Table 14: Vpr

HXB2 Location	Author Location	Sequence	Immunogen	Species(HLA)	References
Vpr(58–66)	Vpr(58–66 LAI)	AIIRILQQL		human(A*0201)	[Brander & Goulder(2001), Altfeld (2001)]
	• C. Brander notes this is an A*0201 epitope				

Table 15: Rev

HXB2 Location	Author Location	Sequence	Immunogen	Species(HLA)	References
Rev(9–23)	Rev(9–23 HXB2)	DEELIRTVRLIKLLY	HIV-1 infection	human( )	[Blazevic (1995)]
	• Induces both Th and CTL activities, no HLA restriction analysis performed				
Rev(12–31)	Rev(11–30 SF2)	LLKAVRLIKFLYQSNPPPNF	HIV-1 infection	human( )	[Lieberman (1997a)]
	• Of 25 patients, most had CTL-specific for more than 1 HIV-1 protein • Only one subject had CTL that could recognize vaccinia-expressed LAI Rev • This subject had a CTL response to this peptide, and was HLA-A2, A24, B13, B35				
Rev(14–23)	Rev(13–23 Clade B)	KAVRLIKFLY		human(B*5801, B*5701)	[Brander & Goulder(2001), Addo (2001)]
	• C. Brander notes this is a B*5801 epitope				
Rev(25–39)	Rev(25–39 HXB2)	SNPPPNPEGTRQARR	HIV-1 infection	human( )	[Blazevic (1995)]
	• Induces both Th and CTL activities, no HLA restriction analysis performed				
Rev(33–48)	Rev(33–48 HXB2)	GTRQARRNRRRRWRER	HIV-1 infection	human( )	[Blazevic (1995)]
	• Induces both Th and CTL activities, no HLA restriction analysis performed				
Rev(41–56)	Rev(41–56 HXB2)	RRRRWRERQRQIHSIS	HIV-1 infection	human( )	[Blazevic (1995)]
	• Induces both Th and CTL activities				
Rev(55–63)	Rev(55–63 LAI)	ISERILSTY	HIV-1 infection	human(A1)	[van Baalen (1997)]
	• Predicted to be an HLA-A1 epitope based on anchor residues 2S and 9Y • Both forms LSGWL(L or I)STY, with intact anchors, were found in an HLA-A1+ individual with Rev-responsive CTL • An HLA-A1 individual who did not make a Rev response had lost the C-term anchor, ISGWILS(T or N)S • 3/7 long-term non-progressors and 0/5 progressors were positive for HLA-B57 (associated with prolonged survival) • CTLp frequencies to Rev and Tat were inversely correlated with rapid progression to AIDS, but not Gag, RT or Nef				

HXB2 Location	Author Location	Sequence	Immunogen	Species(HLA)	References
Rev(67–75)	( )	SAEPVPLQL		(B14)	[Brander & Goulder(2001), van Baalen & Gruters(2000)]
Rev(67–75)	Rev(67–75 IIIB)	SAEPVPLQL	HIV-1 infection	human(B14, Cw8)	[Van Baalen (1998)]
	• The Rev-specific CTL response studied here was from an individual infected with HIV-1 for more than 12 years without developing symptoms – Rev and Tat are expressed early and CTL activity against these proteins has been correlated with long-term survival • The CTL clone TCC108 specific for this epitope was studied *in vitro* • CTLs added immediately after infection suppressed viral production, indicative of CTL interference with viral production prior to lysis – CTL-mediated lysis occurred after the onset of progeny viral release, but prior to peak viral production • Rapid selection of a E69K mutation, which abolished CTL, recognition was observed • The epitope was originally listed as B14, but Cw8 and B14 are in linkage disequilibrium, and in this case were not distinguished (Pers. Comm., Christian Brander, 1999)				
Rev(67–75)	( )	SAEPVPLQL		(Cw5)	[Brander & Goulder(2001), Addo (2001)]
Rev( )	Rev( )		DNA constructs encoding HIV-1 genes Nef, Rev or Tat	human( )	[Calarota (1999)]
	• 9/9 HIV-1+ subjects were given one of three DNA vaccinations for Nef, Rev or Tat, and novel proliferative and CTL responses were generated • The Nef DNA immunization induced the highest and most consistent CTLp activity, IFN-γ production, and IL-6 and IgG responses • Highly active antiretroviral treatment (HAART) did not induce new HIV-specific CTL responses but reduced viral load, while DNA vaccination induced new immune responses but did not reduce viral load – thus this is a potentially complementary and promising combination				
Rev( )	Rev( )		DNA vaccine pCMV160/Rev	murine(H-2^d)	[Ishii (1997)]
	• pCMV160/Rev is a DNA vaccine candidate carrying gp160 and Rev linked to a cytomegalovirus (CMV promotor) • pCMV160/Rev given in conjunction with a cationic liposome gave enhanced DTH, Ab and CTL responses				
Rev( )	Rev( )		DNA vaccine pcRev + CD40 expression plasmid	murine(H-2^d)	[Ihata (1999)]
	• pcRev DNA i.m. vaccination in BALB/c mice induced Th1, Th2 and IgG responses, and enhanced the CTL response to Rev, but did not induce mucosal IgA				