

Supplemental Table 1: Stimulation index in proliferation assay

Dose ($\mu\text{g}/\text{peptide}$)	Patient #	Time point	E6.1	E6.2	E6.3	E6.4	E7.1	E7.2	MRM
1	1	Baseline	0.6	0.6	0.3	0.2	0.5	0.8	3.8
		Post vac 2	0.5	1.1	0.3	0.3	0.4	0.6	4.8
		Post vac 3	0.7	2.1	0.6	0.5	0.5	0.9	17.4
		Follow-up	0.6	1.0	0.4	0.5	0.4	0.5	17.8
	2	Baseline	1.7	3.8	0.9	6.0	8.1	1.9	71.3
		Post vac 2	1.3	5.0	1.4	8.1	2.3	1.7	241.0
		Post vac 3	1.2	2.4	1.1	3.9	2.3	1.7	240.4
		Follow-up	0.9	1.5	0.4	1.5	1.0	1.0	92.5
	3	Baseline	0.7	1.3	0.4	2.8	1.6	1.3	65.8
		Post vac 2	0.4	0.6	0.2	0.3	0.5	0.4	14.1
		Post vac 3	4.9	10.0	1.6	3.0	3.0	4.3	164.6
		Follow-up	2.8	2.3	1.1	1.7	2.3	2.0	54.2
	4	Baseline	0.7	0.6	0.7	0.5	0.7	0.7	0.7
		Post vac 2							
		Post vac 3	0.2	0.4	0.3	0.2	0.4	0.4	4.2
		Follow-up	0.3	0.5	0.3	0.2	0.5	0.5	5.6
5	Baseline	0.8	0.7	0.9	1.1	0.9	0.9	1.5	
	Post vac 2	0.9	0.8	0.7	0.9	1.0	0.9	1.5	
	Post vac 3	0.8	0.9	0.6	0.7	0.6	1.0	2.1	
	Follow-up	1.1	1.0	0.6	0.6	0.7	1.2	7.6	
6	Baseline	0.4	2.4	0.3	0.3	0.4	2.5	4.6	
	Post vac 2	0.2	0.6	0.3	0.1	0.3	0.5	4.8	
	Post vac 3	0.6	2.4	0.6	0.6	0.8	2.2	99.0	
	Follow-up	1.5	2.3	1.1	1.1	1.1	2.0	181.7	
5	7	Baseline	0.5	0.9	0.3	0.5	0.4	0.9	22.2
		Post vac 2	0.2	0.4	0.2	0.2	0.4	0.4	13.7
		Post vac 3	0.2	0.6	0.2	0.3	0.3	0.5	35.9
		Follow-up	0.6	0.8	0.6	0.4	0.6	1.1	33.0
	8	Baseline	1.0	3.0	1.1	0.8	0.9	1.8	54.8
		Post vac 2	1.3	3.5	2.9	2.2	1.0	2.3	374.9
		Post vac 3	1.2	2.1	1.2	1.7	1.1	1.4	11.3
		Follow-up	1.3	1.7	1.6	1.3	1.5	1.5	99.1
	9	Baseline	0.8	1.4	0.6	0.8	0.6	0.8	43.7
		Post vac 2	2.6	8.3	0.8	0.9	0.7	1.5	134.8
		Post vac 3	0.7	2.7	1.1	0.9	1.0	1.3	33.4
		Follow-up	1.0	1.9	0.9	1.0	0.7	1.6	60.6
10	Baseline	1.1	0.8	0.3	0.2	0.4	1.7	51.1	
	Post vac 2	0.5	1.1	0.3	0.4	0.2	0.9	71.9	
	Post vac 3	0.5	1.9	0.7	0.3	0.5	1.0	133.3	
	Follow-up	0.8	1.2	0.7	0.9	1.0	1.2	115.3	
11	Baseline	1.2	5.1	0.2	0.2	0.4	1.1	17.2	
	Post vac 2	0.8	4.8	1.5	0.8	0.5	1.9	23.9	
	Post vac 3	3.6	11.8	1.7	1.7	1.1	2.7	37.7	
	Follow-up	1.2	5.0	0.9	0.7	0.8	2.4	127.5	
12	Baseline	1.4	4.0	1.3	1.4	1.3	1.8	47.8	
	Post vac 2	1.3	3.2	0.7	1.9	1.5	1.4	73.0	
	Post vac 3	1.5	4.5	1.0	1.2	1.1	1.5	60.6	
	Follow-up	1.1	3.8	0.9	0.6	1.0	1.1	89.4	

