Supplementary material for:

Rational design of MPER lipopetides containing chemical modifications for HIV-1 vaccination
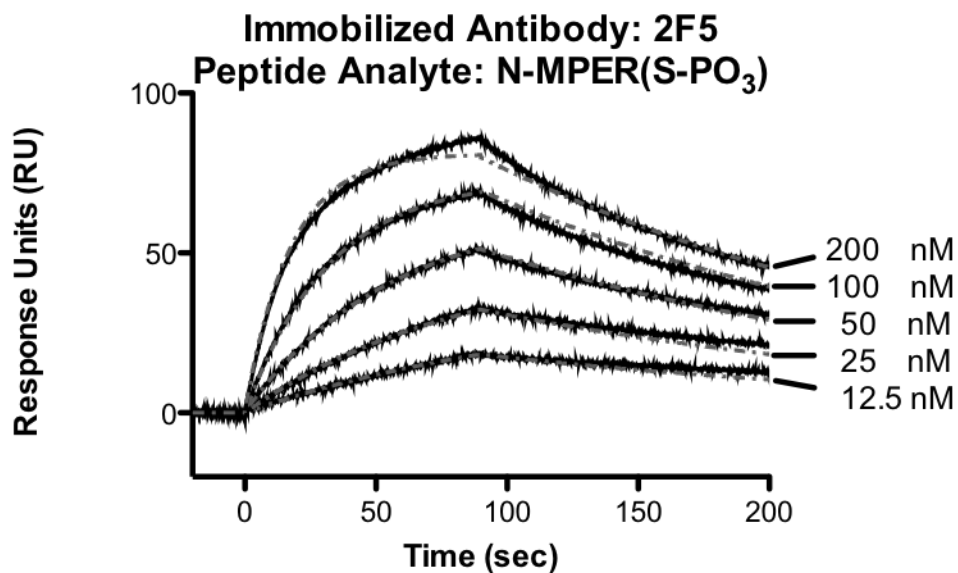
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Figure S1: Representative surface plasmon resonance sensogram data: N-MPER(S-PO$_3$)

BIAcore binding data. Overlaid sensorgrams of N-MPER(S-PO$_3$) at concentrations ranging from 200nM to 12.5 nM interacting with monoclonal antibody, 2F5, immobilized on a Series S CM5 sensor chip. Antibody immobilization was ~4000 with 90 second analyte injection time and 110 second wash with running buffer (Hepes Buffered Saline containing 0.01% tween-20) before regeneration with 2M guanadinium hydrochloride.

