx.GR.97PVMY
 05_DF.BE.VII310

VPLDkEFRKY
 ---H---
 ---Y-G
 ---G
 ---G
 ---S
 ---S
 ---S
 ---S
 ---S
 ---S
 ---S
 ---S
 ---S
 ---S

VPLDkDFRKY
 ---G
 ---K
 ---K
 ---K
 ---K
 ---K
 ---Q
 ---Q
 ---PE
 ---PA
 ---PE
 ---KE

05_DF.BE.VI961
 06_cpx.AU.BFP90
 06_cpx.ML.95ML127
 06_cpx.ML.95ML84
 06_cpx.SN.97SE1078
 10_CD.-.BFL06131
 10_CD.-.BFL07132
 10_CD.-.BFL11033
 11_cpx.CM.97CM-MP818
 11_cpx.FR.99FR-MP1298
 11_cpx.FR.99FR-MP1307
 11_cpx.GR.GR17

CONSENSUS -CPZ
 CPZ.CD.CPZANT
 CPZ.CM.CAM3
 CPZ.CM.CAM5
 CPZ.GA.CPZGAB
 CPZ.US.CPZUS

CONSENSUS -CPZ
 I---Q
 C---N
 C---N
 C---K
 C---KE

05_DF.BE.VI961
 06_cpx.AU.BFP90
 06_cpx.ML.95ML127
 06_cpx.ML.95ML84
 06_cpx.SN.97SE1078
 10_CD.-.BFL06131
 10_CD.-.BFL07132
 10_CD.-.BFL11033
 11_cpx.CM.97CM-MP818
 11_cpx.FR.99FR-MP1298
 11_cpx.FR.99FR-MP1307
 11_cpx.GR.GR17

CONSENSUS -A
 A.BY.97BL006
 A.KE.Q23
 A.SE.SE6594
 A.SE.SE7253
 A.SE.SE7535
 A.SE.SE8538
 A.SE.SE8891
 A.SE.UGSE8131
 A.UG.92UG037
 A.UG.U455
 A2.CD.97CDKFE4
 A2.CY.94CY017-41
 A2C.ZM.ZAM184
 A2D.-.97KR004
 A2G.CD.97CDKFP58
 AC.ETE3099G
 AC.IN.21301
 AC.RW.92RW009
 AC.SE.SE9488
 ACD.SE.SE8603
 ACG.BE.VII035
 AD.SE.SE6954
 AD.SE.SE7108
 ADHK.NO.97NNOGIL3
 ADK.CD.MAL
 AG.BE.VII197
 AG.NG.92NG003
 AGHU.GA.VI354
 AGU.CD.Z321
 AJ.BW.BW2117

---H---
 I---K
 I---K
 ---G-N
 ---K
 ---Y
 ---G
 ---Y
 ---N
 ---KE
 ---S
 ---S

CONSENSUS -B
 B.AU.MBC18
 B.AU.MBC200
 B.AU.MBC925
 B.AU.MBCC54
 B.AU.MBCC98
 B.AU.MBCD36
 B.AU.VH
 B.CN.RL42
 B.DE.D31
 B.DE.HAN
 B.FR.HXB2

RT Epitopes 22-24

Epitope #
 22
 23
 24
B.FR.HXB2

HLA
 KYTAFTIPSI A2
 TAFTIPSI B*5101
 TAFTIPSI B51
KVTAFTIPSI

CONSENSUS -A
 A.BY.97BL006
 A.KE.Q23
 A.SE.SE6594
 A.SE.SE7253
 A.SE.SE7535
 A.SE.SE8538
 A.SE.SE8891
 A.SE.UGSE8131
 A.UG.92UG037
 A.UG.U455
 A2.CD.97CDKFE4
 A2.CY.94CY017-41
 A2C.ZM.ZAM184
 A2D.-.97KR004
 A2G.CD.97CDKFP58
 AC.ETE3099G
 AC.IN.21301
 AC.RW.92RW009
 AC.SE.SE9488
 ACD.SE.SE8603
 ACG.BE.VII035
 AD.SE.SE6954
 AD.SE.SE7108
 ADHK.NO.97NNOGIL3
 ADK.CD.MAL
 AG.BE.VII197
 AG.NG.92NG003
 AGHU.GA.VI354
 AGU.CD.Z321
 AJ.BW.BW2117

CONSENSUS -B
 B.AU.MBC18
 B.AU.MBC200
 B.AU.MBC925
 B.AU.MBCC54
 B.AU.MBCC98
 B.AU.MBCD36
 B.AU.VH
 B.CN.RL42
 B.DE.D31
 B.DE.HAN
 B.FR.HXB2

RT Epitope 25

Epitope #	HLA		
25	B*5101		
B.FR.HXB2	QGWKGSPaI		
	QGWKGSPaI		
CONSENSUS -A	QGWKGSPaI		
A.BY.97BL006	-----S-		
A.KE.Q23	-----		
A.SE.SE6594	-----		
A.SE.SE7253	-----		
A.SE.SE7535	-----		
A.SE.SE8538	-----S-		
A.SE.SE8891	-----		
A.SE.UGSE8131	-----		
A.UG.92UG037	-----		
A.UG.U455	-----S-		
A2.CD.97CDKFE4	-----S-		
A2.CY.94CY017-41	-----		
A2C.ZM.ZAM184	-----S-		
A2D-.97KR004	-----		
A2G.CD.97CDKP58	-----		
AC.ETE3099G	-----		
AC.IN.21301	-----		
AC.RW.92RW009	-----		
AC.SE.SE9488	-----		
ACD.SE.SER8603	-----		
ACG.BE.VII035	-----		
AD.SE.SE6954	-----		
AD.SE.SE7108	-----		
ADHK.NO.97NOGIL3	-----		
ADK.CD.MAL	-----		
AG.BE.VII197	-----		
AG.NG.92NG003	-----		
AGHU.GA.VI354	-----		
AGU.CD.Z321	-----		
AJ.BW.BW2117	-----		
CONSENSUS -B	QGWKGSPaI		
B.AU.MBC18	-----		
B.AU.MBC200	-----		
B.AU.MBC925	-----		
B.AU.MBCC54	-----		
B.AU.MBCC98	-----		
B.AU.MBCC36	-----		
B.AU.VH	-----		
B.CN.RL42	-----		
B.DE.D31	-----		
B.DE.HAN	-----		
B.FR.HXB2	-----		
B.GA.OYI	-----		
B.GB.CAM1	-----		
B.GB.GB8	-----		
B.GB.MANC	-----		
B.KR.WK	-----		
B.NL.3202A21	-----		
B.TW.TWCYS	-----		
B.UNK.NL43E9	-----		
B.US.AD8	-----		
B.US.BC	-----		
B.US.DHI23	-----		
B.US.JRCSF	-----		
B.US.JRFL	-----		
B.US.MNCG	-----		
B.US.NY5CG	-----		
B.US.P896	-----		
B.US.PT2-9-95C	-----		
B.US.PT4-5-97	-----		
B.US.RF	-----		
B.US.SF2	-----		
B.US.WEAU160	-----		
B.US.WR27	-----T-		
B.US.YU2	-----		
BF1.BR.93BR029-4	-----		
CONSENSUS -C	QGWKGSPaI		
C.BR.92BR025	-----S-		
C.BW.96BW01B03	-----		
C.BW.96BW0402	-----		
C.BW.96BW0502	-----		
C.BW.96BW1104	-----S-		
C.BW.96BW1210	-----		
C.BW.96BW15B03	-----S-		
C.BW.96BW1626	-----		
C.BW.96BW17A09	-----		
C.ET.ETH2220	-----P-		
C.IN.93IN101	-----		
C.IN.93IN904	-----		
C.IN.93IN905	-----		
C.IN.93IN999	-----		
C.IN.94IN11246	-----		
C.IN.95IN21068	-----		
CONSENSUS -D	QGWKGSPaI		
D.CD.84ZR085	-----		
D.CD.ELI	-----		
D.CD.NDK	-----		
D.CD.Z2Z6	-----		
D.UG.94UG1141	-----		
F1.BE.VI850	-----		
F1.BR.93BR020-1	-----		
F1.FI.FIN9363	-----		
F1.FR.MP411	-----		
F2.CM.MP255	-----		
F2.CM.MP257	-----		
F2.KU.BE.VII126	-----		
G.BE.DRCBL	-----		
G.FL.HH8793-1-1	-----		
G.NG.92NG083	-----		
G.SE.SE6165	-----		
H.BE.VI991	-----		
H.BE.VI997	-----		
H.CF.90CF056	-----		
J.SE.SE7022	-----		
J.SE.SE7887	-----		
K.CDE.QTB11C	-----		
K.CM.MP535	-----		
MO.CM.97CAMF645MO	-----		
N.CM.YBF106	-----		
N.CM.YBF30	-----		
O.CM.ANT70	-----		
O.CM.MVP5180	-----		
O.SN.99SE-MP1299	-----		
O.SN.99SE-MP1300	-----		
U.CD.-.83CD0031	-----		
CONSENSUS -	QGWKGSPaI		
U155	-----		
01_AE.CF.90CF11697	-----		
01_AE.CF.90CF402	-----R-		
01_AE.CF.90CF4071	-----		
01_AE.TH.93TH057	-----		
01_AE.TH.93TH065	-----		
01_AE.TH.93TH253	-----		
01_AE.TH.93TH902	-----		
01_AE.TH.94TH702	-----		
01_AE.TH.95TNIH047	-----		
01_AE.TH.CM240	-----		
01_AE.TH.TH022	-----		
CONSENSUS -02_AG	QGWKGSPaI		
02_AG.CM.97CMMP807	-----		
02_AG.FR.DJ263	-----		
02_AG.FR.DJ264	-----		
02_AG.GH.G829	-----		
02_AG.NG.IBNG	-----		
02_AG.SE.SE7812	-----		
02_AG.SN.98SEMP1211	-----S-		
02_AG.SN.98SEMP1213	-----		
03_AB.RU.KAL153-2	-----		
03_AB.RU.RU98001	-----		
04_cpx.CY.94CY032-3	-----		
04_cpx.GR.97PVCH	-----		
04_cpx.GR.97PVMY	-----		
05_DF.BE.VII1310	-----		
05_DF.BE.VI961	-----		

HIV CTL Epitope Alignments

F1.BR.93BR020-1	-----Y----	04_cpx.GR.97PVCH	-----Y----
F1.FIFIN9363	-----C----	04_cpx.GR.97PVMY	-----C----
F1.FR.MP411	-----C----	05_DF.BE.VI1310	-----C----
F2.CM.MP255	-----C----	05_DF.BE.VI961	-----C----
F2.CM.MP257	-----I----	06_cpx.AU.BFP90	-----I----
F2.KU.BE.VI1126	-----Y----	06_cpx.ML.95ML127	-----C----
G.BE.DRCBL	-----I----	06_cpx.ML.95ML.84	-----I----
G.FLHH8793-1-1	-----I----	06_cpx.SN.97SE1078	-----I----
G.NG.92NG083	-----I----	10_CD.-.BFL06131	-----I----
G.SE.SE6165	-----I----	10_CD.-.BFL07132	-----I----
H.BE.VI991	-----I----	10_CD.-.BFL11033	-----I----
H.BE.VI997	-----I----	11_cpx.CM.97CM-MP818	-----I----
H.CF.90CF056	-----I----	11_cpx.FR.99FR-MP1298	-----C----
J.SE.SE7022	-----C----	11_cpx.FR.99FR-MP1307	-----C----
J.SE.SE7887	-----C----	11_cpx.GR.GR17	-----C----
K.CD.EQTB11C	-----C----		
K.CM.MP535	-----H----	CONSENSUS - CPZ	WKGSPaIFQsSMT
MO.CM.97CAMF645MO	-----A----	CPZ.CD.CPZANT	-----A----
N.CM.YBF106	-----I----	CPZ.CM.CAM3	-----I----
N.CM.YBF30	-----T----	CPZ.CM.CAM5	-----I----
O.CM.ANT70	-----I----	CPZ.GA.CPZGAB	-----S----
O.CM.MVP5180	-----I----	CPZ.US.CPZUS	-----I----
O.SN.99SE-MP1299	-----I----		
O.SN.99SE-MP1300	-----I----		
U.CD.-.83CD0031	-----I----		
CONSENSUS -			
U155	WkGSPaIFQsSmtT		
01_AE.CF.90CF11697	-----A----		
01_AE.CF.90CF402	-----A----		
01_AE.CF.90CF4071	-R-----C----		
01_AE.TH.93TH057	-----I----		
01_AE.TH.93TH065	-----I----		
01_AE.TH.93TH253	-----I----		
01_AE.TH.93TH902	-----I----		
01_AE.TH.94TH702	-----I----		
01_AE.TH.95TNIH047	-----I----		
01_AE.TH.CM240	-----C-T----		
01_AE.TH.TH022	-----C-T----		
CONSENSUS--02_AG	WKGSPaIFQaSMT		
02_AG.CM.97CMMP807	-----A----		
02_AG.FR.DJ263	-----A----		
02_AG.FR.DJ264	-----A----		
02_AG.GH.G829	-----A----		
02_AG.NG.IBNG	-----A----		
02_AG.SE.SE7812	-----A----		
02_AG.SN.98SEMP1211	-----A----		
02_AG.SN.98SEMP1213	-----S-----I		
03_AB.RU.KAL153-2	-----I----		
03_AB.RU.RU98001	-----I----		
04_cpx.CY.94CY032-3	-----C----		

