

HIV CTL Epitope Alignments

D.UG.94UG1141	-----I-----N-----	02_AG.SE.SE7812	-----I-----	02_AG.SN.98SEMP1211	-----I-----	19	EEKAFSPFVIMFMSALSEGA	HLA
CONSENSUS-F1	NAWKVIEEKAFSPFVIMPMF	03_AB.RU.KAL153-2	-----I-----	03_AB.RU.RU98001	-----I-----	20	KAFSPFVIMPMF	B*57
F1.BE.V1850	-----I-----	04_cpx.CY.94CY032-3	-----I-----	04_cpx.GR.97PVCH	-----I-----	21	KAFSPFVIMPMF	B*5701
F1.BR.93BR020-1	-----I-----	04_cpx.GR.97PVMY	-----I-----G-----	05_DF.BE.V11310	-----I-----	22	KAFSPFVIMPMF	B*5703
F1.BR.BZ162	-----I-----	05_DF.BE.V1961	-----I-----	06_cpx.AU.BFP90	-----I-----D-----	24	KAFSPFVI	B*5703
F1.CD.V1174	-----I-----	06_cpx.ML.95ML127	-----I-----	06_cpx.ML.95ML184	-----I-----	25	KAFSPFVI	B*57
F1.FIN9363	-----I-----	06_cpx.SN.97SE1078	-----AI-----	10_CD.-BFL06129	-----AI-----	26	EVI PMFSAL	A*2601
F1.FR.MP411	-----I-----	10_CD.-BFL07130	-----I-----	10_CD.-BFL11031	-----I-----	27	EVI PMFSAL	A26
F1.RW.V169	-----I-----	11_cpx.CM.97CM-MP818	-----I-----	11_cpx.FR.99FR-MP1298	-----I-----	28	VIPMFSAL	C*0102(Cw1)
F2.CM.MP255	-----I-----	11_cpx.FR.99FR-MP1307	-----I-----	11_cpx.GR.GR17	-----I-----	29	VIPMFSAL	Cw*0102,Cw1
F2.CM.MP257	-----I-----	CONSENSUS-CPZ	-----I-----		-----I-----	30	VIPMFSAL	Cw01,02
F2KU.BE.V11126	-----I-----	CPZ.CD.CPZANT	NAWKVV EEKnFp PEVIMPMF				EEKAFSPFVIMFMSALSEGA	
G.BE.DRCBL	-----I-----	CPZ.CM.CAM3	-----C-----N-----N-----					
G.FL.HH8793-1-1	-----I-----	CPZ.CM.CAM5	-----I-----N-----N-----					
G.NG.92NG083	-----I-----	CPZ.GA.CPZGAB	-----I-----N-----					
G.SE.SE6165	-----I-----	CPZ.US.CPZUS	-----A-----					
H.BE.V1991	-----A-----N-----I-----							
H.BE.V1997	-----A-----N-----I-----							
H.CF.90CF056	-----A-----N-----I-----							
J.SE.SE7022	-----I-----							
J.SE.SE7887	-----I-----							
K.BE.V1325	-----I-----							
K.CD.EQTB1IC	-----I-----							
K.CM.MP535	-----I-----							
MO.CM.97CAMP645MO	-----I-----N-----I-----							
N.CM.YBF106	-----I-----							
N.CM.YBF30	-----I-----							
O.CM.ANT70	-----A-----N-----I-----							
O.CM.MVP5180	-----A-----N-----I-----							
O.SN.99SE-MP1299	-----A-----N-----I-----							
O.SN.99SE-MP1300	-----A-----N-----I-----							
U.CD.-.83CD0031	-----I-----							
CONSENSUS-01_AE	NAWKVVEKGFnPPEVIMPMF							
01_AE.CF.90CF11697	-----G-----N-----							
01_AE.CF.90CF402	-----G-----N-----							
01_AE.CF.90CF4071	-----G-----N-----							
01_AE.TH.93TH057	-----G-----N-----							
01_AE.TH.93TH065	-----G-----N-----							
01_AE.TH.93TH253	-----I-----G-----N-----							
01_AE.TH.93TH902	-----G-----N-----							
01_AE.TH.94TH7091	-----G-----N-----							
01_AE.TH.95TNIH047	-----I-----G-----N-----							
01_AE.TH.CM240	-----G-----N-----							
01_AE.TH.TH022	-----G-----N-----							
CONSENSUS-02_AG	NAWKVIEEKAFSPFVIMPMF							
02_AG.FR.DJ263	-----I-----							
02_AG.FR.DJ264	-----I-----							
02_AG.GH.G829	-----I-----							
02_AG.NG.IBNG	-----I-----G-----							

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Epitope #								
19	EEKAFSPFVIMFMSALSEGA	HLA						
20	KAFSPFVIMPMF	B*57						
21	KAFSPFVIMPMF	B*5701						
22	KAFSPFVIMPMF	B*5703						
23	KAFSPFVIMPMF	B*57						
24	KAFSPFVI	B*5703						
25	KAFSPFVI	B*57						
26	EVI PMFSAL	A*2601						
27	EVI PMFSAL	A26						
28	VIPMFSAL	C*0102(Cw1)						
29	VIPMFSAL	Cw*0102,Cw1						
30	VIPMFSAL	Cw01,02						
B.FR.HXB2	EEKAFSPFVIMFMSALSEGA							
CONSENSUS-A	EEKAFSPFVIMFMSALSEGA							
A.BY.97BL006	-----							
A.KE.Q23	-----G-N-----							
A.SE.SE6594	-----G-N-----							
A.SE.SE7253	-----V-----							
A.SE.SE7535	-----							
A.SE.SE8538	-----G-N-----							
A.SE.SE8891	-----G-----							
A.SE.UGSE8131	-----R-----							
A.UG.92UG037	-----L-----							
A.UG.U455	-----D-----							
A2.CD.97CDKTB48	-----T-----							
A2.CY.94CY017-41	-----T-----							
A2C.ZM.ZAM174-21	-----T-----							
A2C.ZM.ZAM184	-----T-----							
A2C.ZM.ZAM716-17	-----T-----							
A2D.-.97KR004	-----							
A2G.CD.97CDKPP58	-----							
AC.ETE3099G	-----							
AC.IN.21301	-----I-----T-----							
AC.RW.92RW009	-----Q-----T-----							
AC.SE.SE9488	-----D-----T-----							
ACD.SE.SE8603	-----							
ACG.BE.V11035	-----							
AD.SE.SE6954	-----							
AD.SE.SE7108	-----							
ADHK.NO.97NOGIL3	-----D-----							
ADK.CD.MAL	-----							
AG.BE.V11197	-----G-----							
AG.NG.92NG003	-----N-----T-----							
AGHU.GA.V1354	-----G-----							
AGU.CD.Z321	-----N-----							
AJ.BW.BW2117	-----							

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Epitope #	HLA	AG.NG.92NG003	AGHU.GA.VI354	AGU.CD.Z321	AJ.BW.BW2117	CONSENSUS - B	SALS	EGAT	PQDL	NTML	NTV	GV
33	SALSEGATPQDLNMLNIVG	B*8101	AG.NG.92NG003	AGHU.GA.VI354	AJ.BW.BW2117	B.AU.MBC18	T	---	---	---	---	---
34	SEGATPQDL	B*4001	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.MBC200	---	---	---	---	---	M---
35	CTPYDINQMLNC	B58	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.MBC925	---	---	---	---	---	M---
36	ATPQDLNML	B53	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.MBC54	---	---	---	---	---	M---
37	TPQDLNTML	B*0702	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.MBC98	---	---	---	---	---	M---
38	TPQDLNTML	B*4201	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.MBCD36	---	---	---	---	---	M---
39	TPYDINQML	B*5301	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.SC49	---	---	---	---	---	M---
40	TPQDLNTML	B*8101	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.VH	---	---	---	---	---	M---
41	TPQDLNTML	B42	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.CN.RL42	---	---	---	---	---	M---
42	TPQDLNQML	B53	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.DE.D31	---	---	---	---	---	M---
43	TPQDLNTML	B7	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.DE.HAN	---	---	---	---	---	M---
44	TPQDLNTML	C*0802(Cw8)	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.ES.89SP061	---	---	---	---	---	M---
45	PDQDLNTMLN	B14, Cw8	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.FR.HXB2	---	---	---	---	---	M---
46	DLNMLNIV	B14	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.GA.OYI	---	---	---	---	---	M---
47	DLNTMLNTV	B14, Cw8	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.GB.CAMI	---	---	---	---	---	M---
48	DLNTMLNTV	C*0802	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.GB.GB8	---	---	---	---	---	M---
49	DLNTMLNTV	Cw8	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.GB.MANC	---	---	---	---	---	M---
50	DLNTMLNTV	Cw8, B*1402	AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.JP.JH31	---	---	---	---	---	M---
B. FR. HXB2	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.KR.WK	---	---	---	---	---	M---
CONSENSUS - A	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.NL.3202A21	---	---	---	---	---	M---
A.B.Y.97BL006	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.TW.TWCYS	---	---	---	---	---	M---
A.KE.Q23	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.UNK.NL43E9	---	---	---	---	---	M---
A.SE.SE6594	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.85WCIPR54	---	---	---	---	---	M---
A.SE.SE7253	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.AD8	---	---	---	---	---	M---
A.SE.SE7535	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.BC	---	---	---	---	---	M---
A.SE.SE8538	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.DH123	---	---	---	---	---	M---
A.SE.SE8891	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.JRCSF	---	---	---	---	---	M---
A.SE.UGSE8131	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.JRFL	---	---	---	---	---	M---
A.UG.92UG037	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.MNCG	---	---	---	---	---	M---
A.UG.U455	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.NC7	---	---	---	---	---	M---
A2.CD.97CDKTB48	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.NY5CG	---	---	---	---	---	M---
A2.CY.94CY017-41	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.P896	---	---	---	---	---	M---
A2C.ZM.ZAM174-21	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.RF	---	---	---	---	---	M---
A2C.ZM.ZAM184	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.SF2	---	---	---	---	---	M---
A2C.ZM.ZAM716-17	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.WEAU160	---	---	---	---	---	M---
A2D.-.97KR004	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.WR27	---	---	---	---	---	M---
A2G.CD.97CDKPS8	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.YU2	---	---	---	---	---	M---
AC.ETE3099G	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	BFL.BR.93BR029-4	---	---	---	---	---	M---
AC.IN.21301	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	CONSENSUS - C	---	---	---	---	---	M---
AC.RW.92RW009	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	C.BR.92BR025	---	---	---	---	---	M---
AC.SE.SE9488	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	C.BW.96BW01B22	---	---	---	---	---	M---
ACD.SE.SE8603	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	C.BW.96BW0402	---	---	---	---	---	M---
ACG.BE.VII1035	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	C.BW.96BW0502	---	---	---	---	---	M---
AD.SE.SE6954	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	C.BW.96BW1104	---	---	---	---	---	M---
AD.SE.SE7108	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	C.BW.96BW1210	---	---	---	---	---	M---
ADHK.NO.97NOGIL3	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	CONSENSUS - B	---	---	---	---	---	M---
ADK.CD.MAL	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.MBC18	---	---	---	---	---	M---
AG.BE.VII1197	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.MBC200	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.MBC925	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.MBC54	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.MBC98	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.MBCD36	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.SC49	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.AU.VH	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.CN.RL42	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.DE.D31	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.DE.HAN	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.ES.89SP061	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.FR.HXB2	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.GA.OYI	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.GB.CAMI	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.GB.GB8	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.GB.MANC	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.JP.JH31	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.KR.WK	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.NL.3202A21	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.TW.TWCYS	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.UNK.NL43E9	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.85WCIPR54	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.AD8	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.BC	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.DH123	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.JRCSF	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.JRFL	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.MNCG	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.NC7	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.NY5CG	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.P896	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.RF	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.SF2	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.WEAU160	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.WR27	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	B.US.YU2	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	BFL.BR.93BR029-4	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	CONSENSUS - C	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	C.BR.92BR025	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	C.BW.96BW01B22	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	C.BW.96BW0402	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	C.BW.96BW0502	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	C.BW.96BW1104	---	---	---	---	---	M---
	DLNTMLNTV		AGU.CD.Z321	AGU.CD.Z321	AJ.BW.BW2117	C.BW.96BW1210	---	---	---	---	---	M---

