

Table 6: **Gag**

HXB2 Location	Author Location	Sequence	Immunogen	Species(HLA)	References
Gag()	p24()		p24-VLP virus-like particle	human()	[Klein (1997)] <ul style="list-style-type: none"> • Immunization of HIV+ people with an HIV-1 p17/p24 Ty virus-like particle (p24-VLP) resulted in a marginal, short-lived increased proliferative response to p24 and p17 and a transient elevation in viral load • Two of four subjects that received 500 or 1000 µg of p24-VLP had an increase in gag-specific CTL
Gag()	Gag()		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 was seen in 7/12, and an increase in the CTL response to Gag was seen in one patient
Gag()	Gag()		HIV infection	human()	[Legrand (1997)] <ul style="list-style-type: none"> • 17 recently infected patients were tested for CTL response to HIV proteins Env, Gag, Pol, Rev, Nef, Vif and Tat • An early response (within a month following PI) was noted in 87% of the subjects to Gag, 75% to Env, and 50% to Nef • Early responses to Pol, Rev, Vif and Tat were rare
Gag()	Gag()		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 IIB 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
Gag()	Gag()		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
Gag()	Gag()		HIV-1 canary pox vaccine	human()	[Belshe (1998)] <ul style="list-style-type: none"> • The live canary pox vaccine ALVAC-HIV(vCP205) carrying MN gp120, LAI gp41, Gag and Protease, and boosted with SF-2 rpg120 was given to HIV-1 seronegative volunteers – HIV-specific Env or Gag CD8+ CTL were detected in 64% of the volunteers
Gag()	Gag()		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

HIV CTL Epitopes

CTL

HXB2 Location	Author Location	Sequence	Immunogen	Species(HLA)	References
Gag()	Gag()		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)]
Gag()	Gag()		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
Gag()	Gag()		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
Gag()	p17()		HIV-1 infection	human()	[Kuiken (1999)]
					<ul style="list-style-type: none"> A correlation between conserved regions of p17 or Nef and CTL epitope density was noted – the authors suggest that this may be due to a biological reason such as epitope processing, or may possibly be an artifact of experimental strategy for epitope definition such that conserved epitopes would tend to be identified because they would be more likely to be cross-reactive with the test reagents In contrast to p17 and Nef, p24 is a more conserved protein and known epitopes are evenly distributed across p24
Gag()	Gag()		HIV-DNA prime - HIV vaccinia boost	Macaca nemestrina()	[Kent (1998)]
					<ul style="list-style-type: none"> Priming with an HIV-DNA vaccine and boosting with a vaccinia construct induced greater levels of HIV T cell immunity than either vaccine alone. The proliferative response to Env and Gag after the DNA vaccination had a mean SI of 1.5-4, but after boosting with rHIV-fowlpox virus, there was a 6-17 fold increase in the mean SI for HIV Gag and Env. The T help response happened despite a fall in antibody titers, suggesting that the Th response was primarily Th1, not Th2. The CTL response was also enhanced.