Epitope #	HLA
31	AIFQSSMTK A*0301
32	AIFQSSMTK A*1101
33	AIFQSSMTK A*1101, A3, A*0301, A*6801
34	AIFQSSMTK A11
35	AIFQSSMTK A3
36	AIFQSSMTK A3.1
37	AIFQSSMTK A33
38	AIFQSSMTK B*0301
B.FR.HXB2	AIFQSSMTK
CONSENSUS-A	aIFQsSMTk
A.BY.97BL006	S-----
A.KE.Q23	-----
A.SE.SE6594	-----
A.SE.SE7253	-----
A.SE.SE7535	-----
A.SE.SE8538	S-----
A.SE.SE8891	-----I----
A.SE.UGSE8131	-----
A.UG.92UG037	-----A----
A.UG.U455	S-----
A2.CD.97CDKFE4	S-----
A2.CY.94CY017-41	-----
A2.C.ZM.ZAM184	S-----
A2D.-.97KR004	-----
A2G.CD.97CDKPF58	-----
AC.ET.E3099G	-----E----
AC.IN.21301	-----A----
AC.RW.92RW009	-----N----
AC.SE.SE9488	-----
ACD.SE.SE8603	-----
ACG.BE.VI1035	-----A----
AD.SE.SE6954	-----
AD.SE.SE7108	-----
ADHK.NO.97NOGIL3	-----C----
ADK.CD.MAL	-----
AG.BE.VI1197	-----A----
AG.NG.92NG003	-----
AGHU.GA.VI354	-----
AGU.CD.Z321	-----
AJ.BW.BW2117	-----Y----
CONSENSUS-B	aIFqSsMTk
B.AU.MBC18	-----R----
B.AU.MBC200	-----
B.AU.MBC925	-----C----
B.AU.MBCC54	-----
B.AU.MBCC98	-----Y----
B.AU.MBCD36	-----

RT Epitope 45

Epitope #	HLA		
45	A*0201		
B.FR.HXB2			
CONSENSUS-A			
A.BY.97BL006	IYQYmDDLLYV	B.GB.GB8	F2.CM.MP257
A.KE.Q23	-----x-----	B.GB.MANC	F2.KU.BE.VI1126
A.SE.SE6594	-----	B.KR.WK	G.BE.DRCBL
A.SE.SE7253	-----	B.NL.3202A21	G.FL.HH8793-1-1
A.SE.SE7535	-----	B.TW.TWCYS	G.NG.92NG083
A.SE.SE8538	-----	B.UNK.NL43E9	G.SE.SE6165
A.SE.SE8891	-----	B.US.AD8	H.BE.VI991
A.SE.UGSE8131	-----	B.US.BC	H.BE.VI997
A.UG.92UG037	-----	B.US.DH123	H.CF.90CF056
A.UG.U455	-----	B.US.JRCSF	J.SE.SE7022
A2.CD.97CDKFF4	-----	B.US.JRFL	J.SE.SE7887
A2.CY.94CY017-41	-----	B.US.MNCG	K.CDEQTB11C
A2C.ZM.ZAM184	-----	B.US.NY5CG	K.CM.MP535
A2D.-97KKR004	-----	B.US.P896	MO.CM.97CAMP645MO
A2G.CD.97CDKPF58	-----	B.US.PT2-9-95C	N.CM.YBF106
AC.ETE3099G	-----	B.US.PT4-5-97	N.CM.YBF30
AC.IN.21301	-----	B.US.RF	O.CM.ANT70
AC.RW.92RW009	-----	B.US.SF2	O.CM.MVP5180
AC.SE.SE9488	-----	B.US.WEAU160	O.SN.99SE-MP1299
ACD.SE.SE8603	-----	B.US.WR27	O.SN.99SE-MP1300
ACG.BE.VI1035	-----	B.US.YU2	U.CD.-.83CD0031
AD.SE.SE6954	-----	BF1.BR.93BR029-4	
AD.SE.SE7108	-----		
ADHK.NO.97NOGIL3	-----		
ADK.CD.MAL	-----		
AG.BE.VI1197	-----		
AG.NG.92NG003	-----		
AGHU.GA.VI354	-----		
AGU.CD.Z321	-----		
AJ.BW.BW2117	-----		
CONSENSUS-B			
B.AU.MBC18	IYQYmDDLLYV	B.GB.GB8	F2.CM.MP257
B.AU.MBC200	-----	B.GB.MANC	F2.KU.BE.VI1126
B.AU.MBC925	-----	B.KR.WK	G.BE.DRCBL
B.AU.MBCC54	-----	B.NL.3202A21	G.FL.HH8793-1-1
B.AU.MBCC98	-----	B.TW.TWCYS	G.NG.92NG083
B.AU.MBCD36	-----	B.UNK.NL43E9	G.SE.SE6165
B.AU.VH	-----	B.US.AD8	H.BE.VI991
B.CN.RL42	-----	B.US.BC	H.BE.VI997
B.DE.D31	-----	B.US.DH123	H.CF.90CF056
B.DE.HAN	-----	B.US.JRCSF	J.SE.SE7022
B.FR.HXB2	-----	B.US.JRFL	J.SE.SE7887
B.GA.OYI	-----	B.US.MNCG	K.CDEQTB11C
B.GB.CAMI	-----	B.US.NY5CG	K.CM.MP535
		B.US.P896	MO.CM.97CAMP645MO
		B.US.PT2-9-95C	N.CM.YBF106
		B.US.PT4-5-97	N.CM.YBF30
		B.US.RF	O.CM.ANT70
		B.US.SF2	O.CM.MVP5180
		B.US.WEAU160	O.SN.99SE-MP1299
		B.US.WR27	O.SN.99SE-MP1300
		B.US.YU2	U.CD.-.83CD0031
		BF1.BR.93BR029-4	
CONSENSUS-C			
C.BR.92BR025	IYQYmDDLLYV	B.GB.GB8	F2.CM.MP257
C.BW.96BW01B03	-----	B.GB.MANC	F2.KU.BE.VI1126
C.BW.96BW0402	-----	B.KR.WK	G.BE.DRCBL
C.BW.96BW0502	-----	B.NL.3202A21	G.FL.HH8793-1-1
C.BW.96BW1104	-----	B.TW.TWCYS	G.NG.92NG083
C.BW.96BW1210	-----	B.UNK.NL43E9	G.SE.SE6165
C.BW.96BW15B03	-----	B.US.AD8	H.BE.VI991
C.BW.96BW1626	-----	B.US.BC	H.BE.VI997
C.BW.96BW17A09	-----	B.US.DH123	H.CF.90CF056
C.ETE.TH2220	-----	B.US.JRCSF	J.SE.SE7022
C.IN.93IN101	-----	B.US.JRFL	J.SE.SE7887
C.IN.93IN904	-----	B.US.MNCG	K.CDEQTB11C
C.IN.93IN905	-----	B.US.NY5CG	K.CM.MP535
C.IN.93IN999	-----	B.US.P896	MO.CM.97CAMP645MO
C.IN.94IN11246	-----	B.US.PT2-9-95C	N.CM.YBF106
C.IN.95IN21068	-----	B.US.PT4-5-97	N.CM.YBF30
		B.US.RF	O.CM.ANT70
		B.US.SF2	O.CM.MVP5180
		B.US.WEAU160	O.SN.99SE-MP1299
		B.US.WR27	O.SN.99SE-MP1300
		B.US.YU2	U.CD.-.83CD0031
		BF1.BR.93BR029-4	
CONSENSUS-D			
D.CD.84ZR085	IYQYmDDLLYV	B.GB.GB8	F2.CM.MP257
D.CD.ELI	-----	B.GB.MANC	F2.KU.BE.VI1126
D.CD.NDK	-----	B.KR.WK	G.BE.DRCBL
D.CD.Z2Z6	-----	B.NL.3202A21	G.FL.HH8793-1-1
D.UG.94UG1141	-----	B.TW.TWCYS	G.NG.92NG083
F1.BE.VI850	-----	B.UNK.NL43E9	G.SE.SE6165
F1.BR.93BR020-1	-----	B.US.AD8	H.BE.VI991
F1.FLFIN9363	-----	B.US.BC	H.BE.VI997
F1.FR.MP411	-----	B.US.DH123	H.CF.90CF056
F2.CM.MP255	-----	B.US.JRCSF	J.SE.SE7022
		B.US.JRFL	J.SE.SE7887
		B.US.MNCG	K.CDEQTB11C
		B.US.NY5CG	K.CM.MP535
		B.US.P896	MO.CM.97CAMP645MO
		B.US.PT2-9-95C	N.CM.YBF106
		B.US.PT4-5-97	N.CM.YBF30
		B.US.RF	O.CM.ANT70
		B.US.SF2	O.CM.MVP5180
		B.US.WEAU160	O.SN.99SE-MP1299
		B.US.WR27	O.SN.99SE-MP1300
		B.US.YU2	U.CD.-.83CD0031
		BF1.BR.93BR029-4	
CONSENSUS-E			
E.CD.97CDKFF4	IYQYmDDLLYV	B.GB.GB8	F2.CM.MP257
E.CY.94CY017-41	-----	B.GB.MANC	F2.KU.BE.VI1126
E.ZM.ZAM184	-----	B.KR.WK	G.BE.DRCBL
E.-97KKR004	-----	B.NL.3202A21	G.FL.HH8793-1-1
E.CD.97CDKPF58	-----	B.TW.TWCYS	G.NG.92NG083
E.ETE3099G	-----	B.UNK.NL43E9	G.SE.SE6165
E.IN.21301	-----	B.US.AD8	H.BE.VI991
E.RW.92RW009	-----	B.US.BC	H.BE.VI997
E.SE.SE9488	-----	B.US.DH123	H.CF.90CF056
E.CD.SE.SE8603	-----	B.US.JRCSF	J.SE.SE7022
E.BE.VI1035	-----	B.US.JRFL	J.SE.SE7887
E.SE.SE6954	-----	B.US.MNCG	K.CDEQTB11C
E.SE.SE7108	-----	B.US.NY5CG	K.CM.MP535
E.HK.NO.97NOGIL3	-----	B.US.P896	MO.CM.97CAMP645MO
E.K.CD.MAL	-----	B.US.PT2-9-95C	N.CM.YBF106
E.BE.VI1197	-----	B.US.PT4-5-97	N.CM.YBF30
E.NG.92NG003	-----	B.US.RF	O.CM.ANT70
E.HU.GA.VI354	-----	B.US.SF2	O.CM.MVP5180
E.CD.Z321	-----	B.US.WEAU160	O.SN.99SE-MP1299
E.BW.BW2117	-----	B.US.WR27	O.SN.99SE-MP1300
		B.US.YU2	U.CD.-.83CD0031
		BF1.BR.93BR029-4	
CONSENSUS-F			
F.CD.97CDKFF4	IYQYmDDLLYV	B.GB.GB8	F2.CM.MP257
F.CY.94CY017-41	-----	B.GB.MANC	F2.KU.BE.VI1126
F.ZM.ZAM184	-----	B.KR.WK	G.BE.DRCBL
F.-97KKR004	-----	B.NL.3202A21	G.FL.HH8793-1-1
F.CD.97CDKPF58	-----	B.TW.TWCYS	G.NG.92NG083
F.ETE3099G	-----	B.UNK.NL43E9	G.SE.SE6165
F.IN.21301	-----	B.US.AD8	H.BE.VI991
F.RW.92RW009	-----	B.US.BC	H.BE.VI997
F.SE.SE9488	-----	B.US.DH123	H.CF.90CF056
F.CD.SE.SE8603	-----	B.US.JRCSF	J.SE.SE7022
F.BE.VI1035	-----	B.US.JRFL	J.SE.SE7887
F.SE.SE6954	-----	B.US.MNCG	K.CDEQTB11C
F.SE.SE7108	-----	B.US.NY5CG	K.CM.MP535
F.HK.NO.97NOGIL3	-----	B.US.P896	MO.CM.97CAMP645MO
F.K.CD.MAL	-----	B.US.PT2-9-95C	N.CM.YBF106
F.BE.VI1197	-----	B.US.PT4-5-97	N.CM.YBF30
F.NG.92NG003	-----	B.US.RF	O.CM.ANT70
F.HU.GA.VI354	-----	B.US.SF2	O.CM.MVP5180
F.CD.Z321	-----	B.US.WEAU160	O.SN.99SE-MP1299
F.BW.BW2117	-----	B.US.WR27	O.SN.99SE-MP1300
		B.US.YU2	U.CD.-.83CD0031
		BF1.BR.93BR029-4	
CONSENSUS-G			
G.CD.97CDKFF4	IYQYmDDLLYV	B.GB.GB8	F2.CM.MP257
G.CY.94CY017-41	-----	B.GB.MANC	F2.KU.BE.VI1126
G.ZM.ZAM184	-----	B.KR.WK	G.BE.DRCBL
G.-97KKR004	-----	B.NL.3202A21	G.FL.HH8793-1-1
G.CD.97CDKPF58	-----	B.TW.TWCYS	G.NG.92NG083
G.ETE3099G	-----	B.UNK.NL43E9	G.SE.SE6165
G.IN.21301	-----	B.US.AD8	H.BE.VI991
G.RW.92RW009	-----	B.US.BC	H.BE.VI997
G.SE.SE9488	-----	B.US.DH123	H.CF.90CF056
G.CD.SE.SE8603	-----	B.US.JRCSF	J.SE.SE7022
G.BE.VI1035	-----	B.US.JRFL	J.SE.SE7887
G.SE.SE6954	-----	B.US.MNCG	K.CDEQTB11C
G.SE.SE7108	-----	B.US.NY5CG	K.CM.MP535
G.HK.NO.97NOGIL3	-----	B.US.P896	MO.CM.97CAMP645MO
G.K.CD.MAL	-----	B.US.PT2-9-95C	N.CM.YBF106
G.BE.VI1197	-----	B.US.PT4-5-97	N.CM.YBF30
G.NG.92NG003	-----	B.US.RF	O.CM.ANT70
G.HU.GA.VI354	-----	B.US.SF2	O.CM.MVP5180
G.CD.Z321	-----	B.US.WEAU160	O.SN.99SE-MP1299
G.BW.BW2117	-----	B.US.WR27	O.SN.99SE-MP1300
		B.US.YU2	U.CD.-.83CD0031
		BF1.BR.93BR029-4	
CONSENSUS-H			
H.CD.97CDKFF4	IYQYmDDLLYV	B.GB.GB8	F2.CM.MP257
H.CY.94CY017-41	-----	B.GB.MANC	F2.KU.BE.VI1126
H.ZM.ZAM184	-----	B.KR.WK	G.BE.DRCBL
H.-97KKR004	-----	B.NL.3202A21	G.FL.HH8793-1-1
H.CD.97CDKPF58	-----	B.TW.TWCYS	G.NG.92NG083
H.ETE3099G	-----	B.UNK.NL43E9	G.SE.SE6165
H.IN.21301	-----	B.US.AD8	H.BE.VI991
H.RW.92RW009	-----	B.US.BC	H.BE.VI997
H.SE.SE9488	-----	B.US.DH123	H.CF.90CF056
H.CD.SE.SE8603	-----	B.US.JRCSF	J.SE.SE7022
H.BE.VI1035	-----	B.US.JRFL	J.SE.SE7887
H.SE.SE6954	-----	B.US.MNCG	K.CDEQTB11C
H.SE.SE7108	-----	B.US.NY5CG	K.CM.MP535
H.HK.NO.97NOGIL3	-----	B.US.P896	MO.CM.97CAMP645MO
H.K.CD.MAL	-----	B.US.PT2-9-95C	N.CM.YBF106
H.BE.VI1197	-----	B.US.PT4-5-97	N.CM.YBF30
H.NG.92NG003	-----	B.US.RF	O.CM.ANT70
H.HU.GA.VI354	-----	B.US.SF2	O.CM.MVP5180
H.CD.Z321	-----	B.US.WEAU160	O.SN.99SE-MP1299
H.BW.BW2117	-----	B.US.WR27	O.SN.99SE-MP1300
		B.US.YU2	U.CD.-.83CD0031
		BF1.BR.93BR029-4	
CONSENSUS-I			
I.CD.97CDKFF4	IYQYmDDLLYV	B.GB.GB8	F2.CM.MP257
I.CY.94CY017-41	-----	B.GB.MANC	F2.KU.BE.VI1126
I.ZM.ZAM184	-----	B.KR.WK	G.BE.DRCBL
I.-97KKR004	-----	B.NL.3202A21	G.FL.HH8793-1-1
I.CD.97CDKPF58	-----	B.TW.TWCYS	G.NG.92NG083
I.ETE3099G	-----	B.UNK.NL43E9	G.SE.SE6165
I.IN.21301	-----	B.US.AD8	H.BE.VI991
I.RW.92RW009	-----	B.US.BC	H.BE.VI997
I.SE.SE9488	-----	B.US.DH123	H.CF.90CF056
I.CD.SE.SE8603	-----	B.US.JRCSF	J.SE.SE7022
I.BE.VI1035	-----	B.US.JRFL	J.SE.SE7887
I.SE.SE6954	-----	B.US.MNCG	K.CDEQTB11C
I.SE.SE7108	-----	B.US.NY5CG	K.CM.MP535
I.HK.NO.97NOGIL3	-----	B.US.P896	MO.CM.97CAMP645MO
I.K.CD.MAL	-----	B.US.PT2-9-95C	N.CM.YBF106
I.BE.VI1197	-----	B.US.PT4-5-97	N.CM.YBF30
I.NG.92NG003	-----	B.US.RF	O.CM.ANT70
I.HU.GA.VI354	-----	B.US.SF2	O.CM.MVP5180
I.CD.Z321	-----	B.US.WEAU160	O.SN.99SE-MP1299
I.BW.BW2117	-----	B.US.WR27	O.SN.99SE-MP1300
		B.US.YU2	U.CD.-.83CD0031
		BF1.BR.93BR029-4	
CONSENSUS-J			
J.CD.97CDKFF4	IYQYmDDLLYV	B.GB.GB8	F2.CM.MP257
J.CY.94CY017-41	-----	B.GB.MANC	F2.KU.BE.VI1126
J.ZM.ZAM184	-----	B.KR.WK	G.BE.DRCBL
J.-97KKR004	-----	B.NL.3202A21	G.FL.HH8793-1-1
J.CD.97CDKPF58	-----	B.TW.TWCYS	G.NG.92NG083
J.ETE3099G	-----	B.UNK.NL43E9	G.SE.SE6165
J.IN.21301	-----	B.US.AD8	H.BE.VI991
J.RW.92RW009	-----	B.US.BC	H.BE.VI997
J.SE.SE9488	-----	B.US.DH123	H.CF.90CF056
J.CD.SE.SE8603	-----	B.US.JRCSF	J.SE.SE7022
J.BE.VI1035	-----	B.US.JRFL	J.SE.SE7887
J.SE.SE6954	-----	B.US.MNCG	K.CDEQTB11C
J.SE.SE7108	-----	B.US.NY5CG	K.CM.MP535
J.HK.NO.97NOGIL3	-----	B.US.P896	MO.CM.97CAMP645MO
J.K.CD.MAL	-----	B.US.PT2-9-95C	N.CM.YBF106
J.BE.VI1197	-----	B.US.PT4-5-97	N.CM.YBF30
J.NG.92NG003	-----	B.US.RF	O.CM.ANT70
J.HU.GA.VI354	-----	B.US.SF2	O.CM.MVP5180
J.CD.Z321	-----	B.US.WEAU160	O.SN.99SE-MP1299
J.BW.BW2117	-----	B.US.WR27	O.SN.99SE-MP1300
		B.US.YU2	U.CD.-.83CD0031
		BF1.BR.93BR029-4	
CONSENSUS-K			
K.CD.97CDKFF4	IYQYmDDLLYV		