HIV CTL Epitope Alignments

C.BW.96BW15B03	T-----	CONSENSUS--01_AE	sALSEGATPQDLNMLNIVG	HLA
C.BW.96BW1626	T-----	01_AE.CF.90CF11697	-----M--I--	GHQAAMQMLKE A2
C.BW.96BW17A09	T-----	01_AE.CF.90CF402	-----M--I--	GHQAAMQML B*3901
C.ET.ETH2220	T-----	01_AE.CF.90CF4071	-----M--I--	GHQAAMQML B39
C.IN.93IN101	T-----	01_AE.TH.93TH057	-----M--I--	HQAAMQMLK B52
C.IN.93IN904	T-----	01_AE.TH.93TH065	-----M--I--	GHQAAMQMLKE
C.IN.93IN905	T-----	01_AE.TH.93TH253	-----M--I--	
C.IN.93IN999	T-----	01_AE.TH.93TH902	-----S-----	
C.IN.94IN11246	T-----	01_AE.TH.94TH7091	P-----S-----	
C.IN.95IN21068	T-----	01_AE.TH.95TNIH047	-----M--I--	
C.IN.AF209990	T-----	01_AE.TH.CM240	-----M--I--	
		01_AE.TH.TH022	-----M--I--	
CONSENSUS-D		CONSENSUS--02_AG	?ALSEGATPQDLNMLNIVG	CONSENSUS-A
D.CD.84ZR085	-----	02_AG.FR.DJ263	-----M--I--	A.BY.97BL006
D.CD.ELI	-----	02_AG.FR.DJ264	T-----M--I--	A.KE.Q23
D.CD.NDK	-----	02_AG.GH.G829	T-----M--I--	A.SE.SE6594
D.CD.ZZ26	-----	02_AG.NG.IBNG	T-----M--I--	A.SE.SE7253
D.UG.94UG1141	-----	02_AG.SE.SE7812	-----M--I--	A.SE.SE7535
		02_AG.SN.98SEMP1211	-----M--I--	A.SE.SE8538
CONSENSUS-F1		03_AB.RU.KAL153-2	-----M--I--	A.SE.SE8891
F1.BE.V1850	-----	03_ABRURU98001	-----M--I--	A.SE.UGSE8131
F1.BR.93BR020-1	-----	04_cpx.CY.94CY032-3	-----M--I--	A.UG.92UG037
F1.BR.BZ162	-----	04_cpx.GR.97PVC	-----M--I--	A.UG.U455
F1.CD.V1174	-----	05_DFBE.V11310	-----M--I--	A2.CD.97CDKTB48
F1.FI.FIN9363	-----	05_DFBE.V1961	T-----M--I--	A2.CY.94CY017-41
F1.FR.MP411	-----	06_cpx.AU.BFP90	T-----M--I--	A2.C.ZM.ZAM174-21
F1.RW.V169	-----	06_cpx.ML.95ML127	-----M--I--	A2.C.ZM.ZAM184
F2.CM.MP255	-----	06_cpx.ML.95ML84	-----M--I--	A2.C.ZM.ZAM716-17
F2.CM.MP257	-----	06_cpx.SN.97SE1078	-----M--I--	A2D.-.97KR004
F2.KU.BE.V1126	T-----	10_CD.-.BFL06129	-----M--I--	A2G.CD.97CDKPP58
G.BE.DRCBL	T-----	10_CD.-.BFL07130	T-----M--I--	AC.ETE3099G
G.FL.HH8793-1-1	-----	10_CD.-.BFL11031	-----M--I--	AC.IN.21301
G.NG.92NG083	-----	11_cpx.CM.97CM-MP818	-----M--I--	AC.RW.92RW009
G.SE.SE6165	-----	11_cpx.FR.99FR-MP1298	-----M--I--	AC.SE.SE9488
H.BE.V1991	-----	11_cpx.FR.99FR-MP1307	-----M--I--	ACD.SE.SE8603
H.BE.V1997	-----	CONSENSUS--CPZ	-----M--I--	ACG.BE.V11035
H.CF.90CF056	-----	CPZ.CD.CPZANT	-----M--I--	AD.SE.SE6954
J.SE.SE7022	-----	CPZ.CM.CAM3	-----M--I--	AD.SE.SE7108
J.SE.SE7887	-----	CPZ.CM.CAM5	-----M--I--	ADHK.NO.97NOGIL3
K.BE.V1325	-----	CPZ.GA.CPZGAB	-----M--I--	ADK.CD.MAL
K.CD.EQTB11C	-----	CPZ.US.CPZUS	-----M--I--	AG.BE.V11197
K.CM.MP535	T-----		-----M--I--	AG.NG.92NG003
M.O.CM.97CAMP645MO	M-----		-----M--I--	AGU.GA.V1354
N.CM.YBF106	M-----		-----M--I--	AGU.CD.Z321
N.CM.YBF30	M-----		-----M--I--	AJ.BW.BW2117
O.CM.ANT70	M-----		-----M--I--	CONSENSUS-B
O.CM.MVP5180	M-----		-----M--I--	B.AU.MBC18
O.SN.99SE-MP1299	M-----		-----M--I--	B.AU.MBC200
O.SN.99SE-MP1300	M-----		-----M--I--	B.AU.MBC925
U.CD.-.83CD0031	-----		-----M--I--	B.AU.MBCC54
			-----M--I--	B.AU.MBCC98
			-----M--I--	B.AU.MBCD36
			-----M--I--	B.AU.MBCD49
			-----M--I--	B.AU.VH
			-----M--I--	HQA-----

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B.CN.RL42	-----	CONSENSUS - D	GHQAAMQMLK	CONSENSUS - 02_AG	GHQAAMQMLKD
B.DE.D31	-----	D.CD.84ZR085	-----	02_AG.FR.DI263	-----D
B.DE.HAN	-----	D.CD.ELI	-----	02_AG.FR.DI264	-----D
B.ES.89SP061	-----	D.CD.NDK	-----	02_AG.GH.G829	-----D
B.FR.HXB2	-----	D.CD.ZZ26	-----	02_AG.NG.IBNG	-----D
B.GA.OYI	-----	D.UG.94UG1141	-----D	02_AG.SE.SE7812	-----D
B.GB.CAMI	-----	CONSENSUS - F1	GHQAAMQMLKD	02_AG.SN.98SEMPI211	-----D
B.GB.GB8	-----	F1.BE.V1850	-----D	03_AB.RU.KALI53-2	-----D
B.GB.MANC	-----	F1.BR.93BR020-1	-----D	03_AB.RU.RU98001	-----D
B.JP.JH31	-----	F1.BR.BZ162	-----D	04_cpx.CY.94CY032-3	-----D
B.KR.WK	-----	F1.CD.V1174	-----D	04_cpx.GR.97PVCH	-----D
B.NL.3202A21	-----	F1.FI.FIN9363	-----D	04_cpx.GR.97PVMY	-----D
B.TW.TWCYS	-----	F1.FR.MP411	-----D	05_DF.BE.V11310	-----D
B.UNK.NL43E9	-----	F1.FR.MP411	-----D	05_DF.BE.V1961	-----D
B.US.85WCIPR54	-----	F1.RW.V169	-----D	06_cpx.AU.BFP90	-----D
B.US.AD8	-----	F2.CM.MP255	-----D	06_cpx.ML.95ML127	-----D
B.US.BC	-----	F2.CM.MP257	-----D	06_cpx.ML.95ML84	-----D
B.US.DHI23	-----	F2.KU.BE.V11126	-----D	06_cpx.SN.97SE1078	-----D
B.US.JRCSF	-----	G.BE.DRCBL	-----D	10_CD.-.BFL06129	-----D
B.US.JRFL	-----	G.FI.HH8793-1-1	-----D	10_CD.-.BFL07130	-----G
B.US.MNCG	-----	G.NG.92NG083	-----D	10_CD.-.BFL11031	-----D
B.US.NC7	-----	G.SE.SE6165	-----D	11_cpx.CM.97CM-MP818	-----D
B.US.NY5CG	-----	H.BE.V1991	-----D	11_cpx.FR.99FR-MPI298	-----D
B.US.P896	-----	H.BE.V1997	-----D	11_cpx.FR.99FR-MPI307	-----D
B.US.RF	-----	H.CF.90CF056	-----D	11_cpx.GR.GR17	-----D
B.US.SF2	-----	J.SE.SE7022	-----D	CONSENSUS - CPZ	GHQAAMQVLKE
B.US.WEAU160	-----	J.SE.SE7887	-----D	CPZ.CD.CPZANT	D--G--V--
B.US.WR27	-----	K.BE.V1325	-----D	CPZ.CM.CAM3	---G--V--
B.US.YU2	-----	K.CD.EQTB11C	-----D	CPZ.CM.CAM5	---G--V--
BF1.BR.93BR029-4	-----	K.CM.MP535	-----D	CPZ.GA.CPZGAB	---G--V--
CONSENSUS - C	GHQAAMQMLKD	MO.CM.97CAMP645MO	-----D	CPZ.US.CPZUS	---G--V--
C.BR.92BR025	-----D	N.CM.YBF106	-----		
C.BW.96BW01B22	-----D	N.CM.YBF30	-----		
C.BW.96BW0402	-----D	O.CM.ANT70	-----		
C.BW.96BW0502	-----D	O.CM.MVP5180	---G-L-V--		
C.BW.96BW1104	-----D	O.SN.99SE-MPI299	---G-L-V--		
C.BW.96BW1210	-----D	O.SN.99SE-MPI300	---G-L-V--		
C.BW.96BW15B03	-----D	U.CD.-.83CD0031	-----D		
C.BW.96BW1626	-----D	CONSENSUS - 01_AE	GHQAAMQMLKE		
C.BW.96BW17A09	-----D	01_AE.CF.90CF11697	-----D		
C.ET.ETH2220	-----D	01_AE.CF.90CF402	-----D		
C.IN.93IN101	-----D	01_AE.CF.90CF4071	-----I--D		
C.IN.93IN904	-----D	01_AE.TH.93TH057	E-----D		
C.IN.93IN905	-----D	01_AE.TH.93TH065	-----		
C.IN.93IN999	-----D	01_AE.TH.93TH253	-----		
C.IN.94IN11246	-----D	01_AE.TH.93TH902	-----I-		
C.IN.95IN21068	-----D	01_AE.TH.94TH7091	-----I-		
C.IN.AF209990	-----D	01_AE.TH.95TNIH047	-----		
	-----D	01_AE.TH.CM240	-----		
	-----D	01_AE.TH.TH022	-----		