Figure S2: CD spectra of modified and unmodified peptides in liposomal formulations
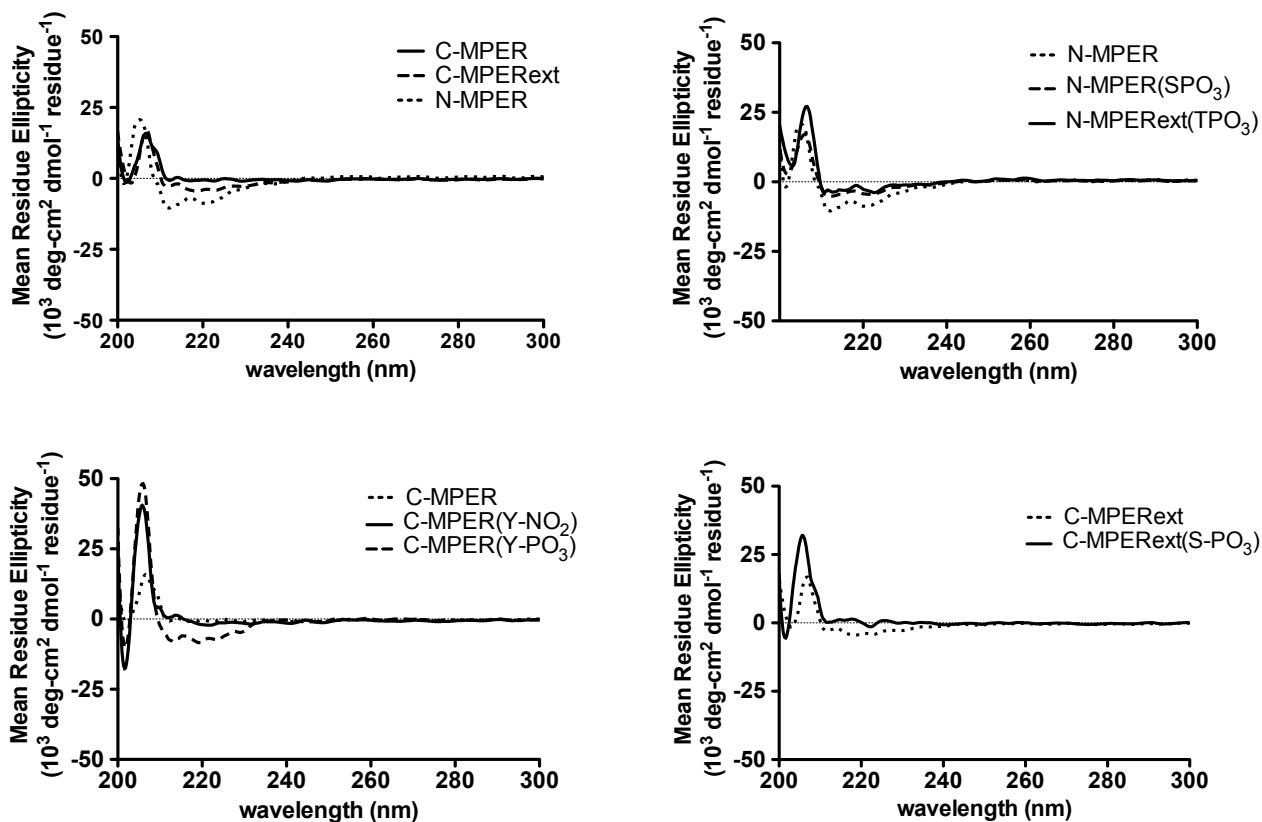
Circular Dichroism of Liposomal Lipopeptides. Each line corresponds to an average of three scans.

Liposomes in the absence of lipopeptides have been subtracted from background. Wavelengths are in nm.

Figure S3: Reactivity of endpoint sera against side chain modified lipopeptide immunogens
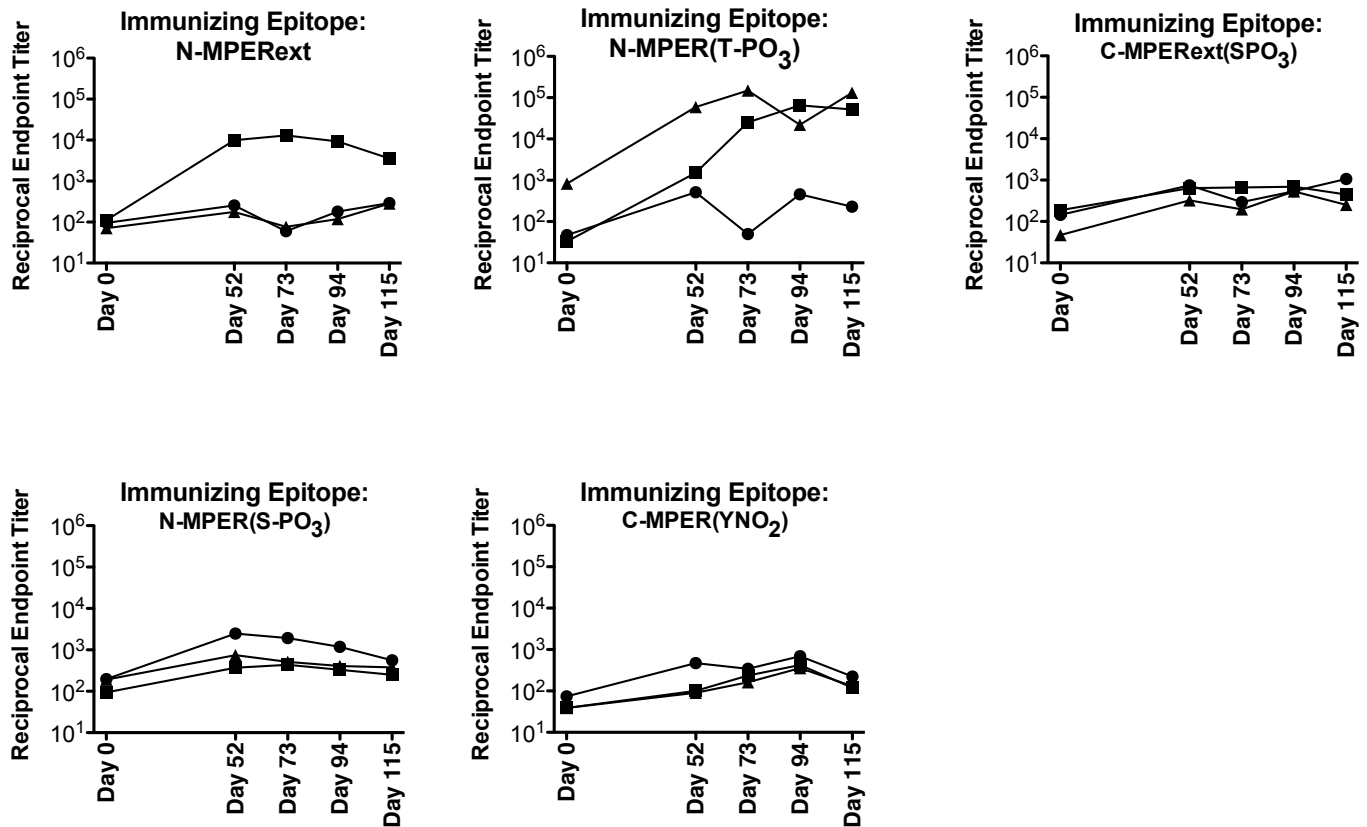
Endpoint reciprocal titers of immunized rabbits over time. Each line corresponds to endpoint reciprocal antibody titers of one rabbit against the respective immunogen over time. Each symbol corresponds to a single animal and values are the average of duplicate ELISAs.