HIV CTL Epitope Alignments

F2.CM.MP257	-----A-	06_cpx.AU.BFP90	-----A-	-----A-	-----A-
F2KU.BE.VII1126	-----A-	06_cpx.ML.95ML127	-----A-	-----A-	-----A-
G.BE.DRCBL	-----A-	06_cpx.ML.95ML84	-----A-	-----A-	-----A-
G.FL.HH8793-1-1	-----A-	06_cpx.SN.97SE1078	-----E-	-----E-	-----E-
G.NG.92NG083	-----A-	10_CD.-.BFL06131	--Q--H--TI-	-----A-	-----A-
G.SE.SE6165	-----A-	10_CD.-.BFL07132	-----A-	-----A-	-----A-
H.BE.V1991	-----E-	10_CD.-.BFL11033	-----I-	-----I-	-----I-
H.BE.V1997	-----A-	11_cpx.CM.97CM-MP818	-----E-	-----E-	-----E-
H.CF.90CF056	-----A-	11_cpx.FR.99FR-MP1298	-----E-	-----E-	-----E-
J.SE.SE7022	-----R-	11_cpx.FR.99FR-MP1307	-----E-	-----E-	-----E-
J.SE.SE7887	-----R-	11_cpx.GR.GR17	-----E-	-----E-	-----E-
K.CD.EQTB11C	-----A-				
K.CM.MP535	-----P-				
MO.CM.97CAMP645MO	-----AQ				
N.CM.YBF106	-----ET	CONSENSUS - CPZ	DleI qHRek		
N.CM.YBF30	-----LA--EA	CPZ.CD.CPZANT	-M--TA--EM		
O.CM.ANT70	-----PLTE--KR	CPZ.CM.CAM3	----LRE--E-		
O.CM.MVP5180	-----PLAE--KR	CPZ.CM.CAM5	----K--E-		
O.SN.99SE-MP1299	-----PLTE--KR	CPZ.GA.CPZGAB	----D--K-		
O.SN.99SE-MP1300	-----PLTE--KR	CPZ.US.CPZUS	--NLEK--E-		
U.CD.-.83CD0031	-----A-				
CONSENSUS -					
U155	DLeI gqHrK				
01_AE.CF.90CF11697	-----D--A-				
01_AE.CF.90CF402	-----G--				
01_AE.CF.90CF4071	-----I-				
01_AE.TH.93TH057	-----T-P--A-				
01_AE.TH.93TH065	-----T--A-				
01_AE.TH.93TH253	-----A-				
01_AE.TH.93TH902	-----A-				
01_AE.TH.94TH702	-----A-				
01_AE.TH.95TNIH047	-----A-				
01_AE.TH.CM240	-----A-				
01_AE.TH.TH022	-----A-				
CONSENSUS -02_ag	DLeI gQHRK				
02_AG.CM.97CMMP807	-----K--A-				
02_AG.FR.DJ263	-----E--A-				
02_AG.FR.DJ264	-----A-				
02_AG.GH.G829	-----A-				
02_AG.NG.IBNG	-----A-				
02_AG.SE.SE7812	-----A-				
02_AG.SN.98SEMP1211	-----A-				
02_AG.SN.98SEMP1213	-----A-				
03_AB.RU.KAL153-2	-----E-				
03_AB.RU.RU98001	-----I-				
04_cpx.CY.94CY032-3	-----A-				
04_cpx.GR.97PVCH	-----A-				
04_cpx.GR.97PVMY	-----KA-				
05_DF.BE.VII1310	-----A-				
05_DF.BE.VI961	-----A-				

RT Epitope 47

Epitope #	HLA
47	A2
B.FR.HXB2	KIEELRQHL
	KIEELRQHL
CONSENSUS-A	KiEELRaHL
A.BY.97BL006	-----A-
A.KE.Q23	-----A-
A.SE.SE6594	-----S-
A.SE.SE7253	-----A-
A.SE.SE7535	-----E-
A.SE.SE8538	-----A-
A.SE.SE8891	-V-----A-
A.SE.UGSE8131	-----A-
A.UG.92UG037	-----E-
A.UG.U455	-----A-
A2.CD.97CDKFF4	-----A-
A2.CY.94CY017-41	-----A-
A2C.ZM.ZAM184	-----A-
A2D.-.97KR004	-----N-
A2G.CD.97CDKP58	-----E-
AC.ETE3099G	-----A-I
AC.IN.21301	-----E-
AC.RW.92RW009	-----E-
AC.SE.SE9488	-----A-
ACD.SE.SE8603	-----E-
ACG.BE.VI1035	-----E-
AD.SE.SE6954	-----G-
AD.SE.SE7108	-----E-
ADHK.NO.97NNOGIL3	-----E-
ADK.CD.MAL	-----E-
AG.BE.VII1197	--D--E--E-
AG.NG.92NG003	-----N-
AGHU.GA.VI354	-----A-
AGU.CD.Z321	-----E-
AJ.BW.BW2117	-----E-
CONSENSUS-B	KiEeLRqhl
B.AU.MBC18	-----H-
B.AU.MBC200	-----H-
B.AU.MBC925	-----H-
B.AU.MBCC54	-----R-
B.AU.MBCC98	-----R-
B.AU.MBCD36	-----R-
B.AU.VH	-----R-
B.CN.RL42	-----R-
B.DE.D31	-----R-
B.DE.HAN	-----R-
B.FR.HXB2	-----R-
B.GA.OYI	-----R-
B.GB.CAMI	-----R-