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Epitope #	HLA			
55	A*2501	ETINEEAaEW	-----	-----
	A25	ETINEEAaEW	-----	-----
B.FR.HXB2		ETINEEAaEW	-----	-----
CONSENSUS--A		DTINEEAaew	-----	-----
A.BY.97BL006		D-----xx	-----	D-----
A.KE.Q23		D-----	-----	D-----
A.SE.SE6594		D-----	-----	D-----
A.SE.SE7253		D-----	-----	D-----
A.SE.SE7535		D-----	-----	D-----
A.SE.SE8538		D-----	-----	D-----
A.SE.SE8891		D-----	-----	D-----
A.SE.UGSE8131		D-----	-----	D-----
A.UG.92UG037		D-----	-----	D-----
A.UG.U455		D-----	-----	D-----
A2.CD.97CDKTB48		D-----	-----	D-----
A2.CY.94CY017-41		D-----	-----	D-----
A2C.ZM.ZAMI74-21		D-----	-----	D-----
A2C.ZM.ZAMI84		D-----	-----	D-----
A2C.ZM.ZAM716-17		D-----	-----	D-----
A2D.-.97KR004		D-----	-----	D-----
A2G.CD.97CDKP58		D-----	-----	D-----
AC.ETE3099G		-----	-----	-----
AC.IN.21301		D-----	-----	D-----
AC.RW.92RW009		D-----	-----	D-----
AC.SE.SE9488		D-----	-----	D-----
ACD.SE.SE8603		D-----	-----	D-----
ACG.BE.VI1035		D-----D	-----	D-----
AD.SE.SE6954		D-----D	-----	D-----
AD.SE.SE7108		D-----D	-----	D-----
ADHK.NO.97NOGIL3		D-----D	-----	D-----
ADK.CD.MAL		D-----D	-----	D-----
AG.BE.VI1197		D-----	-----	D-----
AG.NG.92NG003		DS-----	-----	DS-----
AGHU.GA.VI354		D-----	-----	D-----
AGU.CD.Z321		D-----	-----	D-----
AJ.BW.BW2117		D-----	-----	D-----
CONSENSUS--B		ETINEEAaew	-----	-----
B.AU.MBC18		-----	-----	-----
B.AU.MBC200		-----	-----	-----
B.AU.MBC925		-----	-----	-----
B.AU.MBCC54		-----G-----	-----	-----P-----
B.AU.MBCC98		-----	-----	-----P-----
B.AU.MBCD36		-----	-----	-----
B.AU.SC49		-----	-----	-----
B.AU.VH		-----D-----	-----	-----
B.CN.RL42		-----	-----	-----
B.DE.D31		-----	-----	-----
B.DE.HAN		-----	-----	-----
B.ES.89SP061		-----	-----	-----
B.FR.HXB2		-----	-----	-----
B.GA.OYI		-----	-----	-----
B.GB.CAMI		-----	-----	-----
B.GB.GB8		-----	-----	-----
B.GB.MANC		-----	-----	-----
B.JP.JH31		-----	-----	-----
B.KR.WK		-----D-----	-----	-----
B.NL.3202A21		-----	-----	-----
B.TW.TWCYS		-----	-----	-----
B.UNK.NL43E9		-----	-----	-----
B.US.85WCIPR54		-----	-----	-----
B.US.AD8		-----	-----	-----
B.US.BC		-----	-----	-----
B.US.DH123		-----	-----	-----
B.US.JRCSF		-----	-----	-----
B.US.JRFL		-----	-----	-----
B.US.MNCG		-----	-----	-----
B.US.NC7		-----	-----	-----
B.US.NY5CG		-----	-----	-----
B.US.P896		-----	-----	-----
B.US.RF		-----	-----	-----
B.US.SF2		-----	-----	-----
B.US.WEAU160		-----	-----	-----
B.US.WR27		-----D-----	-----	-----
B.US.YU2		-----	-----	-----
BFI.BR.93BR029-4		-----	-----	-----
CONSENSUS--C		DTINEEAaew	-----	-----
C.BR.92BR025		D-----	-----	D-----
C.BW.96BW01B22		D-----	-----	D-----
C.BW.96BW0402		D-----	-----	D-----
C.BW.96BW0502		D-----	-----	D-----
C.BW.96BW1104		D-----	-----	D-----
C.BW.96BW1210		D-----G-----	-----	D-----
C.BW.96BW15B03		D-----	-----	D-----
C.BW.96BW1626		D-----	-----	D-----
C.BW.96BW17A09		D-----	-----	D-----
C.ETE.TH2220		D-----	-----	D-----
C.IN.93IN101		D-----	-----	D-----
C.IN.93IN904		D-----	-----	D-----
C.IN.93IN905		D-----	-----	D-----
C.IN.93IN999		D-----	-----	D-----
C.IN.94IN11246		D-----	-----	D-----
C.IN.95IN21068		D-----	-----	D-----
C.IN.AF209990		D-----	-----	D-----
CONSENSUS--D		etINEEAaew	-----	-----
D.CD.84ZR085		-----	-----	-----
D.CD.ELI		-----	-----	-----
D.CD.NDK		-----D-----	-----	-----
D.CD.ZZZ6		-----	-----	-----
D.UG.94UG1141		D-----	-----	D-----
CONSENSUS--F1		DTINEEAaEW	-----	-----
F1.BE.VI850		D-----	-----	D-----
F1.BR.93BR020-1		D-----	-----	D-----
F1.BR.BZ162		D-----	-----	D-----
F1.CD.VI174		D-----	-----	D-----
F1.FI.FIN9363		D-----	-----	D-----
F1.FR.MP411		D-----	-----	D-----
F1.RW.VI69		D-----	-----	D-----
F2.CM.MP255		D-----	-----	D-----
F2.CM.MP257		D-----	-----	D-----
F2KU.BE.VI1126		D-----D-----	-----	D-----
G.BE.DRCBL		-----	-----	-----
G.FLHH8793-1-1		D-----D-----	-----	D-----
G.NG.92NG083		D-----	-----	D-----
G.SE.SE6165		D-----	-----	D-----
H.BE.VI991		D-----	-----	D-----
H.BE.VI997		D-----	-----	D-----
H.CF.90CF056		D-----	-----	D-----
J.SE.SE7022		D-----	-----	D-----
J.SE.SE7887		D-----	-----	D-----
K.BE.VI325		D-----	-----	D-----
K.CD.EQTB11C		D-----	-----	D-----
K.CM.MP535		D-----D-----	-----	D-----
MO.CM.97CAMF645MO		D-----	-----	D-----
N.CM.YBF106		-V-----	-----	-V-----
N.CM.YBF30		-V-----D-----	-----	-V-----
O.CM.ANT70		-V-----V-----	-----	-V-----
O.CM.MVP5180		-V-----	-----	-V-----
O.SN.99SE-MPI299		-V-----	-----	-V-----
O.SN.99SE-MPI300		-V-----	-----	-V-----
U.CD.-83CD0031		D-----D-----	-----	D-----
CONSENSUS--01_AE		etINEEAaEW	-----	-----
01_AE.CF.90CFI1697		D-----	-----	D-----
01_AE.CF.90CF402		D-----	-----	D-----
01_AE.CF.90CF4071		D-----	-----	D-----
01_AE.TH.93TH057		--T-----	-----	--T-----
01_AE.TH.93TH065		-----	-----	-----
01_AE.TH.93TH253		-----	-----	-----
01_AE.TH.93TH902		-----	-----	-----
01_AE.TH.94TH7091		-----	-----	-----
01_AE.TH.95TNIH047		-----P-----	-----	-----P-----
01_AE.TH.CM240		-----P-----	-----	-----P-----
01_AE.TH.TH022		-----	-----	-----
CONSENSUS--02_AG		DTINEEAaew	-----	-----
02_AG.FR.DJ263		D-----	-----	D-----
02_AG.FR.DJ264		D-----	-----	D-----
02_AG.GH.G829		D-----	-----	D-----

