

Table 2: **p24**

Location	WEAU	Sequence	Immunogen	Species(HLA)	References
p24(133–147 IIB B10)	p24(1–15)	PIVQNIQGQMVHQAI	HIV infection	human	[Wahren et al.(1989b), Wahren et al.(1989a)]
	NOTES:				
					<ul style="list-style-type: none"> Peptides were identified that commonly evoke T-cell responses – 62% of 90 HIV+ people had a T-cell response to this peptide
p24(133–154 SF2)	p24(1–22)	PIVQNIQGQMVHQAI SPRTLNA	HIV-1 infection	human	[Rosenberg et al.(1997)]
	NOTES:				
					<ul style="list-style-type: none"> While anti-HIV CD4 T helper responses are characteristically undetectable in chronic infections, strong p24-specific proliferative responses were inversely correlated with low viral load in 10 chronically infected people The dominant proliferative response in one of two long term survivors was to this peptide
p24(143–157)	p24(11–26)	VHQAI SPRTLNAWVKC	Peptide stimulation <i>in vitro</i>	human	[Bedford et al.(1997)]
	NOTES:				
					<ul style="list-style-type: none"> This epitope elicits a primary proliferative response in PBMC from uninfected donors Matches 3/3 anchor residues for HLA DR: VHQAI SPRT
p24(153–167)	p24(21–36)	NAWVKVVEEKAFSPEK	Peptide stimulation <i>in vitro</i>	human	[Bedford et al.(1997)]
	NOTES:				
					<ul style="list-style-type: none"> This epitope elicits a primary proliferative response in PBMC from uninfected donors
p24(163–177)	p24(31–46)	AFSPEVIPMFSALSEC	Peptide stimulation <i>in vitro</i>	human (A*0201)	[Bedford et al.(1997)]
	NOTES:				
					<ul style="list-style-type: none"> This epitope elicits a primary proliferative response in PBMC from uninfected donors This peptide contains a CTL epitope identified in HIV-positive patients Peptide binds to HLA A*0201 and causes regulation of class I expression on T2 cells Matches 3/3 anchor residues for HLA DR: VIPMFSALS
p24(163–184 SF2)	p24(31–52)	AFSPEVIPMFSALSEGATPQDL	HIV-1 infection	human	[Rosenberg et al.(1997)]
	NOTES:				
					<ul style="list-style-type: none"> Low viral load correlated with strong HIV-1-specific proliferative response A proliferative response to this epitope was detected in two long term survivors

HIV Helper-T Cell Epitopes

Location	WEAU	Sequence	Immunogen	Species(HLA)	References
p24(173-187)	p24(41-56)	SALSEGATPQDLNTMC	Peptide stimulation <i>in vitro</i>	human	[Bedford et al.(1997)]
	NOTES:				
					<ul style="list-style-type: none"> This epitope elicits a primary proliferative response in PBMC from uninfected donors
p24(180-194)	p24(48-62)	TPQDLNTMLNTVGGH	HIV-1 infection	human	[Adams et al.(1997)]
	NOTES:				
					<ul style="list-style-type: none"> One of four immunogenic Gag peptides used in study of proliferative response to p24 Homology to an SIV epitope recognized by macaque T-cells T cells from 8 of 19 HIV+ individuals responded to this epitope Improved assay system (increase in culture time to 8 days and addition of IL-2 to cultures) gave increased detection of proliferative response
p24(183-197)	p24(51-66)	DLNTMLNTYGGHQAAC	Peptide stimulation <i>in vitro</i>	human	[Bedford et al.(1997)]
	NOTES:				
					<ul style="list-style-type: none"> This epitope elicits a primary proliferative response in PBMC from uninfected donors
p24(203-217)	p24(71-86)	ETTNEEAAEWDRVHPC	Peptide stimulation <i>in vitro</i>	human	[Bedford et al.(1997)]
	NOTES:				
					<ul style="list-style-type: none"> This epitope elicits a primary proliferative response in PBMC from uninfected donors
p24(208-222 IIB B10)	p24(76-90)	EAAEWDRVHPVHAGP	HIV infection	human	[Wahren et al.(1989b), Wahren et al.(1989a)]
	NOTES:				
					<ul style="list-style-type: none"> 12 gag and 18 env T-cell sites were identified that could commonly evoke T-cell responses
p24(208-217)	p24(76-85)	EAAEWDRVHP	HIV-1 infection	human	[Adams et al.(1997)]
	NOTES:				
					<ul style="list-style-type: none"> One of four immunogenic Gag peptides used in study of the proliferative response to p24 T cells from 11 of 24 HIV+ individuals responded to this epitope Improved assay system (increase in culture time to 8 days and addition of IL-2 to cultures) gave increased detection of proliferative response
p24(215-229 SF2)	p24(81-95)	DRVHPVHAGPIAPGQ	SF2 p24:T _y -VLP	macaque	[Mills et al.(1990)]
	NOTES:				
					<ul style="list-style-type: none"> Responses to 3 T-cell and multiple linear B-cell epitopes were found in vaccinated macaques