HIV CTL Epitope Alignments

B.GB.GB8	-----	F2.CM.MP257	-----E--	06_cpx.AU.BFP90	-----E--
B.GB.MANC	-----Y-	F2KU.BE.VII1126	-----E--	06_cpx.ML.95ML127	-----E--
B.KR.WK	-----	G.BE.DRCBL	-----E--	06_cpx.ML.95ML84	-----E--
B.NL.3202A21	-----	G.FI.HH8793-I-1	-K-----	06_cpx.SN.97SE1078	-V-----A-
B.TW.TWCYS	-V-----	G.NG.92NG083	-----E--	10_CD.-.BFL06131	-----G--
B.UNK.NL43E9	-----	G.SE.SE6165	-----E--	10_CD.-.BFL07132	--D--G--
B.US.AD8	-----	H.BE.V1991	-----A-	10_CD.-.BFL11033	-----E--
B.US.BC	-----	H.BE.V1997	-----A-	11_cpx.CM.97CM-MP818	-V-----K-
B.US.DH123	-----	H.CF.90CF056	-----A-	11_cpx.FR.99FR-MP1298	-----K--
B.US.JRCSF	-----	J.SE.SE7022	-K-----	11_cpx.FR.99FR-MP1307	-V-----E--
B.US.JRFL	-----	J.SE.SE7887	-K-----	11_cpx.GR.GR17	-V-----K--
B.US.MNCG	-----R-	K.CD.EQTBI1C	-----E--	CONSENSUS-CPZ	kvELLRQhL
B.US.NY5CG	-----	K.CM.MP535	-----E--	CPZ.CD.CPZANT	M--K----
B.US.P896	--D-----	MO.CM.97CAMP645MO	Q-----EY	CPZ.CM.CAM3	-V-L-----
B.US.PT2-9-95C	-V-D-----	N.CM.YBF106	TV-----G	CPZ.CM.CAM5	-V-L-----
B.US.PT4-5-97	-----	N.CM.YBF30	AV-D--D--	CPZ.GA.CPZGAB	-V-----
B.US.RF	-----E--	O.CM.ANT70	R--L--E--	CPZ.US.CPZUS	-V-L--Y-
B.US.SF2	-----	O.CM.MVP5180	RV-L--E--		
B.US.WEAU160	-----	O.SN.99SE-MP1299	RV-L--E--		
B.US.WR27	-----	O.SN.99SE-MP1300	RV-L--E--		
B.US.YU2	-----	U.CD.-.83CD0031	-----A-		
BF1.BR.93BR029-4	-----		-----A-		
CONSENSUS-C	kiEELreHL	CONSENSUS-	kiELreHL		
C.BR.92BR025	-----E-	UI55	-----A-		
C.BW.96BW01B03	-----SKE--	01_AE.CF.90CF11697	-----D-		
C.BW.96BW0402	-----E--	01_AE.CF.90CF402	-V-D--A-		
C.BW.96BW0502	Q-----E-	01_AE.CF.90CF4071	-----A-		
C.BW.96BW1104	R-----K--	01_AE.TH.93TH057	-----A-		
C.BW.96BW1210	-----E-	01_AE.TH.93TH065	-----A-		
C.BW.96BW15B03	-----K--	01_AE.TH.93TH253	-----A-		
C.BW.96BW1626	-----T--	01_AE.TH.93TH902	-----A-		
C.BW.96BW17A09	-----E-	01_AE.TH.94TH702	-----A-		
C.ET.ETH2220	P-----E-	01_AE.TH.95TNIH047	-----A-		
C.IN.93IN101	-----E-	01_AE.TH.CM240	-----A-		
C.IN.93IN904	-----G--	01_AE.TH.TH022	-----A-		
C.IN.93IN905	-----E-				
C.IN.93IN999	-----E-	CONSENSUS-02_AG	KIEELReHL		
C.IN.94IN11246	-----E-	02_AG.CM.97CMMMP807	-----E--		
C.IN.95IN21068	-----K--	02_AG.FR.DJ263	-----E--		
CONSENSUS-D	KIEELReHL	02_AG.FR.DJ264	-----E--		
D.CD.84ZR085	--K--E--	02_AG.GH.G829	-----E--		
D.CD.ELI	--K--E--	02_AG.NG.IBNG	-----G--		
D.CD.NDK	-----E--	02_AG.SE.SE7812	-----E--		
D.CD.Z2Z6	-----E--	02_AG.SN.98SEMP1211	-----E--		
D.UG.94UG1141	-----G--	02_AG.SN.98SEMP1213	-----E--		
F1.BE.V1850	-----E--	03_AB.RU.KAL153-2	E-----E-		
F1.BR.93BR020-1	-----E--	03_AB.RU.RU98001	-----D-		
F1.FI.FIN9363	-----E--	04_cpx.CY.94CY032-3	-----E--		
F1.FR.MP411	-----E--	04_cpx.GR.97PVCH	-----E--		
F2.CM.MP255	-----E--	05_DF.BE.VII1310	-K-----E-		
	-----E--	05_DF.BE.V1961	-----E--		

RT Epitope 48

Epitope #	HLA		
48	B*4001		
B.FR.HXB2	IEELRQHLL		
	IEELRQHLL		
CONSENSUS-A	iEELRaHLL		
A.BY.97BL006	-----A-----		
A.KE.Q23	-----A-----		
A.SE.SE6594	-----S-----		
A.SE.SE7253	-----A-----		
A.SE.SE7535	-----E-----		
A.SE.SE8538	-----A-----		
A.SE.SE8891	-----A-----		
A.SE.UGSE8131	V-----A-----		
A.UG.92UG037	-----E-----		
A.UG.U455	-----A-----		
A2.CD.97CDKFE4	-----A-----		
A2.CY.94CY017-41	-----A-----		
A2C.ZM.ZAM184	-----A-----		
A2D-.97KR004	-----N-----		
A2G.CD.97CDKP58	-----E-----		
AC.ETE3099G	-----A-I-----		
AC.IN.21301	-----E-----		
AC.RW.92RW009	-----E-----		
AC.SE.SE9488	-----A-----		
ACD.SE.SER603	-----E-----		
ACG.BE.VII035	-----E-----		
AD.SE.SE6954	-----G-----		
AD.SE.SE7108	-----E-----		
ADHK.NO.97NOGIL3	-----E-----		
ADK.CD.MAL	-----E-----		
AG.BE.VII197	-D--E-----		
AG.NG.92NG003	-----N-----		
AGHU.GA.VI354	-----A-----		
AGU.CD.Z321	-----E-----		
AJ.BW.BW2117	-----E-----		
CONSENSUS-B	iEeLRqhLL		
B.AU.MBC18	-----H-----		
B.AU.MBC200	-----H-----		
B.AU.MBC925	-----H-----		
B.AU.MBCC54	-----H-----		
B.AU.MBCC98	-----R-----		
B.AU.MBCD36	-----H-----		
B.AU.VH	-----H-----		
B.CN.RL42	-----H-----		
B.DE.D31	-----H-----		
B.DE.HAN	-----H-----		
B.FR.HXB2	-----H-----		
B.GA.OYI	-----H-----		
B.GB.CAMI	-----H-----		
B.GB.GB8	-----Y--		
B.GB.MANC	-----Y--		
B.KR.WK	-----E-----		
B.NL.3202A21	-----E-----		
B.TW.TWCYS	-----E-----		
B.UNK.NL43E9	V-----E-----		
B.US.AD8	-----E-----		
B.US.BC	-----A-----		
B.US.DH123	-----A-----		
B.US.JRCSF	-----K-E-----		
B.US.JRFL	-----K-E-----		
B.US.MNCG	-----R-----		
B.US.NY5CG	-----E-----		
B.US.P896	-----D-----		
B.US.PT2-9-95C	V-D-----		
B.US.PT4-5-97	-----E-----		
B.US.RF	-----E-----		
B.US.SF2	-----E-----		
B.US.WEAU160	-----E-----		
B.US.WR27	-----E-----		
B.US.YU2	-----E-----		
BF1.BR.93BR029-4	-----E-----		
CONSENSUS-C	IEELreHLL		
C.BR.92BR025	-----E-----		
C.BW.96BW01B03	--SKE--		
C.BW.96BW0402	-----E-----		
C.BW.96BW0502	-----E-----		
C.BW.96BW1104	-----K-----		
C.BW.96BW1210	-----E-----		
C.BW.96BW15B03	-----K-----		
C.BW.96BW1626	-----T-----		
C.BW.96BW17A09	-----E-----		
C.ETETH2220	-----E-----		
C.IN.93IN101	-----E-----		
C.IN.93IN904	-----G-----		
C.IN.93IN905	-----E-----		
C.IN.93IN999	-----E-----		
C.IN.94IN11246	-----E-----		
C.IN.95IN21068	-----K-----		
CONSENSUS-D	IEeLRHLL		
D.CD.84ZR085	--K-E--		
D.CD.ELI	--K-E--		
D.CD.NDK	-----E-----		
D.CD.Z2Z6	-----E-----		
D.UG.94UG1141	-----G-----		
F1.BE.VI850	-----E-----		
F1.BR.93BR020-1	-----E-----		
F1.FI.FIN9363	-----E-----		
F1.FR.MP411	-----E-----		
F2.CM.MP255	-----E-----		
F2.CM.MP257	-----E-----		
F2.KU.BE.VII126	-----E-----		
G.BE.DRCBL	-----E-----		
G.FL.HH8793-1-1	-K--E--		
G.NG.92NG083	-----E-----		
G.SE.SE6165	-----E-----		
H.BE.VI991	-----A-----		
H.BE.VI997	-----A-----		
H.CF.90CF056	-----A-----		
J.SE.SE7022	-K--E--		
J.SE.SE7887	-K--E--		
K.CDEQTB11C	-----E-----		
K.CM.MP555	-----E-----		
MO.CM.97CAMP645MO	-----EY--		
N.CM.YBF106	V-----G-----		
N.CM.YBF30	V-D--D--		
O.CM.ANT70	--L--E--Y		
O.CM.MVP5180	V-L--E--Y		
O.SN.99SE-MP1299	V-L--E--Y		
O.SN.99SE-MP1300	V-L--E--Y		
U.CD.-.83CD0031	-----A-----		
CONSENSUS-	iEeLRaHLL		
U155	-----A-----		
01_AE.CF90CF11697	-----D-----		
01_AE.CF90CF402	V-D--A--		
01_AE.CF90CF4071	-----A-----		
01_AE.TH.93TH057	-----A-----		
01_AE.TH.93TH065	-----A-----		
01_AE.TH.93TH253	-----A-----		
01_AE.TH.93TH902	-----A-----		
01_AE.TH.94TH702	-----A-----		
01_AE.TH.95TNIH047	-----A-----		
01_AE.TH.CM240	-----A-----		
01_AE.TH.TH022	-----A-----		
CONSENSUS-02_AG	IEELReHLL		
02_AG.CM.97CMMMP807	-----E-----		
02_AG.FR.DJ263	-----E-----		
02_AG.FR.DJ264	-----E-----		
02_AG.GH.G829	-----E-----		
02_AG.NG.IBNG	-----G-----		
02_AG.SE.SE7812	-----E-----		
02_AG.SN.98SEMP1211	-----E-----		
02_AG.SN.98SEMP1213	-----E-----		
03_AB.RU.KAL153-2	-----E-----		
03_AB.RU.RU98001	-----D-----		
04_cpx.CY.94CY032-3	-----E-----		
04_cpx.GR.97PVCH	-----E-----		
04_cpx.GR.97PVMY	-----E-----		
05_DF.BE.VII1310	-K--E--		
05_DF.BE.VI961	-----E-----		

HIV CTL Epitope Alignments

B.GB.GB8	----	FS-----	F2KU.BE.V11126	----	FF-----E-	06_cpx.ML.95ML127	--K--F-----
B.GB.MANC	--K--F-----	G.BE.DRCBL	-----F-----	G.BE.DRCBL	-----F-----	06_cpx.ML.95ML84	--K--F-----
B.KR.WK	-----F-----	G.FL.HH8793-1-1	-----F-----	G.FL.HH8793-1-1	-----F-----	06_cpx.SN.97SE1078	--K--F--A----
B.NL.320A21	-----F-----	G.NG.92NG083	-K-----	G.NG.92NG083	-K-----	10_CD.-BFL06131	--K--F-----
B.UNK.NL43E9	-----FI-----	G.SE.SE6165	-K-----	G.SE.SE6165	-K-----	10_CD.-BFL07132	--K--F-----
B.US.AD8	-----F-----	H.BE.V1991	-----F-----	H.BE.V1991	-----F-----	10_CD.-BFL11033	--K--F-----
B.US.BC	-----F-----	H.BE.V1997	-----F-----	H.BE.V1997	-----F-----	11_cpx.CM.97CM-MP818	-----F-----
B.US.DH123	-----F--Q-----	H.CF.90CF056	-K-----	H.CF.90CF056	-K-----	11_cpx.FR.99FR-MP1298	--K--F-----
B.US.JRCSF	--K--F-----	J.SE.SE7022	-K--FY-----	J.SE.SE7022	-K--FY-----	11_cpx.FR.99FR-MP1307	-WK--FY-----
B.US.JRFL	-----F-----	J.SE.SE7887	-K-----	J.SE.SE7887	-K-----	11_cpx.GR.GRI7	--K--F-----
B.US.MNCG	-----F-----	K.CDE.QTB11C	-----F-----	K.CDE.QTB11C	-----F-----	CONSENSUS - CPZ	LI tWGf tTPDkK
B.US.NY5CG	-----F-----	K.CM.MP535	-K-----	K.CM.MP535	-K-----	CPZ.CD.CPZANT	-QV---E-----
B.US.P896	--K--F-----	MO.CM.97CAMP645MO	-K--F-----	MO.CM.97CAMP645MO	-K--F-----	CPZ.CM.CAM3	--T--F-----
B.US.PT2-9-95C	-K--FY-----	N.CM.YBF106	-K-----	N.CM.YBF106	-K-----	CPZ.CM.CAM5	--T--F-----
B.US.PT4-5-97	-K--F-----	N.CM.YBF30	-K-----	N.CM.YBF30	-K-----	CPZ.GA.CPZGAB	--K--F-----
B.US.RF	-K--F-----	O.CM.ANT70	-YQ--F-----	O.CM.ANT70	-YQ--F-----	CPZ.US.CPZUS	--T--F-----
B.US.SF2	-----F-----	O.CM.MVP5180	-YQ--F-----	O.CM.MVP5180	-YQ--F-----		
B.US.WEAU160	-----F-----	O.SN.99SE-MP1299	-YQ--F-----	O.SN.99SE-MP1299	-YQ--F-----		
B.US.WR27	-----F-----	O.SN.99SE-MP1300	-YQ--F-----	O.SN.99SE-MP1300	-YQ--F-----		
B.US.YU2	-----F-----	U.CD.-.83CD0031	-----F-----	U.CD.-.83CD0031	-----F-----		
BF1.BR.93BR029-4	-----F-----						
CONSENSUS -C	LLkWGf tTPDkK	CONSENSUS -	LLSWGf tTPdKk	CONSENSUS -02_AG	LL?WGf tTPDkK		
C.BR.92BR025	--K--F-----	U155	-----F-----	02_AG.CM.97CMMP807	-----F-----		
C.BW.96BW01B03	--K--F-----	01_AE.CF.90CF11697	-K--F-----	02_AG.FR.DJ263	-K--F-----		
C.BW.96BW0402	--K--F-----	01_AE.CF.90CF402	-S--F-----	02_AG.FR.DJ264	-K--F-----		
C.BW.96BW0502	--K--Y-----	01_AE.CF.90CF4071	-S--F-----	02_AG.GH.G829	-----F-----		
C.BW.96BW1104	-K--F-----	01_AE.TH.93TH057	-S--F-----	02_AG.NG.IBNG	-K--F-----		
C.BW.96BW1210	-----F-----	01_AE.TH.93TH065	-S--F-----	02_AG.SE.SE7812	-----F--E-----		
C.BW.96BW15B03	-K--F-----	01_AE.TH.93TH253	-S--F-----	02_AG.SN.98SEMP1211	-K--F-----		
C.BW.96BW1626	-K--F-----	01_AE.TH.93TH902	-S--F-----	02_AG.SN.98SEMP1213	-----F-----		
C.BW.96BW17A09	-K--F-----	01_AE.TH.94TH702	-S--F-----	03_AB.RU.KAL153-2	-----F-----		
C.ETETH2220	-K--F-----	01_AE.TH.95TNIH047	-S--F-----	04_cpx.CY.94CY032-3	-----F-----		
C.IN.93IN101	-K--F-----	01_AE.TH.CM240	-S--F-----	04_cpx.GR.97PVCH	-----FY-----		
C.IN.93IN904	-K--F-----	01_AE.TH.TH022	-S--F--G-----	04_cpx.GR.97PVMY	-----FF--Q-----		
C.IN.93IN905	-----F-----			05_DF.BE.V11310	-A--F-----		
C.IN.93IN999	-----F-----			06_cpx.AU.BFP90	--K--F-----		
C.IN.94IN11246	-K--F-----						
C.IN.95IN21068	-----F-----						
CONSENSUS -D	LL?WGf tTPDkK						
D.CD.84ZR085	-----F--R-----						
D.CD.ELI	-----F-----						
D.CD.NDK	-----F-----						
D.CD.ZZ6	-----F-----						
D.UG.94UG1141	-K--F-----						
F1.BE.V1850	-----F-----						
F1.BR.93BR020-1	-K--F-----						
F1.FI.FIN9363	--K--F-----						
F1.FR.MP411	-K--F-----						
F2.CM.MP255	-K--F-----						
F2.CM.MP257	-----F-----						