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D.UG.94UG1141	L-----V-	02_AG.SE.SE7812	-----P		
CONSENSUS-F1	LHPvHAGPiP	02_AG.SN.98SEMP1211	T-----P		
Fl.BE.V1850	L-----AP	03_AB.RU.KAL153-2	L--AQ--FP		
Fl.BR.93BR020-1	L--TQ-----P	03_AB.RU.RU98001	L--AQ--FP		
Fl.BR.BZ162	L--AQ-----P	04_cpx.CY.94CY032-3	T-----P		
Fl.CD.V1174	L--Q-----P	04_cpx.GR.97PVCH	A-----P		
Fl.FLFIN9363	L-----P	04_cpx.GR.97PVMY	---A-----NP		
Fl.FR.MP411	L--A-----L	05_DF.BE.V11310	L--Q--V-		
Fl.FR.VI69	L-----NP	05_DF.BE.VI961	---AQ-----		
F2.CM.MP255	L-----P	06_cpx.AU.BFP90	-----P		
F2.CM.MP257	L-----P	06_cpx.ML.95ML127	-----P		
F2KU.BE.V11126	L-----P	06_cpx.ML.95ML84	M--Q--MP		
G.BE.DRCBL	L--OQ-----	06_cpx.SN.97SE1078	---AQ--P		
G.FI.HH8793-1-1	L--OQ-----	10_CD.-BFL06129	L--Q--V-		
G.NG.92NG083	I--OQ-----P	10_CD.-BFL07130	L--Q-----V-		
G.SE.SE6165	M--OQ-----FP	10_CD.-BFL11031	L--AQ-----		
H.BE.V1991	L-----P	11_cpx.CM.97CM-MP818	L--Q-----		
H.BE.V1997	L-----P	11_cpx.FR.99FR-MP1298	I-----P		
H.CF.90CF056	L-----P	11_cpx.FR.99FR-MP1307	I-----P		
J.SE.SE7022	-----V-	11_cpx.GR.GR17	-----AP		
J.SE.SE7887	-----	CONSENSUS-Cpz	LHP?HAGPiA		
K.BE.V1325	L-----P	CPZ.CD.CPZANT	L--T-----VQ		
K.CD.EQTB11C	M--Q-----P	CPZ.CM.CAM3	T-----V		
K.CM.MP535	L-----P	CPZ.CM.CAM5	L-----		
MO.CM.97CAMP645MO	L-----V-	CPZ.GA.CPZGAB	L--T-----		
N.CM.YBF106	T--APV--LP	CPZ.US.CPZUS	T--L-----		
N.CM.YBF30	T--PV--LP				
O.CM.ANT70	T--PPV--LP				
O.CM.MVP5180	T--PAM--LP				
O.SN.99SE-MP1299	T--FA--LP				
O.SN.99SE-MP1300	T--QA--LP				
U.CD.-.83CD0031	L-----P				
CONSENSUS-01_AE	VHPvHAGPiP				
01_AE.CF.90CF11697	L-----P				
01_AE.CF.90CF402	-----P				
01_AE.CF.90CF4071	-----P				
01_AE.TH.93TH057	-----P				
01_AE.TH.93TH065	-----P				
01_AE.TH.93TH253	-----P				
01_AE.TH.93TH902	-----P				
01_AE.TH.94TH7091	-----P				
01_AE.TH.95THIH047	-----P				
01_AE.TH.CM240	-----P				
01_AE.TH.TH022	-----P				
CONSENSUS-02_AG	VHPvHAGPiP				
02_AG.FR.DJ263	-----P				
02_AG.FR.DJ264	-----P				
02_AG.GH.G829	T--I-----NP				
02_AG.NG.IBNG	-----P				

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Epitope #	HLA
58	A2
B.FR.HXB2	HAGPIAPGQMREPRG HAGPIAPGQMREPRG
CONSENSUS-A	hAGPiAPGQMREPRG
A.BY.97BL006	Q---FP-----
A.KE.Q23	-----P
A.SE.SE6594	-----P
A.SE.SE7253	---V-----
A.SE.SE7535	-----P
A.SE.SE8538	-----P
A.SE.SE8891	-----P
A.SE.UGSE8131	---V-----
A.UG.92UG037	---V-----
A.UG.U455	-----P
A2.CD.97CDKTB48	Q---P-----
A2.CY.94CY017-41	-----P
A2C.ZM.ZAM174-21	Q--V-----D--
A2C.ZM.ZAM184	-----P
A2C.ZM.ZAM716-17	Q--V-----
A2D.-.97KR004	-----P
A2G.CD.97CDKP58	-----P
AC.ETE3099G	-----
AC.IN.21301	Q-----
AC.RW.92RW009	Q--V--I-----
AC.SE.SE9488	Q--V-----
ACD.SE.SE8603	L-----
ACG.BE.V11035	---NP-----
AD.SE.SE6954	---N-----
AD.SE.SE7108	-----P
ADHK.NO.97NNOGIL3	-----P
ADK.CD.MAL	-----P
AG.BE.V11197	-----P
AG.NG.92NG003	Q---P--I-----
AGHU.GA.V1354	Q---P--I-----
AGU.CD.Z321	Q---P--I-----
AJ.BW.BW2117	-----P
CONSENSUS-B	hAGPiAPGQMrePRG
B.AU.MBC18	Q---V-----D--
B.AU.MBC200	-----
B.AU.MBC925	-----
B.AU.MBCC54	Q-----
B.AU.MBCC98	-----
B.AU.MBCD36	Q--V--K-----
B.AU.SC49	---N-----
B.AU.VH	-----
B.CN.RL42	---V-----
B.DE.D31	-----
B.DE.HAN	-----

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B.ES.89SP061	----	HP-----	D.UG.94UG1141	----	V---L----	02_AG.SE.SE7812	----	P-----
B.FR.HXB2	----	----	CONSENSUS-F1	hAGFIPpGQmREPRG	hAGFIPpGQmREPRG	02_AG.SN.98SEMP1211	----	P-----
B.GA.OYI	----	----	F1.BE.V1850	----	AP-----	03_AB.RU.KAL153-2	Q----	FP-----
B.GB.CAM1	----	----	F1.BR.93BR020-1	Q----	P---I----	03_ABRURURU98001	Q----	FP-----
B.GB.GB8	----	V-----	F1.BR.BZ162	Q----	P---I----	04_cpx.CY.94CY032-3	----	P-----
B.GB.MANC	----	V-----	F1.CD.V1174	Q----	P---I----	04_cpx.GR.97pVCH	----	P-----
B.JP.JH31	Q----	----	F1.FI.FIN9363	Q----	P---I----	05_DF.BE.VII1310	Q----	NPA-----
B.KR.WK	----	----	F1.FR.MP411	----	L-----	05_DF.BE.VI961	Q----	V-----D
B.NL.3202A21	----	----	F1.RW.VI69	----	NP-----	06_cpx.AU.BFP90	----	P---I----
B.TW.TWCYS	----	----	F2.CM.MP255	----	P-----	06_cpx.ML.95ML127	----	P-----
B.UNK.NL43E9	----	----	F2.CM.MP257	----	P-----	06_cpx.ML.95ML84	Q----	MP-----
B.US.85WCIPR54	----	----	F2KU.BE.VII126	----	P-----	06_cpx.SN.97SE1078	Q----	P---I-D
B.US.AD8	Q----	V-----	G.BE.DRCBL	Q----	I-D-T-	10_CD.-.BFL06129	Q----	V---I----
B.US.BC	----	----	G.FL.HH8793-1-1	Q----	P---I----	10_CD.-.BFL07130	Q----	V-----
B.US.DH123	----	----	G.NG.92NG083	Q----	P---I---S-	10_CD.-.BFL11031	Q----	I-----
B.US.JRCSF	----	----	G.SE.SE6165	Q----	FP---I----	11_cpx.CM.97CM-MP818	Q----	D-----
B.US.JRFL	----	T-----	H.BE.VI991	----	P-----	11_cpx.FR.99FR-MP1298	----	P-----
B.US.MNCG	Q----	L-----	H.BE.VI997	----	P-----	11_cpx.FR.99FR-MP1307	----	P-----
B.US.NC7	----	----	H.CF.90CF056	----	P-----	11_cpx.GR.GR17	----	AP-----
B.US.NY5CG	Q----	V-----	J.SE.SE7022	----	V---V----	CONSENSUS-CPZ	hAGFIPapGQIREprG	
B.US.P896	----	----	J.SE.SE7887	----	V-----	CPZ.CD.CPZANT	----	VQA-L--T-
B.US.RF	----	----	K.BE.VI325	Q----	P-----	CPZ.CM.CAM3	----	V---L-A--
B.US.SF2	----	----	K.CD.EQTB11C	Q----	P---I----	CPZ.CM.CAM5	----	L---L-A--
B.US.WEAU160	Q----	V-----	K.CM.MP535	----	P-----	CPZ.GA.CPZGAB	----	L-----
B.US.WR27	----	----	MO.CM.97CAMP645MO	----	V---I----	CPZ.US.CPZUS	----	L-----
B.US.YU2	----	----	N.CM.YBF106	PV--LP--D--	----	CONSENSUS-01_AE	----	----
BF1.BR.93BR029-4	----	P-----	N.CM.YBF30	PV--LP--L-D--	----	01_AE.CF.90CF11697	----	----
CONSENSUS-C	hAGFIPapGQmREPRG	hAGFIPapGQmREPRG	O.CM.ANT70	PV--LP--I---T-	----	01_AE.CF.90CF402	----	----
C.BR.92BR025	----	V-----	O.CM.MVP5180	AM--LP--I---T-	----	01_AE.CF.90CF4071	----	----
C.BW.96BW01B22	----	V---L-G---	O.SN.99SE-MP1299	A---LPV--I---T-	----	01_AE.TH.93TH057	----	----
C.BW.96BW0402	Q----	V-----	O.SN.99SE-MP1300	A---LP--I---T-	----	01_AE.TH.93TH065	----	----
C.BW.96BW0502	Q----	V-----D	U.CD.-.83CD0031	----	P-----	01_AE.TH.93TH253	----	----
C.BW.96BW1104	----	V-----	CONSENSUS-02_AE	hAGFIPpGQmREPRG	----	01_AE.TH.93TH902	----	----
C.BW.96BW1210	----	V-----	01_AE.CF.90CF11697	----	P-----	01_AE.TH.94TH7091	----	----
C.BW.96BW15B03	----	----	01_AE.CF.90CF402	----	P-----	01_AE.TH.95TNIH047	----	----
C.BW.96BW1626	----	----	01_AE.CF.90CF4071	----	P-----	01_AE.TH.CM240	----	----
C.BW.96BW17A09	----	V-----D	01_AE.TH.93TH057	----	P-----	01_AE.TH.TH022	----	----
C.ET.ETH2220	----	V-----	01_AE.TH.93TH065	----	P-----	CONSENSUS-02_AG	hAGFIPpGQmREPRG	
C.IN.93IN101	----	----	01_AE.TH.93TH253	----	P-----	02_AG.FR.DJ263	Q----	V-----
C.IN.93IN904	----	----	01_AE.TH.93TH902	----	P-----	02_AG.FR.DJ264	----	P-----
C.IN.93IN905	----	I-----	01_AE.TH.94TH7091	----	P-----	02_AG.GH.G829	----	NP-----
C.IN.93IN999	----	----	01_AE.TH.95TNIH047	----	P-----	02_AG.NG.IBNG	----	P-----
C.IN.94INI11246	----	----	01_AE.TH.CM240	----	P-----	CONSENSUS-D	hAGFVAPGQmREPRG	
C.IN.95IN21068	----	L-----	01_AE.TH.TH022	----	P-----	D.CD.84ZR085	Q----	V-----
C.IN.AF209990	----	----	CONSENSUS-02_AG	hAGFIPpGQmREPRG	----	D.CD.ELI	----	P-----
CONSENSUS-D	hAGFVAPGQmREPRG	hAGFVAPGQmREPRG	02_AG.FR.DJ263	Q----	V-----	D.CD.NDK	----	P-----
D.CD.84ZR085	Q----	V-----	02_AG.FR.DJ264	----	P-----	D.CD.ZZz6	----	P-----
D.CD.ELI	----	----	02_AG.GH.G829	----	NP-----			
D.CD.NDK	----	V-----	02_AG.NG.IBNG	----	P-----			
D.CD.ZZz6	----	----		----	P-----			