HIV Helper-T Cell Epitopes

Location	WEAU	Sequence	Immunogen	Species(HLA)	References
p24(213-234 SF2)	p24(81-102)	DRVHPVHAGPIAPGQMR-EPRGS	HIV-1 infection	human	[Rosenberg et al.(1997)]
	NOTES:	<ul style="list-style-type: none"> • White anti-HIV CD4 T helper responses are characteristically undetectable in chronic infections, strong p24-specific proliferative responses were inversely correlated with low viral load in 10 chronically infected people • The dominant proliferative response in one of two long term survivors was to this peptide 			
p24(219-233 BRU)	p24(87-101)	HAGPIAPGQMRPRG	peptide	murine(H-2 ^b)	[Vaslin et al.(1994)]
	NOTES:	<ul style="list-style-type: none"> • Peptide G2: could prime for <i>in vitro</i> immunoproliferative responses and for subsequent IgG responses 			
p24(228-235 LAI)	p24(96-103)	MREPRGSD?	HIV infection	human	[Schrier et al.(1989)]
	NOTES:	<ul style="list-style-type: none"> • Stimulates T-cell proliferation in HIV-infected donors 			
p24(228-242 IIIB B10)	p24(96-110)	MREPRGSKIAGTTST	HIV infection	human	[Wahren et al.(1989b), Wahren et al.(1989a)]
	NOTES:	<ul style="list-style-type: none"> • 12 gag and 18 env T-cell sites were identified that could commonly evoke T-cell responses 			
p24(235-249 SF2)	p24(101-115)	GSDIAGTSTLQEQI	SF2 p24:Ty-VLP	macaque	[Mills et al.(1990)]
	NOTES:	<ul style="list-style-type: none"> • Responses to 3 T-cell and multiple linear B-cell epitopes were found in vaccinated macaques – defined by T-cell clone 			
p24	p24(101-116)	GSDIAGTSTLQEQIC	Peptide stimulation <i>in vitro</i>	human	[Bedford et al.(1997)]
	NOTES:	<ul style="list-style-type: none"> • This epitope elicits a primary proliferative response in PBMC from uninfected donors 			
p24(243-264 SF2)	p24(111-132)	LQEQIGWMTNPPVGEIYKR	HIV-1 infection	human	[Rosenberg et al.(1997)]
	NOTES:	<ul style="list-style-type: none"> • Low viral load correlated with strong HIV-1-specific proliferative response • A proliferative response to this epitope was detected in two long term survivors 			

HIV Helper-T Cell Epitopes

Location	WEAU	Sequence	Immunogen	Species(HLA)	References
p24(253-267)		NPPIPVGEIYKRWIIC	Peptide stimulation <i>in vitro</i>	human	[Bedford et al.(1997)]
	NOTES:		<ul style="list-style-type: none"> This epitope elicits a primary proliferative response in PBMC from uninfected donors 		
p24(263-284 SF2)		KRWILLGLNKIVRMYSPTSILD	HIV-1 infection	human	[Rosenberg et al.(1997)]
	NOTES:		<ul style="list-style-type: none"> Low viral load correlated with strong HIV-1-specific proliferative response A proliferative response to this epitope was detected in two long term survivors 		
p24(267-286)		ILGLNKIVRMYSPTSILDIR	HIV-1 infection	human	[Adams et al.(1997)]
	NOTES:		<ul style="list-style-type: none"> One of four immunogenic Gag peptides used in study of the proliferative response to p24 8 of 24 HIV+ individuals responded to this epitope Improved assay system (increase in culture time to 8 days and addition of IL-2 to cultures) gave increased detection of proliferative response 		
p24(265-279 SF2)		KRWILLGLNKIVRMYSPTSILDIR	SF2 p24:Ty-VLP	macaque	[Mills et al.(1990)]
	NOTES:		<ul style="list-style-type: none"> Responses to 3 T-cell and multiple linear B-cell epitopes were found in vaccinated macaques – defined by T-cell clone 		
p24(273-287)		IVRMYSPTSILDIRQC	Peptide stimulation <i>in vitro</i>	human	[Bedford et al.(1997)]
	NOTES:		<ul style="list-style-type: none"> This epitope elicits a primary proliferative response in PBMC from uninfected donors Matches 3/3 anchor residues for HLA DR: IVRMYSPTS 		
p24(282-301)		ILDIRQGPKEPRDYVDRFY?	HIV infection	human	[Schrier et al.(1989)]
	NOTES:		<ul style="list-style-type: none"> Stimulates T-cell proliferation in HIV-infected donors 		