Figure S4: Day 115 Rabbit reciprocal endpoint titers verse different modified immunogens
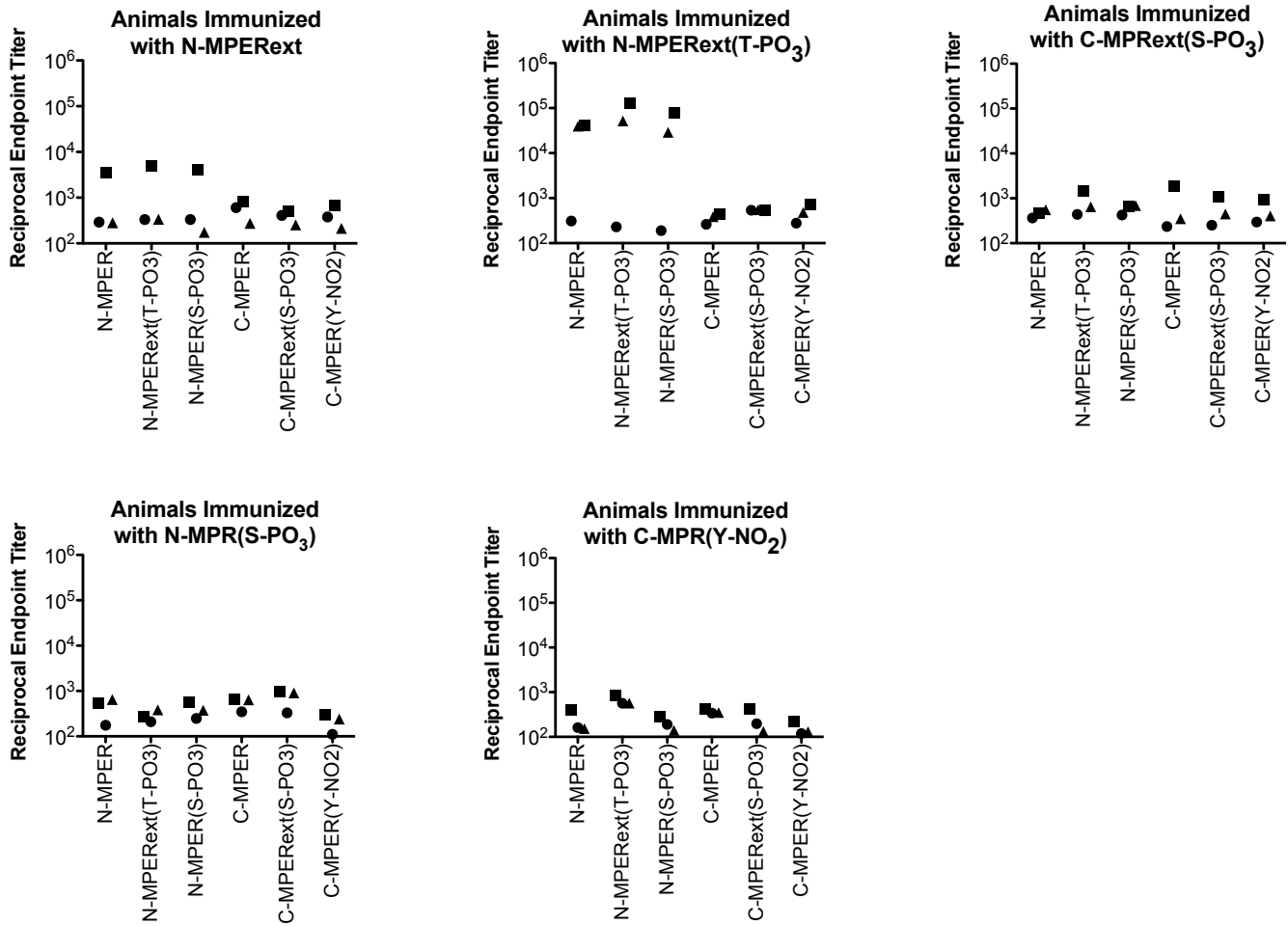
Endpoint reciprocal titers of immunized rabbits. Each series corresponds to day 115 antibody titers for one rabbit against each immobilized peptide on the X-axis. Lines are the average values of duplicate ELISA runs.

