

Table 11: **Pol**

HXB2 Location	Author Location	Sequence	Immunogen	Species(HLA)	References
Pol()	RT(Gag/Pol)()		DNA gag/pol, vif, and env vaccine	murine()	[Kim (1997b)]
			<ul style="list-style-type: none"> • A gag/pol, vif or gp160 DNA vaccine, when delivered in conjunction with the plasmid encoding the co-stimulatory molecules B7 and IL-12, gave a dramatic increase in both the cytotoxic and proliferative responses in mice • When IL-12 was present, CTL response could be detected even without <i>in vitro</i> stimulation 		
Pol()	RT()		HIV infection	human()	[Trickett (1998)]
			<ul style="list-style-type: none"> • 12 HIV-1 infected patients were re-infused with their own lymphocytes, cryopreserved from an earlier time point in the infection • Improvement in CD4+ and CD8+ T cells were seen in 7/12, and an increase in the CTL response to Pol was seen in one patient 		
Pol()	RT()		HIV-1 infection	human()	[Froebel (1997)]
			<ul style="list-style-type: none"> • Two HIV-1 infected children with contrasting disease courses were followed longitudinally – one died of AIDS, the other is a long term non-progressor • Reactivity against Gag, Pol, Env and Tat proteins was tested by PBMC bulk cultured cells reacting with protein expressed in vaccinia constructs in autologous EBV transformed B cells • The child who progressed consistently had CTL against Pol and Tat • The long term non-progressing child had no detectable CTL, but was heterozygous for a mutation in the CCR5 receptor and for HLA-B49, which has been shown to be associated with slower progression 		
Pol()	RT(191–215)		HIV-1 infection	human(polyclonal)	[Haas (1997)]
			<ul style="list-style-type: none"> • Polyclonal CTL recognition switched from RT 191-215 to RT 514-524 when AZT therapy selected for the resistance mutation, and presumably escape variant RT 215 T to Y 		
Pol()	RT()		HIV-1 infection	human()	[Buseyne (1998a)]
			<ul style="list-style-type: none"> • This study showed a correlation with strong CTL memory and greater breadth of response in 7-12 months old infants, and remaining AIDS free for the first year of life, having higher absolute CD4 and CD8 cells, and lower viral load 		
Pol()	RT()		HIV-1 infection	human()	[Buseyne (1998b)]
			<ul style="list-style-type: none"> • In infants with positive CTL responses, most responses showed cross-clade reactivity with somewhat diminished recognition of epitopes from different subtypes [Buseyne (1998a)] 		
Pol()	Pol()		HIV-1 infection	human()	[Betts (1997)]
			<ul style="list-style-type: none"> • 6/8 individuals from Zambia infected with C clade virus had CTL that were able to make response to B clade HIV-1 IIIB vaccinia expressed Gag, Pol and Env proteins • A vigorous cross-clade response was not limited to a particular protein, and the level of recognition of different proteins varied among the six patients 		

HIV CTL Epitopes

CTL

HXB2 Location	Author Location	Sequence	Immunogen	Species(HLA)	References
Pol()	RT()		HIV-1 infection	human()	[De Maria (1997)]
					<ul style="list-style-type: none"> • CD3+ cells that also carry a natural killer cell receptor (NKR+) can exhibit down regulation of T-cell function • Anti-NKR IgM MAb masked this inhibitory function and increased HIV-1 specific CTL activity in phytohemagglutinin-activated PBMC cultured in the presence of IL-2 from 3/5 patients, and in one other case anti-NKR MAb brought HIV-1 specific CTL activity to detectable levels
Pol()	Pol()		HIV-1 exposure	human()	[Goh (1999)]
					<ul style="list-style-type: none"> • 13/37 exposed uninfected individuals with repeated high risk sexual exposure had HIV-1 specific CTL against Env, Gag , Pol, or a combination of proteins – CTL activity was correlated with a CCR5 WT genotype • In this group, the highest CTLp frequencies were directed at Gag, but the most common response was to Env and four individuals had responses to multiple HIV-1 proteins
Pol()	Pol()		Canary pox -HIV vaccine	human()	[Evans (1999)]
					<ul style="list-style-type: none"> • A Canary pox vaccine expressing gp120, gp41, Gag, Protease, Nef and Pol CL epitopes gave rise to CTL that could be detected in 61% of the volunteers – responses to Gag, Env, Nef and Pol were detected 3-6 months after the last vaccination
Pol()	Gag/Pol()		DNA vaccine + CD80 and CD86 expression cassettes	chimpanzee()	[Kim (1998)]
					<ul style="list-style-type: none"> • The study explores the use of co-stimulatory molecules co-expressed with an HIV-1 immunogen in a DNA vaccine to enhance the immune response – co-exprssion of CD86, but not CD80, dramatically increased both HIV Env and Gag/Pol specific CTL and Th proliferative responses