RT Epitopes 51-54

Epitope #	HLA			
51	PIVLPEKDSW B*5701	B.FR.HXB2	-----	FI.FI.FIN9363
52	IYLVPEKDSW B*5701	B.GA.OYI	--M-----	FI.FR.MP411
53	IYLVPEKDSW B*5701, B*5801	B.GB.CAMI	--M-----	F2.CM.MP255
54	IYLVPEKDSW B57	B.GB.GB8	-----	F2.CM.MP257
B.FR.HXB2	PIVLPEKDSW	B.GB.MANC	--T-----	F2.KU.BE.VIII.26
		B.KR.WK	-----	G.BE.DRCBL
		B.NL..3202A21	-----	G.FL.HH8793-1-1
		B.TW.TWCYS	-----	G.NG.92NG083
		B.UNK.NL43E9	-----	G.SE.SE6165
		B.US.AD8	-----	H.BE.V1991
		B.US.BC	-----	H.BE.V1997
		B.US.DHI23	-----	H.CF.90CF056
		B.US.JRCSF	-----	J.SE.SE7022
		B.US.JRFL	-----	J.SE.SE7887
		B.US.MNCG	-----	K.CD.EQTB11C
		B.US.NY5CG	-----	K.CM.MP535
		B.US.P896	-----	MO.CM.97CAMF645MO
		B.US.PT2-9-95C	-----	N.CM.YBF106
		B.US.PT4-5-97	-----	N.CM.YBF30
		B.US.RF	-----	O.CM.ANT70
		B.US.SF2	--M-----	O.CM.MVP5180
		B.US.WEAU160	--K---E--	O.SN.99SE-MP1299
		B.US.WR27	--E-----	O.SN.99SE-MP1300
		B.US.YU2	-----	U.CD.-.83CD0031
		BF1.BR.93BR029-4	-----	
			-----	CONSENSUS -
			-----	PIeLPeKdsw
			-----	U155
			-----	01_AE.CF.90CF11697
			-----	01_AE.CF.90CF402
			-----	01_AE.CF.90CF4071
			-----	01_AE.TH.93TH057
			-----	01_AE.TH.93TH065
			-----	01_AE.TH.93TH253
			-----	01_AE.TH.93TH902
			-----	01_AE.TH.94TH702
			-----	01_AE.TH.95TNIH047
			-----	01_AE.TH.CM240
			-----	01_AE.TH.TH022
			-----	CONSENSUS-02_AG
			-----	PIqLPeKdsw
			-----	02_AG.CM.97CMMP807
			-----	02_AG.FR.DJ263
			-----	02_AG.FR.DJ264
			-----	02_AG.GH.G829
			-----	02_AG.NG.IBNG
			-----	02_AG.SE.SE7812
			-----	02_AG.SN.98SEMP1211
			-----	02_AG.SN.98SEMP1213
			-----	03_AB.RU.KAL153-2
			-----	03_AB.RU.RU98001
			-----	04_cpx.CY.94CY032-3
			-----	04_cpx.GR.97PVCH

			-----	CONSENSUS-C
			-----	PIqLPeKdsw
			-----	C.BR.92BR025
			-----	C.BW.96BW01B03
			-----	C.BW.96BW0402
			-----	C.BW.96BW0502
			-----	C.BW.96BW1104
			-----	C.BW.96BW1210
			-----	C.BW.96BW15B03
			-----	C.BW.96BW1626
			-----	C.BW.96BW17A09
			-----	C.ETETH2220
			-----	C.IN.93IN101
			-----	C.IN.93IN904
			-----	C.IN.93IN905
			-----	C.IN.93IN999
			-----	C.IN.94IN11246
			-----	C.IN.95IN21068

			-----	CONSENSUS-D
			-----	SIKLPEKESW
			-----	D.CD.84ZR085
			-----	D.CD.ELI
			-----	D.CD.NDK
			-----	D.CD.ZZZ6
			-----	D.UG.94UG1141
			-----	F1.BE.VI850
			-----	F1.BR.93BR020-1

			-----	CONSENSUS-A
			-----	PIeLPeKesW
			-----	A.BY.97BL006
			-----	A.KE.Q23
			-----	A.SE.SE6594
			-----	A.SE.SE7253
			-----	A.SE.SE7535
			-----	A.SE.SE8538
			-----	A.SE.SE8891
			-----	A.SE.UGSE8131
			-----	A.UG.92UG037
			-----	A.UG.U455
			-----	A2.CD.97CDKFE4
			-----	A2.CY.94CY017-41
			-----	A2C.ZM.ZAM184
			-----	A2D.-.97KR004
			-----	A2G.CD.97CDKP58
			-----	AC.ETE3099G
			-----	AC.IN.21301
			-----	AC.RW.92RW009
			-----	AC.SE.SE9488
			-----	ACD.SE.SE8603
			-----	ACG.BE.VI1035
			-----	AD.SE.SE6954
			-----	AD.SE.SE7108
			-----	ADHK.NO.97NOGIL3
			-----	ADK.CD.MAL
			-----	AG.BE.VI1197
			-----	AG.NG.92NG003
			-----	AGHU.GA.VI354
			-----	AGU.CD.Z321
			-----	AJ.BW.BW2117

			-----	CONSENSUS-B
			-----	PIVLPEKDSW
			-----	B.AU.MBC18
			-----	B.AU.MBC200
			-----	B.AU.MBC925
			-----	B.AU.MBCC54
			-----	B.AU.MBCC98
			-----	B.AU.MBCD36
			-----	B.AU.VH
			-----	B.CN.RL42
			-----	B.DE.D31
			-----	B.DE.HAN

HIV CTL Epitope Alignments

F1.FR.MP411	V-----	05_DFBE.VII1310	V-----		
F2.CM.MP255	V--A----	05_DFBE.VI961	V-----		
F2.CM.MP257	V--A----	06_cpx.AU.BFP90	V--A----		
F2KU.BE.VII1126	V--A----	06_cpx.ML.95ML127	V--A----		
G.BE.DRCBL	VSM-A--M	06_cpx.ML.95ML84	V--A----		
G.FI.HH8793-1-1	V--A----	06_cpx.SN.97SE1078	V--A----		
G.NG.92NG083	V--A--M	10_CD.-.BFL06131	V-----		
G.SE.SE6165	VS--A--M	10_CD.-.BFL07132	V-----		
H.BE.VI991	V--K----	10_CD.-.BFL11033	V-----		
H.BE.VI997	V--K----	11_cpx.CM.97CM-MP818	V--A----		
H.CF.90CF056	----K----	11_cpx.FR.99FR-MP1298	V--A----		
J.SE.SE7022	V--R----	11_cpx.FR.99FR-MP1307	V--A----		
J.SE.SE7887	V--R----	11_cpx.GR.GR17	V--A----		
K.CD.EQTB11C	V--A----				
K.CM.MP535	V--A----	CONSENSUS - CPZ	V?mTqEAEm		
MO.CM.97CAMP645MO	VT-----	CPZ.CD.CPZANT	VQM-R----		
N.CM.YBF106	VTF-Q----	CPZ.CM.CAM3	VTM-Q----M		
N.CM.YBF30	VNF-----	CPZ.CM.CAM5	VAM-Q----M		
O.CM.ANT70	V--SR----	CPZ.GA.CPZGAB	V--P-----		
O.CM.MVP5180	V--SK----	CPZ.US.CPZUS	VNF-H----M		
O.SN.99SE-MP1299	V--SK----				
O.SN.99SE-MP1300	V--SK----				
U.CD.-.83CD0031	V-M-K----				
CONSENSUS -	VpLTeEAEL				
UI55	V--R----				
01_AE.CF.90CF11697	V-----				
01_AE.CF.90CF402	VT-----				
01_AE.CF.90CF4071	V-----				
01_AE.TH.93TH057	V-----				
01_AE.TH.93TH065	V-----				
01_AE.TH.93TH253	V-----				
01_AE.TH.93TH902	V-----				
01_AE.TH.94TH702	V-----				
01_AE.TH.95TNIH047	V-----				
01_AE.TH.CM240	V-----				
01_AE.TH.TH022	V-----				
CONSENSUS - 02_AG	VtLTeEAEL				
02_AG.CM.97CMMP807	VT-----				
02_AG.FR.DJ263	V-----				
02_AG.FR.DJ264	V-----				
02_AG.GH.G829	VT-----				
02_AG.NG.IBNG	VA-----				
02_AG.SE.SE7812	VT-----				
02_AG.SN.98SEMP1211	V-----				
02_AG.SN.98SEMP1213	VT-----				
03_AB.RU.KAL153-2	----A----				
03_AB.RU.RU98001	----A----				
04_cpx.CY.94CY032-3	V--T----				
04_cpx.GR.97PVCH	V--T----				
04_cpx.GR.97PVMY	V--T----				

RT Epitope 64

Epitope #		HLA
64	EILKEPVGHV	A*0201
B.FR.HXB2	EILKEPVGHV	
CONSENSUS - A	EILKdPVGv	
A.YI.97BL006	-----x----	
A.KE.Q23	-----D----	
A.SE.SE6594	-----D----	
A.SE.SE7253	-----D----	
A.SE.SE7535	-----D----	
A.SE.SE8538	-----A----	
A.SE.SE8891	-----D----	
A.SE.UGSE8131	-----D----	
A.UG.92UG037	-----D----	
A.UG.U455	-----D----	
A2.CD.97CDKFE4	-----N----	
A2.CY.94CY017-41	-----T----	
A2C.ZM.ZAM184	-----D----	
A2D.-.97KR004	-----D----	
A2G.CD.97CDKPF58	-----A----	
AC.ETE3099G	-----D--W-	
AC.IN.21301	-----D----	
AC.RW.92RW009	-----D----	
AC.SE.SE9488	---RD----	
ACD.SE.SE8603	-----D----	
ACG.BE.VI1035	-----D----	
AD.SE.SE6954	-----D----	
AD.SE.SE7108	-----D----	
ADHK.NO.97N OGIL3	-----D----	
ADK.CD.MAL	-----D----	
AG.BE.VII1197	-----D----	
AG.NG.92NG003	-----D----	
AGHU.GA.VI354	-----D----	
AGU.CD.Z321	-----D----	
AJ.BW.BW2117	-----D----	
CONSENSUS - B	EILkepVHgV	
B.AU.MBC18	---R----	
B.AU.MBC200	-----D----	
B.AU.MBC925	-----D----	
B.AU.MBCC54	-----D----	
B.AU.MBCC98	-----D----	
B.AU.MBCD36	---RK---E-	
B.AU.VH	-----D----	
B.CN.RL42	-----S----	
B.DE.D31	-----D----	
B.DE.HAN	-----D----	
B.FR.HXB2	-----D----	
B.GA.OYI	-----D----	
B.GB.CAM1	-----D----	