p24 Epitopes 59-64

Epitope #	HLA	CONSENSUS	Epitope	HLA	CONSENSUS	Epitope	HLA	CONSENSUS
59	TSTLQEQIGWF	B*5701	B.AU.SC49	B.AU.VH	B.AU.SC49	TSTLQEQIGWF	B*5701	B.AU.VH
60	TSTLQEQIGWF	B*57.B*5801	B.CN.RL42	B.DE.D31	B.CN.RL42	TSTLQEQIGWF	B*57.B*5801	B.DE.D31
61	TSTVEEQIIV	B*5801	B.DE.HAN	B.ES.89SP061	B.DE.HAN	TSTVEEQIIV	B*5801	B.ES.89SP061
62	TSTLQEQIGW	B57	B.FR.HXB2	B.FR.HXB2	B.FR.HXB2	TSTLQEQIGW	B57	B.FR.HXB2
63	TSTVEEQIIV	B58	B.GA.OYI	B.GB.CAM1	B.GA.OYI	TSTVEEQIIV	B58	B.GB.CAM1
64	STLQEQIGW	B*5701 B*5801	B.GB.GB8	B.GB.MANC	B.GB.GB8	STLQEQIGW	B*5701 B*5801	B.GB.MANC
B.FR.HXB2	TSTLQEQIGWM		B.JP.JH31	B.KR.WK	B.JP.JH31	TSTLQEQIGWM		B.KR.WK
CONSENSUS-A	TSTpQEQIgwM		B.NL.3202A21	B.TW.TWCYS	B.NL.3202A21	TSTpQEQIgwM		B.TW.TWCYS
A.BY.97BL006	---x---		B.UNK.NL43E9	B.US.85WCIPR54	B.UNK.NL43E9	---x---		B.US.85WCIPR54
A.KE.Q23	---P---		B.US.AD8	B.US.BC	B.US.AD8	---P---		B.US.BC
A.SE.SE6594	---P---		B.US.DH123	B.US.JRCSF	B.US.DH123	---P---		B.US.JRCSF
A.SE.SE7253	---P---		B.US.JRFL	B.US.MNCG	B.US.JRFL	---P---		B.US.MNCG
A.SE.SE7535	---P---		B.US.NC7	B.US.NY5CG	B.US.NC7	---P---		B.US.NY5CG
A.SE.SE8538	---P---LQ---		B.US.P896	B.US.RF	B.US.P896	---P---LQ---		B.US.RF
A.SE.SE8891	---P---		B.US.SF2	B.US.WEAI160	B.US.SF2	---P---		B.US.WEAI160
A.SE.UGSE8131	---P---A---		B.US.WR27	B.US.YU2	B.US.WR27	---P---A---		B.US.YU2
A.UG.92UG037	---V---		B.FI.BR.93BR029-4		B.FI.BR.93BR029-4	---V---		
A.UG.U455	---N---					---N---		
A2.CD.97CDKTB48	---					---		
A2.CY.94CY017-41	---					---		
A2C.ZM.ZAMI174-21	---					---		
A2C.ZM.ZAMI184	---					---		
A2C.ZM.ZAM7116-17	---					---		
A2D.-.97KR004	---					---		
A2G.CD.97CDKPS8	---					---		
AC.ETE3099G	---					---		
AC.IN.21301	---A---					---A---		
AC.RW.92RW009	---A---					---A---		
AC.SE.SE9488	---N---A---					---N---A---		
ACD.SE.SE8603	---					---		
ACG.BE.VI1035	---					---		
AD.SE.SE6954	---					---		
AD.SE.SE7108	---I---					---I---		
ADHK.NO.97NOGIL3	---					---		
ADK.CD.MAL	---					---		
AG.BE.VI1197	---V---					---V---		
AG.NG.92NG003	---T---					---T---		
AGHU.GA.VI354	---T---					---T---		
AGU.CD.Z321	---					---		
AJ.BW.BW2117	---R---					---R---		
CONSENSUS-B	TSTLqeqIgwM					TSTLqeqIgwM		
B.AU.MBC18	---					---		
B.AU.MBC200	---					---		
B.AU.MBC925	---					---		
B.AU.MBCC54	---					---		
B.AU.MBCC98	---					---		
B.AU.MBCD36	---H---					---H---		

HIV CTL Epitope Alignments

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D_CD.ELI				
D_CD.NDK				
D_CD.ZZz6				
D_UG.94UG1141				
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F1_BE.V1850				
F1_BR.93BR020-1				
F1_BR.BZ162				
F1_CD.V1174				
F1_F1.FIN9363				
F1_FR.MP411				
F1_RW.V169				
F2_CM.MP255				
F2_CM.MP257				
F2_KU_BE.V11126				
G_BE.DRCBL				
G_FLH8793-1-1				
G_NG.92NG083				
G_SE.SE6165				
H_BE.V1991				
H_BE.V1997				
H_CF.90CF056				
J_SE.SE7022				
J_SE.SE7887				
K_BE.V1325				
K_CD.EQTB11C				
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				
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03_AB.RU.RU98001				
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04_cpx.GR.97PVMY				
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05_DF.BE.V1961				
06_cpx.AU.BFP90				
06_cpx.ML.95ML127				
06_cpx.ML.95ML84				
06_cpx.SN.97SE1078				
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10_CD.-.BFL07130				
10_CD.-.BFL11031				
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11_cpx.FR.99FR-MP1307				
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CPZ_CM.CAM5				
CPZ_GA.CPZGAB				
CPZ_US.CPZUS				
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01_AE.TH				