HIV Helper-T Cell Epitopes

Location	WEAU	Sequence	Immunogen	Species(HLA)	References
p24(278-292 IIB B10)	p24(146-160)	SPTSILDIRQGPKEP	HIV infection	human	[Wahren et al.(1989b), Wahren et al.(1989a)]
	NOTES:				<ul style="list-style-type: none"> • 12 gag and 18 env T-cell sites were identified that could commonly evoke T-cell responses
p24(283-297)	p24(151-166)	LDIRQGPKEPRDYVC	Peptide stimulation <i>in vitro</i>	human	[Bedford et al.(1997)]
	NOTES:				<ul style="list-style-type: none"> • This epitope elicits a primary proliferative response in PBMC from uninfected donors
p24(287-309)	p24(155-177)	QGPKPEPRDYVDRFYKT-LRAEQA?	Peptide immunization	murine	[Nakamura et al.(1997)]
	NOTES:				<ul style="list-style-type: none"> • Mice immunized with this peptide generated proliferative responses, CTLs as well as antibodies • This immunogenic domain is from a highly conserved region of p24
p24(287-306)	p24(156-174)	QPKPEPRDYVDRFYKTLRA	HIV-1 infection	human	[Adams et al.(1997)]
	NOTES:				<ul style="list-style-type: none"> • One of four immunogenic Gag peptides used in study of the proliferative response to p24 • T cells from 5 of 21 HIV+ individuals responded to this epitope • Improved assay system (increase in culture time to 8 days and addition of IL-2 to cultures) gave increased detection of proliferative response
p24(288-302 IIB B10)	p24(156-170)	GPKPEPRDYVDRFYK	HIV infection	human	[Wahren et al.(1989b), Wahren et al.(1989a)]
	NOTES:				<ul style="list-style-type: none"> • 12 gag and 18 env T-cell sites were identified that could commonly evoke T-cell responses
p24(313-327)	p24(181-196)	VKNWMTETLLVQNANC	Peptide stimulation <i>in vitro</i>	human	[Bedford et al.(1997)]
	NOTES:				<ul style="list-style-type: none"> • This epitope elicits a primary proliferative response in PBMC from uninfected donors • Matches 3/3 anchor residues for HLA DR: VKNWMTETLL

HIV Helper-T Cell Epitopes

Location	WEAU	Sequence	Immunogen	Species(HLA)	References
p24	p24		p24-VLP virus-like particle	human	[Kelleher et al.(1998)]
	NOTES:				
					<ul style="list-style-type: none"> • Immunization of HIV+ people with a p24-VLP virus-like particle did not significantly impact CD4+ lymphocyte count, viral load, or p24 antibody titre • Immunization with p24-VLP showed a modest, short-lived increased proliferative response to p24
p24	p24		p24-VLP virus-like particle	human	[Klein et al.(1996)]
	NOTES:				
					<ul style="list-style-type: none"> • Immunization of HIV+ people with a 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
p24	p24		gp120 depleted HZ321	human	[Moss et al.(1998)]
	NOTES:				
					<ul style="list-style-type: none"> • Immunization with gp120 depleted HZ321 virus (REMUNETM) triggered an increase in lymphocyte proliferative response to native p24, a clade B virus and clade E viral antigens – Z321 is clade A in env and clade G in gag. [Moss et al.(1998)]