HIV CTL Epitope Alignments

F2.CM.MP255	-----Y-----	05_DF.BE.VI961	-----
F2.CM.MP257	-----H-----	06_cpx.AU.BFP90	-----H-----
F2KU.BE.VI1126	-----Y-----	06_cpx.ML.95ML127	-----H-----
G.BE.DRCBL	-V-----Y-----	06_cpx.ML.95ML84	-----H-----
G.FI.HH8793-1-1	-----Y-----	06_cpx.SN.97SE1078	---DTH---
G.NG.92NG083	-----Y-----	10_CD.-.BFL06131	-----H-----
G.SE.SE6165	-----Y-----	10_CD.-.BFL07132	-----H-----
H.BE.VI991	-----	10_CD.-.BFL11033	-----H-----
H.BE.VI997	-----	11_cpx.CM.97CM-MP818	-----
H.CF.90CF056	-----	11_cpx.FR.99FR-MP1298	-----
J.SE.SE7022	-----	11_cpx.FR.99FR-MP1307	---F---
J.SE.SE7887	-----	11_cpx.GR.GR17	-----
K.CD.EQTBI1C	-----Y-----	CONSENSUS -CPZ	QIfQeqlKnlKtG
K.CM.MP535	-----H-----	CPZ.CD.CPZANT	---NEG-L--A-
MO.CM.97CAMP645MO	-----	CPZ.CM.CAM3	---F-QH---
N.CM.YBF106	-----Y-----	CPZ.CM.CAM5	---F-QH---
O.CM.ANT70	---LH---	CPZ.GA.CPZGAB	---F--H---
O.CM.MVP5180	---EH---	CPZ.US.CPZUS	---F--RH---
O.SN.99SE-MP1299	-V--DEH---		
O.SN.99SE-MP1300	---DEH---		
U.CD.-.83CD0031	---DEH---		
CONSENSUS -	QIYQEPFFKnlKtG		
U155	-----		
01_AE.CF.90CF11697	-----		
01_AE.CF.90CF402	-----		
01_AE.CF.90CF4071	-----		
01_AE.TH.93TH057	-----		
01_AE.TH.93TH065	-----		
01_AE.TH.93TH253	-----		
01_AE.TH.93TH902	-----		
01_AE.TH.94TH702	-----		
01_AE.TH.95TNIH047	-----		
01_AE.TH.CM240	-----		
01_AE.TH.TH022	-----		
CONSENSUS -02_AG	QIYQEPFFKnlKtG		
02_AG.CM.97CMMP807	-----		
02_AG.FR.DJ263	-----		
02_AG.FR.DJ264	-----		
02_AG.GH.G829	-----		
02_AG.NG.IBNG	-----		
02_AG.SE.SE7812	-----		
02_AG.SN.98SEMP1211	-----		
02_AG.SN.98SEMP1213	-----		
03_AB.RU.KAL153-2	-----		
03_AB.RU.RU98001	-----		
04_cpx.CY.94CY032-3	-----H-----		
04_cpx.GR.97PVCH	-----Y-----		
04_cpx.GR.97PVMY	-----Y-----		
05_DF.BE.VI1310	-----		

RT Epitopes 73, 74

Epitope #	HLA
73	DVKQLTEVV A28, A*6802
74	DVKQLTEVV B70
B.FR.HXB2	DVKQLTEAV
CONSENSUS-A	dVfQLaeVv
A.BY.97BL006	x-----AV-
A.KE.Q23	--R--A-V-
A.SE.SE6594	-----A-M-
A.SE.SE7253	--R--A-V-
A.SE.SE7535	-----A-V-
A.SE.SE8538	-----A-V-
A.SE.SE8891	--R--V-V-
A.SE.UGSE8131	--R--A-V-
A.UG.92UG037	-----A-V-
A.UG.U455	-----V-
A2.CD.97CDKFE4	-----
A2.CY.94CY017-41	-I-----
A2C.ZM.ZAM184	-----
A2D.-.97KR004	-----
A2G.CD.97CDKPF58	-----V-
AC.ETE3099G	x-----AV-
AC.IN.21301	-----T-
AC.RW.92RW009	-----
AC.SE.SE9488	--R--A-V-
ACD.SE.SE8603	-----A-V-
ACG.BE.VI1035	-----
AD.SE.SE6954	-I-----A-
AD.SE.SE7108	-I-----A-
ADHK.NO.97NOGIL3	-----
ADK.CD.MAL	-----
AG.BE.VI1197	-----V-V-
AG.NG.92NG003	-----
AGHU.GA.VI354	-----
AGU.CD.Z321	--R--A-V-
AJ.BW.BW2117	-----A-V-
CONSENSUS-B	DvkQLtEaV
B.AU.MBC18	-----
B.AU.MBC200	-----
B.AU.MBC925	-----
B.AU.MBCC54	-----
B.AU.MBCC98	--R-----
B.AU.MBCD36	-----
B.AU.VH	-----
B.CN.RL42	-----
B.DE.D31	-----
B.DE.HAN	-----
B.FR.HXB2	-I-----
B.GA.OYI	-----

HIV CTL Epitope Alignments

F2KU.BE.VII1126	-----	06_cpx.ML.95ML127	-----	HLA
G.BE.DRCBL	-K-----	06_cpx.ML.95ML84	-----	B44
G.FI.HH8793-1-1	-R-----	06_cpx.SN.97SE1078	-H-----	
G.NG.92NG083	-R-----	10_CD.-BFL06131	-----I-	
G.SE.SE6165	-R-----	10_CD.-BFL07132	-----	
H.BE.V1991	-----	10_CD.-BFL11033	-D-----	
H.BE.V1997	-----	11_cpx.CM.97CM-MP818	-R-----	
H.CF.90CF056	-----	11_cpx.FR.99FR-MP1298	-----	
J.SE.SE7022	-----	11_cpx.FR.99FR-MP1307	-R-----	
J.SE.SE7887	-R-----	11_cpx.GR.GR17	-----	
K.CD.EQTBI1C	-----G-			
K.CM.MP535	-----	CONSENSUS-CPZ		
MO.CM.97CAMP645MO	-----A-	CPZ.CD.CPZANT	pvqkEYwetW	
N.CM.YBF106	-V---V-	CPZ.CM.CAM3	--TR---DA-	
N.CM.YBF30	-V---V--A-	CPZ.CM.CAM5	-V---V-	
O.CM.ANT70	-VTR-----	CPZ.GA.CPZGAB	-V---S--A-	
O.CM.MVP5180	-VTR-----	CPZ.US.CPZUS	LV---V----	
O.SN.99SE-MP1299	-TR-----			
O.SN.99SE-MP1300	-TR-----			
U.CD.-.83CD0031	-----S-			
CONSENSUS -				
U155	PIQR^rETW^eETW			
01_AE.CF.90CF11697	-----			
01_AE.CF.90CF402	-R-----			
01_AE.CF.90CF4071	-R-----			
01_AE.TH.93TH057	-R-----			
01_AE.TH.93TH065	-R-----			
01_AE.TH.93TH253	-R-----			
01_AE.TH.93TH902	-R-----			
01_AE.TH.94TH702	-R-----			
01_AE.TH.95TNIH047	-----			
01_AE.TH.CM240	-R-----			
01_AE.TH.TH022	-----			
CONSENSUS-02_AG	PIQR^rETW^eaW			
02_AG.CM.97CMMP807	-----A-			
02_AG.FR.DJ263	-R-----			
02_AG.FR.DJ264	-R-----			
02_AG.GH.G829	-R-----			
02_AG.NG.IBNG	-R-----			
02_AG.SE.SE7812	-R-----			
02_AG.SN.98SEMP1211	-R-----			
02_AG.SN.98SEMP1213	-R-----			
03_AB.RU.KAL153-2	-----			
03_AB.RU.RU98001	-----			
04_cpx.CY.94CY032-3	-----D-			
04_cpx.GR.97PVCH	-----D-			
04_cpx.GR.97PVMY	-----D-			
05_DF.BE.VII1310	-----I-			
05_DF.BE.VI961	-----			
06_cpx.AU.BFP90	-----			

RT Epitope 78

Epitope #	TW ^e ETW ^e W ^e TE ^e Y ^e W	HLA
78	TW ^e ETW ^e W ^e TE ^e Y ^e W	B44
B.FR.HXB2		
CONSENSUS -A	TwetW^emdy^eW	
A.KE.Q23	-D---MD--	
A.SE.SE6594	-----MD--	
A.SE.SE7253	-----MD--	
A.SE.SE7535	-----ID--	
A.SE.SE8538	-----M--	
A.SE.SE8891	-----MD--	
A.SE.UGSE8131	-D---MD--	
A.UG.92UG037	-----MD--	
A.UG.U455	-A--M--	
A2.CD.97CDKFE4	-----	
A2.CY.94CY017-41	-----A--	
A2C.ZM.ZAM184	-----D-	
A2D.-.97KR004	-----V-	
A2G.CD.97CDKP58	-----	
AC.ETE3099G	-----	
AC.IN.21301	-----D-	
AC.RW.92RW009	-----D-	
AC.SE.SE9488	-----MD--	
ACD.SE.SE8603	-----MD--	
ACG.BE.VII1035	-A--M--	
AD.SE.SE6954	-----	
AD.SE.SE7108	-----	
ADHK.NO.97NOGIL3	-----	
ADK.CD.MAL	-A-----	
AG.BE.VII197	-A--R--	
AG.NG.92NG003	-V-----	
AGHU.GA.VI354	-----DH-	
AGU.CD.Z321	-----AD--	
AJ.BW.BW2117	-----	
CONSENSUS -B	TWeaw^ete^eY^eW	
B.AU.MBC18	-DA-----	
B.AU.MBC200	-----	
B.AU.MBC925	-----	
B.AU.MBCC54	-A-----	
B.AU.MBCC98	-A-----	
B.AU.MBCD36	-A--K--	
B.AU.VH	-A--M--	
B.CN.RL42	-A-----	
B.DE.D31	-A-----	
B.DE.HAN	-A-----	
B.FR.HXB2	-A-----	
B.GA.OYI	-A-----	
B.GB.CAM1	-DA--ID--	
B.GB.GB8	---A--M---	

HIV CTL Epitope Alignments

B.GB.MA1NC	--DA-----	F2KU.BE.VII126	-----	06_cpx.ML.95ML127	-----
B.KR.WK	--A-----	G.BE.DRCBL	--V-----	06_cpx.ML.95ML84	-----
B.NL.3202A21	--A-----	G.FLHH8793-1-1	--V-----	06_cpx.SN.97SE1078	-----
B.TW.TWCYS	--A-----	G.NG.92NG083	--V-----	10_CD.-BFL06131	--I--D--
B.UNK.NL43E9	--A-----	G.SE.SE6165	--I--D--	10_CD.-BFL07132	-----
B.US.AD8	--A-M--	H.BE.V1991	-----H-	10_CD.-BFL11033	-----D-
B.US.BC	-----	H.BE.V1997	-----H-	11_cpx.CM.97CM-MP818	-----D-
B.US.DH123	-----	H.CF.90CF056	-----D--	11_cpx.FR.99FR-MP1298	-----D-
B.US.JRCSF	-----	J.SE.SE7022	-----D--	11_cpx.FR.99FR-MP1307	-----D-
B.US.JRFL	-----	J.SE.SE7887	-----D--	11_cpx.GR.GR17	-----D-
B.US.MNCG	-----T	K.CD.EQTB11C	--G-----		
B.US.NY5CG	--A-----	K.CM.MP535	-----	CONSENSUS-CPZ	vwetWwseYw
B.US.P896	--A--D--	MO.CM.97CAM645MO	--A--L--	CPZ.CD.CPZANT	--DA--SD--
B.US.PT2-9-95C	--DA--A--	N.CM.YBF106	V-----H-	CPZ.CM.CAM3	V-----S--
B.US.PT4-5-97	-----	N.CM.YBF30	V--A--DH-	CPZ.CM.CAM5	V-----S--
B.US.RF	--A-----	O.CM.ANT70	-----AD--	CPZ.GA.CPZGAB	S--A--A--
B.US.SF2	--A-M--	O.CM.MVP5180	-----A--	CPZ.US.CPZUS	V-----S--
B.US.WEAU160	-----	O.SN.99SE-MP1299	-----AD--		
B.US.WR27	--SR-----	O.SN.99SE-MP1300	-----AD--		
B.US.YU2	-----	U.CD.-.83CD0031	--S--D--		
BF1.BR.93BR029-4	--A--I--		-----		
CONSENSUS-C	twetWtdYw	CONSENSUS-	TWETWmEYw		
C.BR.92BR025	--A--D--	U155	-----W-		
C.BW.96BW01B03	-----D-	01_AE.CF.90CF11697	-----A-		
C.BW.96BW0402	-----D-	01_AE.CF.90CF402	-----M--		
C.BW.96BW0502	-----D-	01_AE.CF.90CF4071	-----M--		
C.BW.96BW1104	A--A--D--	01_AE.TH.93TH057	-----M--		
C.BW.96BW1210	--A--D--	01_AE.TH.93TH065	-----M--		
C.BW.96BW15B03	-----D-	01_AE.TH.93TH253	-----M--		
C.BW.96BW1626	-----D-	01_AE.TH.93TH902	-----M--		
C.ET.ETH220	--D-----	01_AE.TH.94TH702	-----M--		
C.IN.93IN101	--A--D--	01_AE.TH.95TNIH047	-----M--		
C.IN.93IN904	-----D-	01_AE.TH.CM240	-----M--		
C.IN.93IN905	-----D-	01_AE.TH.TH022	-----M--		
C.IN.93IN999	--A--D--		-----		
C.IN.94IN11246	-----D-	CONSENSUS-02_AG	TWEaWMEYw		
C.IN.95IN21068	-----D-	02_AG.CM.97CMP807	--A--M--		
CONSENSUS-D	TWETWIEYw	02_AG.FR.DJ263	--A--M--		
D.CD.84ZR085	-----ID--	02_AG.FR.DJ264	--A--M--		
D.CD.ELI	-----A-	02_AG.GH.G829	--A--M--		
D.CD.NDK	-----I--	02_AG.NG.IBNG	-----M--		
D.CD.ZZZ6	-----V--	02_AG.SE.SE7812	--A--M--		
D.UG.94UG1141	-----D--	02_AG.SN.98SEMP1211	--A--M--		
F1.BE.VI850	--D-----D-	02_AG.SN.98SEMP1213	-----M--		
F1.BR.93BR020-1	--D-----	03_AB.RU.KAL153-2	-----A--		
F1.FLFIN9363	--D-----	04_AB.RU.RU98001	-----A--		
F1.FR.MP411	--A--D--	04_cpx.CY.94CY032-3	--D-----		
F2.CM.MP255	--I-----	04_cpx.GR.97PVCH	--D-----		
F2.CM.MP257	--I-----	04_cpx.GR.97PVMY	--D--M--		
		05_DF.BE.VII1310	-----I--		
		05_DF.BE.VI961	-----		
		06_cpx.AU.BFP90	-----		