HIV CTL Epitope Alignments

B-AU.MBC98	----	C.IN.AF209990	V--D-----	01_AE.TH.TH022	----
B-AU.MBCD36	----	CONSENSUS-D	IPVGEIYKRWIIIGL	CONSENSUS--02_AG	IPVG?IYKRWI?LGL
B-AU.SC49	V-----	D.CD.84ZR085	-----V--	02_AG.FR.DJ263	-----D--
B-AU.VH	----	D.CD.ELI	-----V--	02_AG.FR.DJ264	-----D--
B-CN.RL42	----	D.CD.NDK	-----V--	02_AG.GH.G829	-----V--
B-DE.D31	----	D.CD.ZZ6	-----V--	02_AG.NG.IBNG	-----V--
B-DE.HAN	----	D.UG.94UG141	-----V--	02_AG.SE.SE7812	-----V--
B-ES.89SP061	----	CONSENSUS-F1	VPVGDIIYKRWIIIGL	02_AG.SN.98SEMP1211	-----D--
B-FR.HXB2	----	F1.BE.VI850	V--D-----	03_AB.RU.KAL153-2	-----D--
B-GA.OYI	----	F1.BR.93BR020-1	V--M-----	03_AB.RU.RU98001	-----D--
B-GB.CAMI	----	F1.BR.BZ162	V-----	04_cpx.CY.94CY032-3	V-----
B-GB.GB8	----	F1.CD.VI174	V-----	04_cpx.GR.97PVCH	-----D--
B-GB.MANC	----	F1.FI.FIN9363	V--D-----	04_cpx.GR.97PVMY	-----D--
B-JP.JH31	----	F1.FR.MP411	V--D-----	05_DF.BE.VI1310	-----D--
B-KR.WK	----	F1.RW.VI69	V--D-----	05_DF.BE.VI961	-----D--
B-NL.3202A21	----	F2.CM.MP255	V-----	06_cpx.AU.BFP90	-----D--
B-TW.TWCYS	----	F2.CM.MP257	V-----	06_cpx.ML.95ML127	V-----
B-UNK.NL43E9	----	F2.KU.BE.VII126	V-----	06_cpx.ML.95ML84	-----D--
B-US.85WCIPR54	----	G.BE.DRCBL	V-----	10_CD.-.BFL06129	-----D--
B-US.AD8	----	G.FI.HH8793-1-1	V-----	10_CD.-.BFL07130	-----D--
B-US.BC	----	G.NG.92NG083	V-----	10_CD.-.BFL11031	-----V--
B-US.DH123	----	G.SE.SE6165	V-----	11_cpx.CM.97CM-MP818	-----D--
B-US.DH123	----	H.BE.VI991	V--D-----	11_cpx.FR.99FR-MP1298	V-----R
B-US.JRCSF	----	H.BE.VI997	V--D-----	11_cpx.FR.99FR-MP1307	V-----D--
B-US.JRFL	----	H.CF.90CF056	V--D-----	11_cpx.GR.GR17	-----D--
B-US.MNCG	----	J.SE.SE7022	V-----	CONSENSUS-CPZ	IPVGDIIYRWWVIGL
B-US.NC7	----	J.SE.SE787	V-----	CPZ.CD.CPZANT	V--D-----M--
B-US.NY5CG	----	K.BE.VI325	V-----	CPZ.CM.CAM3	V-----R--VV--
B-US.P896	----	K.CD.EQTBIIC	V-----	CPZ.CM.CAM5	V-----R--VV--
B-US.RF	----	K.CM.MP535	V-----	CPZ.GA.CPZGAB	-----DV-R--V--
B-US.SF2	----	MO.CM.97CAMF645MO	V-----	CPZ.US.CPZUS	-----D--R--VV--
B-US.WEAU160	----	N.CM.YBF106	V--D--R--V--		
B-US.WR27	----	N.CM.YBF30	V--D--R--V--		
B-US.YU2	----	O.CM.ANT70	V--D--R--V--		
BFL.BR.93BR029-4	V-----	O.CM.MVP5180	V--D--R--V--		
CONSENSUS-C	VPVGDIIYKRWIIIGL	O.SN.99SE-MP1299	V--D--R--V--		
C.BR.92BR025	V--D-----	O.SN.99SE-MP1300	V--D--R--V--		
C.BW.96BW01B22	V--D-----	U.CD.-.83CD0031	V--D-----		
C.BW.96BW0402	V--D-----	CONSENSUS-01_AE	IPVGDIIYKRWIIIGL		
C.BW.96BW0502	V--D-----	01_AE.CF.90CF11697	-----D--		
C.BW.96BW1104	V--D-----	01_AE.CF.90CF402	-----K--		
C.BW.96BW1210	V--D-----	01_AE.CF.90CF4071	V-----		
C.BW.96BW15B03	V--D-----	01_AE.TH.93TH057	V-----		
C.BW.96BW1626	V--D-----	01_AE.TH.93TH065	V-----		
C.BW.96BW17A09	V--D-----	01_AE.TH.93TH253	V-----		
C.ET.ETH2220	V--D-----	01_AE.TH.93TH902	V-----		
C.IN.93IN101	V--D-----	01_AE.TH.94TH7091	V--D-----		
C.IN.93IN904	V--D-----	01_AE.TH.95TNIH047	V--S-----		
C.IN.93IN905	V--D-----	01_AE.TH.CM240	V--D-----		
C.IN.93IN999	V--D-----				
C.IN.94IN11246	V--D-----				
C.IN.95IN21068	V--D-----				

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Epitope #	Sequence	HLA	Source	Alignment
02_AG.SE.SE7812	-----V-----		ADK.CD.MAL	-----V-----
02_AG.SN.98SEMP1211	-----V-----		AG.BE.V11197	-----V-----
03_AB.RU.KAL153-2	-----V-----		AG.NG.92NG003	-----V-----
03_AB.RU.RU98001	-----V-----		AGHU.GA.V1354	-----V-----
04_cpx.CY.94CY032-3	-----T-----I	Bw62?	AGU.CD.Z321	-----V-----
04_cpx.GR.97PVCH	-----V-----	B27	AJ.BW.BW2117	-----V-----
04_cpx.GR.97PVMI	-----V-----	A33		
05_DF.BE.V11310	-----V-----	B27		
05_DF.BE.V1961	-----V-----	B27		
06_cpx.AU.BFP90	-----V-----	B*27		
06_cpx.ML.95ML127	-----V-----	B*2703		
06_cpx.ML.95ML84	-----V-----	B*2705		
06_cpx.SN.97SE1078	-----V-----	B*2705.B27		
10_CD.-BFL06129	-----V-----	B27		
10_CD.-BFL07130	-----V-----	B27		
10_CD.-BFL11031	-----V-----	B27		
11_cpx.CM.97CM-MP818	-----V-----	Pat-B*03		
11_cpx.FR.99FR-MP1298	-----R-----	B27		
11_cpx.FR.99FR-MP1307	-----R-----	A33		
11_cpx.GR.GR17	-----R-----	B62		
11_cpx.GR.GR17	-----R-----	B*1501		
11_cpx.GR.GR17	-----R-----	B62		
11_cpx.GR.GR17	-----R-----	B*5201		
11_cpx.GR.GR17	-----R-----	B52		
CONSENSUS - CPZ	YrRwvvVlGLNKVVrYcPv			
CPZ.CD.CPZANT	-----M-----V-x--V			
CPZ.CM.CAM3	-----R--VV-----V--C-V			
CPZ.CM.CAM5	-----R--VV-----V-K--C-V			
CPZ.GA.CPZGAB	-----R--V-----V--C-V			
CPZ.US.CPZUS	-----R--VV-----V-K--C-V			
A.KE.Q23	-----V-----		B.NL.3202A21	-----A-----
A.SE.SE6594	-----V-----		B.TW.TWCYS	-----V-----
A.SE.SE7253	-----V-----		B.UNK.NL43E9	-----V-----
A.SE.SE7535	-----V-----		B.US.85WCIPR54	-----V-----
A.SE.SE8538	-----V-----		B.US.AD8	-----S-----
A.SE.SE8891	-----V-----		B.US.BC	-----M-----
A.SE.UGSE8131	-----V-----		B.US.DH123	-----V-----
A.UG.92UG037	-----M-----		B.US.JRCSF	-----V-----
A.UG.U455	R-----		B.US.JRFL	-----V-----
A2.CD.97CDKTB48	-----V-----		B.US.MNCG	-----S-----
A2.CY.94CY017-41	-----V-----		B.US.NC7	-----I-----
A2C.ZM.ZAM174-21	-----V-----		B.US.NY5CG	-----S-----
A2C.ZM.ZAM184	-----V-----		B.US.P896	-----S-----
A2C.ZM.ZAM716-17	-----V-----		B.US.RF	-----I-----
A2D.-.97KR004	-----V-----		B.US.SF2	-----I-----
A2G.CD.97CDKP58	-----V-----		B.US.WEAU160	-----V-----
AC.ETE3099G	-----V-----		B.US.WR27	-----V-----
AC.IN.21301	-----V-----		B.US.YU2	-----V-----
AC.RW.92RW009	-----V-----		BFI.BR.93BR029-4	-----V-----
AC.SE.SE9488	-----V-----			
ACD.SE.SE8603	-----V-----			
ACG.BE.V11035	-----V-----			
AD.SE.SE6954	-----V-----			
AD.SE.SE7108	-----V-----			
ADHK.NO.97NOGIL3	-----V-----			
CONSENSUS - C	KRWiLlGLNKIVRMYSPTSII			
C.BR.92BR025	-----V-----			
C.BW.96BW01B22	-----V-----			
C.BW.96BW0402	-----V-----			
C.BW.96BW0502	-----V-----			

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02_AG.NG.IBNG	-----T-----	B.DE.D31	-----T-----
02_AG.SE.SE7812	-----T-D-----	B.DE.HAN	-----T-----
02_AG.SN.98SEMPI211	-----T-----	B.ES.89SP061	-----
03_AB.RU.KAL153-2	-----T-D-----	B.FR.HXB2	-----
03_AB.RU.RU98001	-----T-D-----	B.GA.OYI	-----D-----
04_cpx.CY.94CY032-3	-----T-----	B.GB.CAM1	-----
04_cpx.GR.97PVCH	-----T-----	B.GB.GB8	-----D-----
04_cpx.GR.97PVMY	-----T-D-----	B.GB.MANC	-----
05_DF.BE.V11310	-----T-----	B.JP.JH31	-----
05_DF.BE.V1961	-----D-----	B.KR.WK	-----
06_cpx.AU.BFP90	-----T-----	B.NL.3202A21	-----
06_cpx.ML.95ML127	-----T-----	B.TW.TWCYS	T-----D-----
06_cpx.ML.95ML84	-----T-----	B.UNK.NL43E9	-----
06_cpx.SN.97SE1078	-----T-----	B.US.85WCIPR54	-----
10_CD.-.BFL06129	-----D-----	B.US.AD8	-----
10_CD.-.BFL07130	-----D-----	B.US.BC	-----
10_CD.-.BFL11031	-----D-----	B.US.DH123	-----
11_cpx.CM.97CM-MP818	-----T-----	B.US.JRCSF	-----T-----
11_cpx.FR.99FR-MPI298	-----T-D-----	B.US.JRFL	-----
11_cpx.FR.99FR-MPI307	-----T-----	B.US.MNCG	-----R-----
11_cpx.GR.GR17	-----	B.US.NC7	-----
		B.US.NY5CG	-----
		B.US.P896	-----
		B.US.RF	-----D-----
		B.US.SF2	-----D-----
		B.US.WEAU160	-----T-----
		B.US.WR27	-----
		B.US.YU2	-----
		BF1.BR.93BR029-4	---T---D---
		CONSENSUS-C	AEQatQdVKNW
		C.BR.92BR025	---T---D---
		C.BW.96BW01B22	---T---D---
		C.BW.96BW0402	---S---T---
		C.BW.96BW0502	---T---D---
		C.BW.96BW1104	---S---
		C.BW.96BW1210	---T---D---
		C.BW.96BW15B03	---T---D---
		C.BW.96BW1626	---T---D---
		C.BW.96BW17A09	---T---D---
		C.ETH2220	---T---D---
		C.IN.93IN101	---T---D---
		C.IN.93IN904	---T---D---
		C.IN.93IN905	---T---D---
		C.IN.93IN999	---T---D---
		C.IN.94IN11246	---T---D---
		C.IN.95IN21068	---T---D---
		C.IN.AF209990	---T---D---
		CONSENSUS-B	aEQAsQeVKNw
		B.AU.MBC18	---T---
		B.AU.MBC200	-----
		B.AU.MBC925	-----D-----
		B.AU.MBCC54	-----
		B.AU.MBCC98	-----
		B.AU.MBCD36	-----
		B.AU.SC49	-----D-----
		B.AU.VH	-----
		B.CN.RL42	-----D-----
		CONSENSUS-A	AEQA+Q?VK?W
		A.BY.97BL006	---T---D---
		A.KE.Q23	---T---D---
		A.SE.SE6594	---T---G---
		A.SE.SE7253	---T---D---
		A.SE.SE7535	-----D-----
		A.SE.SE8538	---T---G---
		A.SE.SE8891	---T---G---
		A.SE.UGSE8131	---T---G---
		A.UG.92UG037	---T---G---
		A.UG.U455	---T---D---
		A2.CD.97CDKTB48	---T---
		A2.CY.94CY017-41	---T---
		A2C.ZM.ZAM174-21	---T---
		A2C.ZM.ZAM184	---T---
		A2C.ZM.ZAM716-17	---T---D---
		A2D.-.97KR004	---T---
		A2G.CD.97CDKPF58	---T---
		AC.EFE3099G	---T---D---
		AC.IN.21301	---T---D---
		AC.RW.92RW009	---T---D---
		AC.SE.SE9488	---T---D---
		ACD.SE.SE8603	---T---
		ACG.BE.V11035	---T---D---
		AD.SE.SE6954	---RD---
		AD.SE.SE7108	---T---G---
		ADHK.NO.97NOGIL3	-----
		ADK.CD.MAL	---T---
		AG.BE.V11197	---T---
		AG.NG.92NG003	---T---
		AGH.U.GA.V1354	---T---
		AGU.CD.Z321	---T---G---
		AJ.BW.BW2117	-----D-----
		CONSENSUS-qeV	RAEQAsqeV
		CPZ.US.CPZUS	-----P---
		CPZ.CD.CPZANT	-----P---
		CPZ.CM.CAM3	-----T---
		CPZ.CM.CAM5	-----T---
		CPZ.GA.CPZGAB	-----
		CPZ.US.CPZUS	-----P---