Table S1: Rabbit antisera viral neutralization data

			ID50 in TZM-bl cells		ID50 in A3R5.7 cells			
		Bleed Day	**SVA-MLV (ID#2642)**	**SF162.LS (ID#1721)**	**SC22.3C2.LucR.T2A.ecto Clade B Tier 2 (ID#3868)**	**RHPA.LucR.T2A.ecto Clade B Tier 2 (ID#4523)**	**CH77.LucR.T2A.ecto Clade C Tier 1 (ID#4393)**	**CH58.LucR.T2A.ecto Clade C Tier 1B (ID#3825)**
N-MPERext	1	0	<20	<20	35	<20	231	83
		115	<20	<20	35	24	426	87
	2	0	<20	<20	29	<20	315	66
		115	<20	<20	29	<20	175	65
	3	0	<20	<20	63	25	196	113
		115	24	<20	47	28	145	59
N-MPERext(T-PO₃)	1	0	<20	<20	31	<20	195	68
		115	<20	<20	32	34	170	70
	2	0	<20	<20	22	<20	263	58
		115	<20	<20	31	<20	342	85
	3	0	<20	<20	21	<20	370	76
		115	<20	<20	29	<20	1166	79
N-MPER(S-PO₃)	1	0	<20	<20	<20	<20	513	58
		115	<20	<20	27	22	451	72
	2	0	<20	<20	36	<20	311	97
		115	<20	<20	<20	23	70	38
	3	0	<20	<20	30	20	518	80
		115	<20	<20	35	26	380	67
C-MPER(Y-NO₂)	1	0	<20	<20	<20	<20	39	<20
		115	<20	<20	42	23	322	90
	2	0	<20	<20	26	21	176	60
		115	<20	<20	33	26	161	52
	3	0	<20	<20	27	<20	149	50
		115	<20	<20	31	23	117	51
C-MPERext(S-PO₃)	1	0	<20	<20	25	<20	408	86
		115	<20	<20	36	21	363	85
	2	0	<20	<20	27	<20	1219	113
		115	<20	<20	33	<20	623	74
	3	0	<20	<20	24	<20	110	40
		115	<20	<20	28	<20	82	38