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Epitope #	HLA	PLVKLWYQL	PLVKLWYQL	PLVKLWYQL	PLVKLWYQL
B.FR.HXB2	A2	PLVKLWYQL	PLVKLWYQL	PLVKLWYQL	PLVKLWYQL
CONSENSUS--A		PLVKLWYQL	PLVKLWYQL	PLVKLWYQL	PLVKLWYQL
A.BY.97BL006		-----	-----	-----	-----
A.KE.Q23		-----	-----	-----	-----
A.SE.SE6594		--LW--L-	-----	-----	-----
A.SE.SE7253		-----	-----	-----	-----
A.SE.SE7535		-----	-----	-----	-----
A.SE.SE8538		-----	-----	-----	-----
A.SE.SE8891		-----	-----	-----	-----
A.SE.UGSE8131		-----	-----	-----	-----
A.UG.92UG037		-----	-----	-----	-----
A.UG.U455		-----	-----	-----	-----
A2.CD.97CDKFE4		-----	-----	-----	-----
A2.CY.94CY017-41		-----	-----	-----	-----
A2C.ZM.ZAM184		-----	-----	-----	-----
A2D.-.97KR004		-----	-----	-----	-----
A2G.CD.97CDKP58		-----R-	-----	-----	-----
AC.ETE3099G		-----	-----	-----	-----
AC.IN.21301		-----	-----	-----	-----
AC.RW.92RW009		-----	-----	-----	-----
AC.SE.SE9488		-----	-----	-----	-----
ACD.SE.SE8603		-----	-----	-----	-----
ACG.BE.VI1035		-----	-----	-----	-----
AD.SE.SE6954		-----	-----	-----	-----
AD.SE.SE7108		-----	-----	-----	-----
ADHK.NO.97NNOGIL3		-----	-----	-----	-----
ADK.CD.MAL		-----	-----	-----	-----
AG.BE.VII197		-----	-----	-----	-----
AG.NG.92NG003		-----R-	-----	-----	-----
AGHU.GA.VI354		H-	-----	-----	-----
AGU.CD.Z321		L-	-----	-----	-----
AJ.BW.BW2117		-----	-----	-----	-----
CONSENSUS--B		PLVKLWYQL	PLVKLWYQL	PLVKLWYQL	PLVKLWYQL
B.AU.MBC18		-----	-----	-----	-----
B.AU.MBC200		-----	-----	-----	-----
B.AU.MBC925		-----	-----	-----	-----
B.AU.MBCC54		-----	-----	-----	-----
B.AU.MBCC98		-----	-----	-----	-----
B.AU.MBCD36		-----	-----	-----	-----
B.AU.VH		-----	-----	-----	-----
B.CN.RL42		-----	-----	-----	-----
B.DE.D31		-----	-----	-----	-----
B.DE.HAN		-----	-----	-----	-----
B.FR.HXB2		-----	-----	-----	-----
B.GA.OYI		-----	-----	-----	-----
B.GB.CAMI		-----	-----	-----	-----
B.GB.GB8		-----	-----	-----	-----
B.GB.MANC		-----	-----	-----	-----
B.KR.WK		-----	-----	-----	-----
B.NL.3202A21		-----	-----	-----	-----
B.TW.TWCYS		-----	-----	-----	-----
B.UNK.NL43E9		-----	-----	-----	-----
B.US.AD8		-----	-----	-----	-----
B.US.BC		-----	-----	-----	-----
B.US.DH123		-----	-----	-----	-----
B.US.JRCSF		-----	-----	-----	-----
B.US.JRFL		-----	-----	-----	-----
B.US.MNCG		-----	-----	-----	-----
B.US.NY5CG		-----	-----	-----	-----
B.US.P896		-----	-----	-----	-----
B.US.PT2-9-95C		-----	-----	-----	-----
B.US.PT4-5-97		-----	-----	-----	-----
B.US.RF		-----	-----	-----	-----
B.US.SF2		-----	-----	-----	-----
B.US.WEAU160		-----	-----	-----	-----
B.US.WR27		-----	-----	-----	-----
B.US.YU2		-----	-----	-----	-----
BF1.BR.93BR029-4		-----	-----	-----	-----
CONSENSUS--C		PLVKLWYQL	PLVKLWYQL	PLVKLWYQL	PLVKLWYQL
C.BR.92BR025		-----	-----	-----	-----
C.BW.96BW01B03		-----	-----	-----	-----
C.BW.96BW0402		-----	-----	-----	-----
C.BW.96BW0502		-----	-----	-----	-----
C.BW.96BW1104		-----	-----	-----	-----
C.BW.96BW1210		-----	-----	-----	-----
C.BW.96BW15B03		-----	-----	-----	-----
C.BW.96BW1626		-----	-----	-----	-----
C.BW.96BW17A09		-----	-----	-----	-----
C.ETE2220		-----	-----	-----	-----
C.IN.93IN101		-----	-----	-----	-----
C.IN.93IN904		-----	-----	-----	-----
C.IN.93IN905		-----	-----	-----	-----
C.IN.93IN999		-----R-	-----	-----	-----
C.IN.94IN11246		-----	-----	-----	-----
C.IN.95IN21068		-----	-----	-----	-----
CONSENSUS--D		PLVKLWYQL	PLVKLWYQL	PLVKLWYQL	PLVKLWYQL
D.CD.84ZR085		-----	-----	-----	-----
D.CD.ELI		-----	-----	-----	-----
D.CD.NDK		-----	-----	-----	-----
D.CD.Z2Z6		-----	-----	-----	-----
D.UG.94UG1141		-----	-----	-----	-----
F1.BE.VI850		-----	-----	-----	-----
F1.BR.93BR020-1		-----	-----	-----	-----
F1.FLFIN9363		-----	-----	-----	-----
F1.FR.MP411		-----	-----	-----	-----
F2.CM.MP255		-----	-----	-----	-----
F2.CM.MP257		-----	-----	-----	-----
F2KU.BE.VII126		-----	-----	-----	-----
G.BE.DRCBL		-----	-----	-----	-----
G.FI.HH8793-1-1		-----R-	-----	-----	-----
G.NG.92NG083		-----	-----	-----	-----
G.SE.SE6165		-----R-	-----	-----	-----
H.BE.VI991		H-	-----	-----	-----
H.BE.VI997		H-	-----	-----	-----
H.CF.90CF056		H-	-----	-----	-----
J.SE.SE7022		-----	-----	-----	-----
J.SE.SE7887		-----	-----	-----	-----
K.CD.EQTB11C		-----	-----	-----	-----
K.CM.MP535		-----	-----	-----	-----
MO.CM.97CAMP645MO		-----	-----	-----	-----
N.CM.YBF106		-----	-----	-----	-----
N.CM.YBF30		-----	-----	-----	-----
O.CM.ANT70		-----I-	-----	-----	-----
O.CM.MVP5180		-----I-	-----	-----	-----
O.SN.99SE-MP1299		-----I-	-----	-----	-----
O.SN.99SE-MP1300		-----I-	-----	-----	-----
U.CD.-.83CD0031		-----	-----	-----	-----
CONSENSUS--		PLVKLWYQL	PLVKLWYQL	PLVKLWYQL	PLVKLWYQL
UI55		-----	-----	-----	-----
01_AE.CF.90CF11697		-----	-----	-----	-----
01_AE.CF.90CF402		-----	-----	-----	-----
01_AE.CF.90CF4071		-----	-----	-----	-----
01_AE.TH.93TH057		-----	-----	-----	-----
01_AE.TH.93TH065		-----	-----	-----	-----
01_AE.TH.93TH253		-----	-----	-----	-----
01_AE.TH.93TH902		-----	-----	-----	-----
01_AE.TH.94TH702		-----	-----	-----	-----
01_AE.TH.95TNIH047		-----	-----	-----	-----
01_AE.TH.CM240		-----	-----	-----	-----
01_AE.TH.TH022		-----	-----	-----	-----
CONSENSUS--02_AG		PLVKLWYQL	PLVKLWYQL	PLVKLWYQL	PLVKLWYQL
02_AG.CM.97CMMP807		-----	-----	-----	-----
02_AG.FR.DI263		-----	-----	-----	-----
02_AG.FR.DI264		-----	-----	-----	-----
02_AG.GH.G829		-----	-----	-----	-----
02_AG.NG.IBNG		-----	-----	-----	-----
02_AG.SE.SE7812		-----	-----	-----	-----
02_AG.SN.98SEMPI211		-----	-----	-----	-----
02_AG.SN.98SEMPI213		-----	-----	-----	-----
03_AB.RU.KALI53-2		-----	-----	-----	-----
03_AB.RU.RU98001		-----	-----	-----	-----
04_cpx.CY.94CY032-3		-----	-----	-----	-----
04_cpx.GR.97PVCH		-----	-----	-----	-----
04_cpx.GR.97PVMY		-----	-----	-----	-----
05_DF.BE.VI1310		-----	-----	-----	-----
05_DF.BE.VI961		-----	-----	-----	-----

RT Epitope 87

Epitope #	HLA	Sequence	Reference
B . FR . HXB2	A26	ETFYVDGAANR	
CONSENSUS-A			
A.BY.97BL006		-----R-----	
A.KE.Q23		DS-F-E---KE	
A.SE.SE6594		-----	
A.SE.SE7253		-----	
A.SE.SE7535		-----	
A.SE.SE8538		-----	
A.SE.SE8891		-----	
A.SE.UGSE8131		-----	
A.UG.92UG037		-----	
A.UG.U455		-----	
A2.CD.97CDKFE4		-----	
A2.CY.94CY017-41		-----	
A2C.ZM.ZAMI84		-----	
A2D.-.97KR004		-----	
A2G.CD.97CDKPF58		-Y-E-----	
AC.ETE3099G		-----xDT-----	
AC.IN.21301		-----	
AC.RW.92RW009		-----	
AC.SE.SE9488		-----	
ACD.SE.SE8603		-----	
ACG.BE.VI1035		-----S-----	
AD.SE.SE6954		-----	
AD.SE.SE7108		-----	
ADHK.NO.97NOGIL3		-----	
ADK.CD.MAL		-----	
AG.BE.VI1197		-----	
AG.NG.92NG003		-----K-----	
AGHU.GA.VI354		-----	
AGU.CD.Z321		-----	
AJ.BW.BW2117		-----S-----	
CONSENSUS-B			
B.AU.MBC18		-----	
B.AU.MBC200		-----	
B.AU.MBC925		-----	
B.AU.MBCC54		-----	
B.AU.MBCC98		-----K-----	
B.AU.MBCD36		-----N-----	
B.AU.VH		-----	
B.CN.RL42		-----	
B.DE.D31		-----	
B.DE.HAN		-----	
B.FR.HXB2		-----	
B.GA.OYI		-----	
B.GB.CAM1		-----	
B.GB.GB8		-----	
B.GB.MANC		-----	
B.KR.WK		-----	
B.NL.3202A21		-----	
B.TW.TWCYS		-----	
B.UNK.NL43E9		-----	
B.US.AD8		-----	
B.US.BC		-----	
B.US.DH123		-----S-----	
B.US.JRCSF		-----	
B.US.RFL		-----	
B.US.MNCG		-----	
B.US.NY5CG		-----	
B.US.P896		-----	
B.US.PT2-9-95C		-----	
B.US.PT4-5-97		-----	
B.US.RF		-----	
B.US.SF2		-----	
B.US.WEAU160		-----K-----	
B.US.WR27		-----S-----	
B.US.YU2		-----	
BFI.BR.93BR029-4		-----	
CONSENSUS-C			
C.BR.92BR025		-----	
C.BW.96BW01B03		-----	
C.BW.96BW0402		-----	
C.BW.96BW0502		-----	
C.BW.96BW1104		-----	
C.BW.96BW1210		-----	
C.BW.96BW15B03		-----	
C.BW.96BW1626		-----	
C.BW.96BW17A09		-----	
C.ETE.TH2220		-----	
C.IN.93IN101		-----	
C.IN.93IN904		-----	
C.IN.93IN905		-----	
C.IN.93IN999		-----	
C.IN.94IN11246		-----	
C.IN.95IN21068		-----	
CONSENSUS-D			
D.CD.84ZR085		-----	
D.CD.ELI		-----K-----	
D.CD.NDK		-----	
D.CD.ZZ26		-----	
D.UG.94UG1141		-----	
F1.BE.VI850		D-----S-----	
F1.BR.93BR020-1		-----S-----	
F1.FLFIN9363		-----S-----	
F1.FR.MP411		-----S-----	
F2.CM.MP255		-----	
CONSENSUS-E			
E1.CM.MP257		-----	
E2.KU.BE.VI1126		-----	
G.BE.DRCBL		-Y-----	
G.FLHH8793-I-1		-Y-----	
G.NG.92NG083		-Y-----	
G.SE.SE6165		-Y-----	
H.BE.VI991		-Y-----	
H.BE.VI997		-Y-----	
H.CF.90CF056		-Y-I-----	
J.SE.SE7022		-----S-----	
J.SE.SE7887		-----S-----	
K.CD.EQTB11C		-----	
K.CM.MP535		-----H-----	
MO.CM.97CAMP645MO		-----N-----	
N.CM.YBF106		-Y-----K-----	
N.CM.YBF30		-----	
O.CM.ANT70		-Y-----	
O.CM.MVP5180		-----	
O.SN.99SE-MPI299		-Y-----	
O.SN.99SE-MPI300		-Y-----	
U.CD.-.83CD0031		-----	
CONSENSUS-F			
F1.U155		ETFYVDGAANR	
01_AE.CF.90CF11697		--L-----S--	
01_AE.CF.90CF402		-----S--	
01_AE.CF.90CF4071		-----S--	
01_AE.TH.93TH057		01_AE.TH.93TH065	
01_AE.TH.93TH253		01_AE.TH.93TH902	
01_AE.TH.94TH702		01_AE.TH.95TNIH047	
01_AE.TH.95TNIH047		01_AE.TH.CM240	
01_AE.TH.CM240		01_AE.TH.TH022	
CONSENSUS-G			
G1.AG.CM.97CMMP807		ETFYVDGAANR	
02_AG.FR.DJ263		-----	
02_AG.FR.DJ264		-----K-----	
02_AG.GH.G829		-----	
02_AG.NG.IBNG		-----	
02_AG.SE.SE7812		-----	
02_AG.SN.98SEMP1211		-----	
02_AG.SN.98SEMP1213		-----	
03_AB.RU.KAL153-2		-----	
03_AB.RU.RU98001		-----	
04_cpx.CY.94CY032-3		-----S-----	
04_cpx.GR.97PVCH		-----S-----	
04_cpx.GR.97PVMY		-----S-----	
05_DF.BE.VI1310		-----	
05_DF.BE.VI961		-----	