HIV CTL Epitope Alignments

CONSENSUS-D	CONSENSUS-02_AG	AEQAsQdVKNW	AEQATQeVKNW	Epitope #	HLA
D.CD.84ZR085	02_AG.FR.DI263	-----R	-----R	112	EQASQEVKNWMT
D.CD.ELI	02_AG.FR.DI264	-----D	-----T	113	EQASQEVKNW
D.CD.NDK	02_AG.GH.G829	-----D	-----T	114	EQASQEVKNW
D.CD.Z2Z6	02_AG.NG.IBNG	-----G	-----T	115	EQASQEVKNW
D.UG.94UG1141	02_AG.SE.SE7812	-----D	-----T	116	EQASQEVKNW
CONSENSUS-F1	02_AG.SN.98SEMP1211	-----G	-----T	B.FR.HXB2	EQASQEVKNWMT
F1.BE.VI850	03_AB.RU.KAL153-2	-----D	-----T	CONSENSUS-A	EQATQ?VK?WMT
F1.BR.93BR020-1	03_AB.RU.RU98001	-----G	-----T	A.IBY.97BL006	-----T-D
F1.BR.BZ162	04_cpx.CY.94CY032-3	-----G	-----T	A.KE.Q23	-----T-D
F1.CD.VI174	04_cpx.GR.97PVCH	-----G	-----T	A.SE.SE6594	-----T---G
F1.FI.FIN9363	04_cpx.GR.97PVMY	-----G	-----T	A.SE.SE7253	-----T-D
F1.FR.MP411	05_DF.BE.VI1310	-----G	-----T	A.SE.SE7535	-----D
F1.RW.VI69	05_DF.BE.VI961	-----E	-----T	A.SE.SE8538	-----T---G
F2.CM.MP255	06_cpx.AU.BFP90	-----T	-----T	A.SE.SE8891	-----T---G
F2.CM.MP257	06_cpx.ML.95ML127	-----T	-----T	A.SE.UGSE8131	-----T---G
F2.KU.BE.VI1126	06_cpx.ML.95ML84	-----T	-----T	A.UG.92UG037	-----T---G
G.BE.DRCBL	10_CD.-BFL06129	-----S	-----D	A2.CD.97CDKTB48	-----T
G.FI.HH8793-1-1	10_CD.-BFL07130	-----T	-----D	A2.CY.94CY017-41	-----T
G.NG.92NG083	10_CD.-BFL11031	-----T	-----D	A2.CZ.M.ZAM174-21	-----T
G.SE.SE6165	11_cpx.CM.97CM-MP818	-----D	-----D	A2.CZ.M.ZAM184	-----T
H.BE.VI991	11_cpx.FR.99FR-MP1298	-----T	-----T	A2.CZ.M.ZAM716-17	-----T-D
H.BE.VI997	11_cpx.FR.99FR-MP1307	-----T	-----T	A2D.-97KR004	-----T
H.CF.90CF056	CONSENSUS-CPZ	-----T	-----P	A2G.CD.97CDKPS8	-----T
J.SE.SE7022	CPZ.CD.CPZANT	-----T	-----P--A	AC.ETE.3099G	-----T-D
J.SE.SE7887	CPZ.CM.CAM3	-----T	-----T	AC.IN.21301	-----T-D
K.BE.VI325	CPZ.CM.CAM5	-----T	-----T	AC.RW.92RW009	-----D
K.CD.EQTBIIC	CPZ.GA.CPZGAB	-----T	-----P	AC.SE.SE9488	-----T-D
K.CM.MP535	CPZ.US.CPZUS	-----T	-----P--T-	ACD.SE.SE8603	-----T
MO.CM.97CAMP645MO	CONSENSUS-01_AE	-----T	-----S	ACG.BE.VII035	-----T-D
N.CM.YBF106	AEQATQeVKNW	-----T	-----S	AD.SE.SE6954	-----RD
N.CM.YBF30	01_AE.CF.90CF11697	-----T	-----T	AD.SE.SE7108	-----T---G
O.CM.ANT70	01_AE.CF.90CF402	-----T	-----T	ADHK.NO.97NOGIL3	-----T
O.CM.MVP5180	01_AE.CF.90CF4071	-----T	-----T	ADK.CD.MAL	-----T
O.SN.99SE-MP1299	01_AE.TH.93TH057	-----T	-----T	AG.BE.VII197	-----T
O.SN.99SE-MP1300	01_AE.TH.93TH057	-----T	-----T	AG.NG.92NG003	-----T
U.CD.-.83CD0031	01_AE.TH.93TH065	-----T	-----T	AGHU.GA.VI354	-----T
CONSENSUS-01_AE	01_AE.TH.93TH902	-----T	-----T	AGU.CD.Z321	-----T---G
01_AE.CF.90CF11697	01_AE.TH.94TH7091	-----T	-----T	AJ.BW.BW2117	-----D
01_AE.CF.90CF4071	01_AE.TH.95TNIH047	-----T	-----T	CONSENSUS-B	EQAsQeVKNWmt
01_AE.TH.93TH057	01_AE.TH.CM240	-----T	-----T	B.AU.MBC18	-----T
01_AE.TH.93TH065	01_AE.TH.TH022	-----T	-----T	B.AU.MBC200	-----D
01_AE.TH.93TH902		-----T	-----T	B.AU.MBC925	-----D
01_AE.TH.94TH7091		-----T	-----T	B.AU.MBCC54	-----D
01_AE.TH.95TNIH047		-----T	-----T	B.AU.MBCC98	-----D
01_AE.TH.CM240		-----T	-----T	B.AU.MBCD36	-----D
01_AE.TH.TH022		-----T	-----T	B.AU.SC49	-----D

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Epitope #	HLA	VKNWMTETLL	B8	-----	-----
B.FR.HXB2		VKNWMTETLL			
CONSENSUS-A		VK?WMTeTLL			
A.BY.97BL006		-----D-----			
A.KE.Q23		-----G-----			
A.SE.SE6594		-----G-----			
A.SE.SE7253		-----G-----			
A.SE.SE7535		-----G-----			
A.SE.SE8538		-----G-----			
A.SE.SE8891		-----G-----			
A.SE.UGSE8131		-----G-----			
A.UG.92UG037		-----G-----			
A.UG.U455		-----D-----			
A2.CD.97CDKTB48		-----D-----			
A2.CY.94CY017-41		-----D-----			
A2C.ZM.ZAM174-21		-----D-----			
A2C.ZM.ZAM184		-----D-----			
A2C.ZM.ZAM716-17		-----D-----			
A2D.-.97KR004		-----D-----			
A2G.CD.97CDKP58		-----D-----			
AC.ETE3099G		-----D-----			
AC.IN.21301		-----D-----			
AC.RW.92RW009		-----D-----			
AC.SE.SE9488		-----D-----			
ACD.SE.SE8603		-----D-----			
ACG.BE.VII035		-----D-----			
AD.SE.SE6954		-----G-----			
AD.SE.SE7108		-----D-----			
ADHK.NO.97NOGIL3		-----D-----			
ADK.CD.MAL		-----D-----			
AG.BE.VII197		-----D-----			
AG.NG.92NG003		-----D-----			
AGHU.GA.VI354		-----G-----			
AGU.CD.Z321		-----D-----			
AJ.BW.BW2117		-----D-----			
CONSENSUS-B		VKNWMTETLL			
B.AU.MBC18		-----D-----			
B.AU.MBC200		-----D-----			
B.AU.MBC925		-----D-----			
B.AU.MBCC54		-----D-----			
B.AU.MBCC98		-----D-----			
B.AU.MBCD36		-----D-----			
B.AU.SC49		-----D-----			
B.AU.VH		-----D-----			
B.CN.RL42		-----D-----			
B.DE.D31		-----D-----			
B.DE.HAN		-----D-----			
B.ES.89SP061		-----D-----			
B.FR.HXB2		-----D-----			
B.GA.OYI		-----D-----			
B.GB.CAM1		-----D-----			
B.GB.GB8		-----D-----			
B.GB.MANC		-----D-----			
B.JP.JH31		-----D-----			
B.KR.WK		-----D-----			
B.NL.3202A21		-----D-----			
B.TW.TWCYS		-----D-----			
B.UNK.NL43E9		-----D-----			
B.US.85WCIPR54		-----D-----			
B.US.AD8		-----D-----			
B.US.BC		-----D-----			
B.US.DH123		-----D-----			
B.US.JRC5F		-----D-----			
B.US.JRFL		-----RT-----			
B.US.MNCG		-----D-----			
B.US.NC7		-----D-----			
B.US.NY5CG		-----D-----			
B.US.P896		-----D-----			
B.US.RF		-----F-----			
B.US.SF2		-----D-----			
B.US.WE160		-----D-----			
B.US.WR27		-----D-----			
B.US.YU2		-----D-----			
BFL.BR.93BR029-4		-----D-----			
CONSENSUS-C		VKNWMTETLL			
C.BR.92BR025		-----D-----			
C.BW.96BW01B22		-----D-----			
C.BW.96BW0402		-----D-----			
C.BW.96BW0502		-----D-----			
C.BW.96BW1104		-----D-----			
C.BW.96BW1210		-----D-----			
C.BW.96BW15B03		-----D-----			
C.BW.96BW1626		-----D-----			
C.BW.96BW17A09		-----D-----			
C.ETETH2220		-----D-----			
C.IN.93IN101		-----D-----			
C.IN.93IN904		-----D-----			
C.IN.93IN905		-----D-----			
C.IN.93IN999		-----D-----			
C.IN.94IN11246		-----D-----			
C.IN.95IN21068		-----D-----			
C.IN.AF209990		-----D-----			
CONSENSUS-D		VKNWMTETLL			
D.CD.84ZR085		-----D-----			
D.CD.ELI		-----D-----			
D.CD.NDK		-----D-----			
D.CD.Z2Z6		-----G-----			
D.UG.94UG1141		-----D-----			
CONSENSUS-F1		VK?WMTdtLL			
F1.BE.VI850		-----G-----D-----			
F1.BR.93BR020-1		-----G-----D-----			
F1.BR.BZ162		-----G-----D-----			
F1.CD.VII74		-----G-----D-----			
F1.FLFIN9363		-----G-----D-----			
F1.FR.MP411		-----S-----			
F1.RW.VI69		-----G-----D-----			
F2.CM.MP255		-----G-----			
F2.CM.MP257		-----G-----			
F2KU.BE.VII126		-----D-----			
G.BE.DRCBL		-----S-----D-----			
G.FI.HH8793-1-1		-----G-----D-----			
G.NG.92NG083		-----G-----D-----			
G.SE.SE6165		-----G-----D-----			
H.BE.VI991		-----D-----			
H.BE.VI997		-----D-----			
H.CF.90CF056		-----D-----			
J.SE.SE7022		-----D-----			
J.SE.SE7887		-----D-----			
K.BE.VI325		-----D-----			
K.CD.EQTBI1C		-----D-----			
K.CM.MP535		-----D-----			
MO.CM.97CAMP645MO		-----D-----			
N.CM.YBF106		-----D-----			
N.CM.YBF30		-----D-----			
O.CM.ANT70		-----D-----			
O.CM.MVP5180		-----D-----			
O.SN.99SE-MPI299		-----D-----			
O.SN.99SE-MPI300		-----D-----			
U.CD.-.83CD0031		-----D-----			
CONSENSUS-01_AE		VKNWMTETLL			
01_AE.CF.90CF11697		-----D-----			
01_AE.CF.90CF402		-----D-----			
01_AE.CF.90CF4071		-----D-----			
01_AE.TH.93TH057		-----D-----			
01_AE.TH.93TH065		-----D-----			
01_AE.TH.93TH253		-----D-----			
01_AE.TH.93TH902		-----D-----			
01_AE.TH.94TH7091		-----D-----			
01_AE.TH.95TNIH047		-----D-----			
01_AE.TH.CM240		-----D-----			
01_AE.TH.TH022		-----D-----			
CONSENSUS-02_AG		VKNWMTETLL			
02_AG.FR.DJ263		-----R-----			
02_AG.FR.DJ264		-----D-----			
02_AG.GH.G829		-----D-----			
02_AG.NG.IBNG		-----D-----			

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Epitope #	HLA	GPgHKARvL	GPgHKARvL	GPgHKARvL
B.FR.HXB2	B7	GPgHKARvL	GPgHKARvL	GPgHKARvL
CONSENSUS--A				
A.BY.97BL006		-----x-x		
A.KE.Q23		-----		
A.SE.SE6594		-----		
A.SE.SE7253		-----		
A.SE.SE7535		-----S		
A.SE.SE8538		-----		
A.SE.SE8891		-----		
A.SE.UGSE8131		-----S		
A.UG.92UG037		-----		
A.UG.U455		-----		
A2.CD.97CDKTB48		-----		
A2.CY.94CY017-41		-----S		
A2C.ZM.ZAM174-21		-----A		
A2C.ZM.ZAM184		-----		
A2C.ZM.ZAM716-17		-----S		
A2D.-.97KR004		-----S		
A2G.CD.97CDKP58		-----S		
AC.ETE3099G		-----S		
AC.IN.21301		-----S		
AC.RW.92RW009		-----		
AC.SE.SE9488		-----S		
ACD.SE.SE8603		-----		
ACG.BE.VI1035		-----S		
AD.SE.SE6954		-----		
AD.SE.SE7108		-----		
ADHK.NO.97NNOGIL3		-----		
ADK.CD.MAL		-----S		
AG.BE.VII1197		-----		
AG.NG.92NG003		-----S		
AGHU.GA.VI354		-----		
AGU.CD.Z321		-----S		
CONSENSUS--B		GPgHKARvL	GPgHKARvL	GPgHKARvL
B.AU.MBC18		-----S		
B.AU.MBC200		-----		
B.AU.MBC925		-----		
B.AU.MBCC54		-----		
B.AU.MBCC98		-----		
B.AU.MBCD36		-----		
B.AU.SC49		-----S		
B.AU.VH		-----I		
B.CN.RL42		-----		
B.DE.D31		-----S		
B.DE.HAN		-----		
B.ES.89SP061		-----		
B.FR.HXB2		-----		
B.GA.OYI		-----		
B.GB.CAMI		-----		
B.GB.GB8		-----		
B.GB.MANC		-----S		
B.JP.JH31		-----I		
B.KR.WK		-----		
B.NL.3202A21		-----		
B.TW.TWCYS		-----S		
B.UNK.NL43E9		-----		
B.US.85WCIPR54		-----S		
B.US.AD8		-----		
B.US.BC		-----		
B.US.DH123		-----		
B.US.JRCSF		-----		
B.US.JRFL		-----		
B.US.MNCG		-----		
B.US.NC7		-----		
B.US.NY5CG		-----		
B.US.P896		-----		
B.US.RF		-----S		
B.US.SF2		-----		
B.US.WEAU160		-----		
B.US.WR27		-----x		
B.US.YU2		-----		
BF1.BR.93BR029-4		-----		
CONSENSUS--C		GPgHKARvL	GPgHKARvL	GPgHKARvL
C.BR.92BR025		-----		
C.BW.96BW01B22		-----S		
C.BW.96BW0402		-----S		
C.BW.96BW0502		-----		
C.BW.96BW1104		-----S		
C.BW.96BW1210		-----S		
C.BW.96BW15B03		-----		
C.BW.96BW1626		-----		
C.BW.96BW17A09		-----S		
C.ETE.TH2220		-----A		
C.IN.93IN101		-----		
C.IN.93IN904		-----S		
C.IN.93IN905		-----		
C.IN.93IN999		-----		
C.IN.94IN11246		-----S		
C.IN.95IN21068		-----K		
C.IN.95IN21068		-----S		
C.IN.AF209990		-----S		
CONSENSUS--D		GPgHKARvL	GPgHKARvL	GPgHKARvL
D.CD.84ZR085		-----S		
D.CD.ELI		-----S		
D.CD.NDK		-----		
D.CD.ZZZ6		-----S		
D.UG.94UG1141		-----S		
CONSENSUS--F1		GPgHKARvL	GPgHKARvL	GPgHKARvL
F1.BE.VI850		-----S		
F1.BR.93BR020-1		-----S		
F1.BR.BZ162		-----		
F1.CD.VII74		-----		
F1.FILFIN9363		-----I		
F1.FR.MP411		-----		
F1.RW.VI69		-----		
F2.CM.MP255		-----I		
F2.CM.MP257		-----S		
F2KU.BE.VII126		-----A		
G.BE.DRCBL		-----S		
G.FI.HH8793-1-1		-----		
G.NG.92NG083		-----S		
G.SE.SE6165		-----S		
H.BE.VI991		-----S		
H.BE.VI997		-----S		
H.CF.90CF056		-----S		
J.SE.SE7022		-----		
J.SE.SE7887		-----		
K.BE.VI325		-----I		
K.CD.EQTB11C		-----		
K.CM.MP535		-----S		
MO.CM.97CAMP645MO		-----S		
N.CM.YBF106		-----A		
N.CM.YBF30		-----A		
O.CM.ANT70		-----T		
O.CM.MVP5180		-----T		
O.SN.99SE-MP1299		-----T		
O.SN.99SE-MP1300		-----T		
U.CD.-.83CD0031		-----S		
CONSENSUS--01_AE		GPgHKARvL	GPgHKARvL	GPgHKARvL
01_AE.CF.90CF11697		-----		
01_AE.CF.90CF402		-----		
01_AE.CF.90CF4071		-----		
01_AE.TH.93TH057		-----S		
01_AE.TH.93TH065		-----S		
01_AE.TH.93TH253		-----S		
01_AE.TH.93TH902		-----S		
01_AE.TH.94TH7091		-----S		
01_AE.TH.95TNIH047		-----S		
01_AE.TH.CM240		-----S		
01_AE.TH.TH022		-----S		
CONSENSUS--02_AG		GPgHKARvL	GPgHKARvL	GPgHKARvL
02_AG.FR.DJ263		-----		
02_AG.FR.DJ264		-----		
02_AG.GH.G829		-----		
02_AG.ING.IBNG		-----		
02_AG.SE.SE7812		-----S		
02_AG.SN.98SEMP1211		-----		