RT Epitope 94

Epitope #		HLA		
94		A2		
B.FR.HXB2	ELVNQIIEQL	ELVNQIIEQL		
CONSENSUS-A	ELVNQIIEKL			
A.BY.97BL006	-I--K---K-			
A.KE.Q23	-I-----K-			
A.SE.SE6594	-I-----K-			
A.SE.SE7253	-I-----K-			
A.SE.SE7535	-I-----K-			
A.SE.SE8538	-I-----K-			
A.SE.SE8891	-I-----K-			
A.SE.UGSE8131	-I-----K-			
A.UG.92UG037	-I-----K-			
A.UG.U455	-I-----K-			
A2.CD.97CDKFE4	-I-----K-			
A2.CY.94CY017.41	-I-----K-			
A2C.ZM.ZAM184	-I--L---K-			
A2D.-.97KR004	-I-----K-			
A2G.CD.97CDKP58	-I-----K-			
AC.ETE3099G	-I-----K-			
AC.IN.21301	-I-----K-			
AC.RW.92RW009	-A-----K-			
AC.SE.SE9488	-I-----K-			
ACD.SE.SE8603	-I-----K-			
ACG.BE.VII035	-I-----K-			
AD.SE.SE6954	-I-----K-			
AD.SE.SE7108	-I-----K-			
ADHK.NO.97NOGIL3	D-----K-			
ADK.CD.MAL	-I-----K-			
AG.BE.VII197	-I-----K-			
AG.NG.92NG003	-I-----K-			
AGHU.GA.VI354	-I-----K-			
AGU.CD.Z321	-S-----K-			
AJ.BW.BW2117	-S-----E-			
CONSENSUS-B	ELVsqIIEqL			
B.AU.MBC18	-I--N-----			
B.AU.MBC200	-S-----K-			
B.AU.MBC925	-S-----K-			
B.AU.MBC54	-I-S-----			
B.AU.MBC98	-V-S-----			
B.AU.MBCD36	-I-----K-			
B.AU.VH	-I-----K-			
B.CN.RL42	-S-----K-			
B.DE.D31	-S-----K-			
B.DE.HAN	-S-----K-			
B.FR.HXB2	-S-----K-			
B.GA.OYI	-S-----K-			
B.GB.CAM1	-S-----E-			
B.GB.GB8	-V-S-----			
B.GB.MANC	--S-----			
B.KR.WK	--S-----			
B.NL.3202A21	--S-----			
B.TW.TWCYS	--S---E-			
B.UNK.NL43E9	--S-----			
B.US.AD8	--S-----			
B.US.BC	--S-----			
B.US.DH123	--S-----			
B.US.JRCSF	--S-----			
B.US.JRFL	--S-----			
B.US.MNCG	--S-----			
B.US.NY5CG	--S-----			
B.US.P896	--S-----			
B.US.PT2.9-95C	--S-----			
B.US.PT4.5-97	--S-----			
B.US.RF	--S-----			
B.US.SF2	--S-----			
B.US.WEAU160	--S-----			
B.US.WR27	--S-----			
B.US.YU2	--S-----			
BF1.BR.93BR029.4	-I-----			
CONSENSUS-C	ELVnQIIEQL			
C.BR.92BR025	--S-----			
C.BW.96BW01B03	--S-----			
C.BW.96BW0402	--T-----			
C.BW.96BW0502	--S-----			
C.BW.96BW1104	--S-----			
C.BW.96BW1210	--S-----			
C.BW.96BW15B03	--S-----			
C.BW.96BW1626	--S-----			
C.BW.96BW17A09	--S-----			
C.ET.ETH2220	-I-----			
C.IN.93IN101	--S-----			
C.IN.93IN904	--S-----			
C.IN.93IN905	--S-----			
C.IN.93IN999	--S-----			
C.IN.94IN11246	--S-----			
C.IN.95IN21068	--S-----			
CONSENSUS-D	ELVsqIIEQL			
D.CD.84ZR085	--S-----			
D.CD.ELI	--S-----			
D.CD.NDK	--S-----			
D.CD.Z2Z6	--S-----			
D.UG.94UG1141	-V-S-----			
FI.BE.VI850	-I-----			
FI.BR.93BR020.1	--S-----			
FI.FI.FIN9363	--S-----			
FI.FR.MP411	-I--K---K-			
F2.CM.MP255	--S-----			
F2.CM.MP257	-I-----			
F2KU.BE.VII1126	-I-----			
G.BE.DRCBL	-I-----			
G.FI.HH8793-1-1	--S-----			
G.NG.92NG083	--S-----			
G.SE.SE6165	--S-----			
H.BE.VI991	-E-----			
H.BE.VI997	-E-----			
H.CF.90CF056	-E-----			
J.SE.SE7022	-E-----			
J.SE.SE7887	-E-----			
K.CD.EQTB11C	-E-----			
K.CM.MP535	D-----			
MO.CM.97CAMP645MO	-V--H--E-			
N.CM.YBF106	D--G---E-			
N.CM.YBF30	--S---E-			
O.CM.ANT70	PI-Q---E-			
O.CM.MVP5180	PI-Q---E-			
O.SN.99SE-MPI299	S--Q---E-			
O.SN.99SE-MPI300	P--Q---E-			
U.CD.-.83CD0031	-I-----			
CONSENSUS-	evVnQIIEeL			
UI55	-----K-			
01_AE.CF.90CF11697	-I-----K-			
01_AE.CF.90CF402	DI-----K-			
01_AE.CF.90CF4071	-I-----K-			
01_AE.TH.93TH057	-V-----E-			
01_AE.TH.93TH065	-V-S-M--E-			
01_AE.TH.93TH253	-V-S-----E-			
01_AE.TH.93TH902	-V-----E-			
01_AE.TH.94TH702	-V-----E-			
01_AE.TH.95TNIH047	-V---L--E-			
01_AE.TH.CM240	-V-----E-			
01_AE.TH.TH022	-V-----E-			
CONSENSUS-02_AG	ELVnqIIEkL			
02_AG.CM.97CMMP807	-----K-			
02_AG.FR.DJ263	-----K-			
02_AG.FR.DJ264	-----K-			
02_AG.GH.G829	-----K-			
02_AG.NG.IBNG	-----K-			
02_AG.SE.SE7812	---T-----			
02_AG.SN.98SEMP1211	---L---K-			
02_AG.SN.98SEMP1213	---S-----			
03_AB.RU.KAL153-2	---S-----			
03_AB.RU.RU98001	---S-----			
04_cpx.CY.94CY032-3	D-----			
04_cpx.GR.97PVCH	D-----L-			
04_cpx.GR.97PVMY	D-----			
05_DF.BE.VII1310	-----K-			
05_DF.BE.VI961	-----K-			

HIV CTL Epitope Alignments

B.GB.MANC	----	F2KU.BE.VII126	--S-----	06_cpx.ML.95ML127	--S-----
B.KR.WK	----	G.BE.DRCBL	--S-----	06_cpx.ML.95ML84	--S-----
B.NL.320A21	----	G.FI.HH8793-1-1	--S-----	06_cpx.SN.97SE1078	--S-----
B.TW.TWCYS	-T-----	G.NG.92NG083	--S-----	I0_CD.-BFL06131	-P-----
B.UNK.NL43E9	----	G.SE.SEG165	--S-----	I0_CD.-BFL07132	--S-----
B.US.AD8	----	H.BE.V1991	--S-----	I0_CD.-BFL11033	--S-----
B.US.BC	----	H.BE.V1997	--S-----	I1_cpx.CM.97CM-MP818	--T-----
B.US.DH123	----	H.CF.90CF056	--S-----	I1_cpx.FR.99FR-MP1298	--S-----
B.US.JRCSF	----	J.SE.SE7022	--S-----	I1_cpx.FR.99FR-MP1307	--S-----
B.US.JRFL	----	J.SE.SE7887	--S-----	I1_cpx.GR.GR17	--S-----
B.US.MNCG	----	K.CD.EQTBI1C	--S-----	CONSENSUS-CPZ	YLSWVPAHK
B.US.NY5CG	----	K.CM.MP535	--S-----	CPZ.CD.CPZANT	--S-----
B.US.P896	----	MO.CM.97CAMP645MO	--S-----	CPZ.CM.CAM3	--S-----
B.US.PT2-9-95C	----	N.CM.YBF106	--S-----	CPZ.CM.CAM5	--S-----
B.US.PT4-5-97	----	N.CM.YBF30	--S-----	CPZ.GA.CPZGAB	--S-----
B.US.RF	----	O.CM.ANT70	-T-----	CPZ.US.CPZUS	--IS-----
B.US.SF2	----	O.CM.MVP5180	-T-----		
B.US.WEAU160	----	O.SN.99SE-MP1299	-T-----		
B.US.WR27	----	O.SN.99SE-MP1300	F-T-----		
B.US.YU2	----	U.CD.-.83CD0031	--S-----		
BF1.BR.93BR029-4	----				
CONSENSUS-C	YLSWVPAHK	CONSENSUS -	YLSWVPAHK	CONSENSUS-02_AG	YLSWVPAHK
C.BR.92BR025	--S-----	UI55	--S-----	02_AG.CM.97CMMP807	--S-----
C.BW.96BW01B03	--S-----	01_AE.CF.90CF11697	--S-----	02_AG.FR.DJ263	--S-----
C.BW.96BW0402	--S-----	01_AE.CF.90CF402	--S-----	02_AG.FR.DJ264	--S-----
C.BW.96BW0502	--S-----	01_AE.CF.90CF4071	--SR-----	02_AG.GH.G829	--S-----
C.BW.96BW1104	--S-----	01_AE.TH.93TH057	--S-----	02_AG.NG.IBNG	--S-----
C.BW.96BW1210	--S-----	01_AE.TH.93TH065	--S-----	02_AG.SE.SE7812	--S-----
C.BW.96BW15B03	--S-----	01_AE.TH.93TH253	--S-----	02_AG.SN.98SEMP1211	--S-----
C.BW.96BW1626	--S-----	01_AE.TH.93TH902	--S-----	02_AG.SN.98SEMP1213	--S-----
C.BW.96BW17A09	--S-----	01_AE.TH.94TH702	--S-----	03_AB.RU.KAL153-2	--S-----
C.ETH2220	--S-----	01_AE.TH.95TNIH047	--S-----	03_AB.RU.RU98001	--S-----
C.IN.93IN101	--S-----	01_AE.TH.CM240	--S-----	04_cpx.CY.94CY032-3	--S-----
C.IN.93IN904	--S-----	01_AE.TH.TH022	--S-----	04_cpx.GR.97PVCH	--S-----
C.IN.93IN905	--S-----			04_cpx.GR.97PVMY	--S-----
C.IN.93IN999	--S-----			05_DF.BE.VII1310	--S-----
C.IN.94IN11246	--S-----			05_DF.BE.VI961	--S-----
C.IN.95IN21068	--S-----			06_cpx.AU.BFP90	--S-----
CONSENSUS-D	YLSWVPAHK				
D.CD.84ZR085	----				
D.CD.ELI	----				
D.CD.NDK	----				
D.CD.ZZ6	----				
D.UG.94UG1141	--S-----				
F1.BE.VI850	----				
F1.BR.93BR020-1	--S-----				
F1.FI.FIN9363	--S-----				
F1.FR.MP411	--S-----				
F2.CM.MP255	--S-----				
F2.CM.MP257	--S-----				