Dose ($\mu\text{g}/\text{peptide}$)	Patient #	Time point	E6.1	E6.2	E6.3	E6.4	E7.1	E7.2	MRM
20	13	Baseline	0.7	1.0	0.4	0.5	0.5	1.1	20.3
		Post vac 2	0.7	1.8	0.6	0.4	0.5	0.7	15.5
		Post vac 3	4.7	1.6	1.3	0.8	1.4	1.9	5.9
		Follow-up	0.9	1.9	0.9	0.9	0.9	1.0	17.4
	14	Baseline	0.3	0.6	0.2	0.1	0.5	0.5	1.8
		Post vac 2	0.5	1.6	0.6	0.8	0.6	0.9	2.9
		Post vac 3	0.3	0.8	0.6	0.4	0.9	0.6	2.4
		Follow-up	0.4	0.8	0.4	0.3	0.4	0.6	5.1
	15	Baseline	0.5	1.1	0.5	1.2	0.6	0.7	7.6
		Post vac 2	1.1	8.9	2.2	10.7	0.8	1.6	32.0
		Post vac 3	1.4	7.7	1.6	9.9	0.8	1.0	32.4
		Follow-up	0.9	2.5	1.1	1.5	1.0	1.2	57.5
	16	Baseline	0.6	1.4	0.3	1.3	0.9	1.1	2.3
		Post vac 2	0.3	1.2	0.4	2.8	0.6	0.9	1.8
		Post vac 3	0.4	0.5	0.3	0.8	0.3	0.6	2.2
		Follow-up	0.4	1.1	0.4	0.8	0.5	0.8	2.8
	17	Baseline	0.4	0.9	0.5	0.4	0.8	0.7	31.9
		Post vac 2	0.7	9.7	3.6	8.2	0.8	1.2	22.7
		Post vac 3	0.8	21.2	9.2	9.7	1.2	0.6	36.6
		Follow-up	0.8	5.7	5.0	7.9	1.0	1.3	11.0
18	Baseline								
	Post vac 2	0.8	0.8	0.8	1.0	0.9	1.0	5.2	
	Post vac 3								
	Follow-up	0.3	0.5	0.3	0.2	0.4	0.7	4.3	
50	19	Baseline							
		Post vac 2	1.3	75.6	12.7	48.8	1.1	1.3	115.2
		Post vac 3	0.8	57.1	8.7	35.8	1.0	1.1	64.1
		Follow-up	1.0	31.0	13.4	22.7	1.1	1.0	26.9
	20	Baseline	1.1	2.6	0.8	1.0	1.0	1.6	7.7
		Post vac 2	1.0	2.4	1.1	1.1	0.9	1.6	15.2
		Post vac 3	0.9	3.0	1.4	1.7	1.0	1.4	14.2
		Follow-up	1.1	2.0	1.5	0.9	1.0	1.5	39.3
	21	Baseline	0.6	0.8	0.6	0.3	0.6	1.3	0.9
		Post vac 2	0.5	2.3	0.4	1.3	0.5	0.9	1.1
		Post vac 3	1.3	4.6	1.3	4.3	1.4	1.8	2.1
		Follow-up	2.4	19.2	2.7	15.7	2.8	3.6	3.0
	22	Baseline							
		Post vac 2	0.9	2.3	0.9	1.0	1.1	0.7	13.3
		Post vac 3	0.9	1.7	1.0	1.0	1.0	1.2	2.0
		Follow-up	1.3	2.2	1.2	1.1	1.0	1.4	1.8
	23	Baseline	1.1	1.2	1.2	0.6	0.8	1.3	4.2
		Post vac 2	1.1	7.6	2.7	8.7	1.1	1.4	3.2
		Post vac 3	1.1	4.0	1.8	2.9	1.1	1.2	2.5
		Follow-up	1.3	3.8	2.6	3.8	1.4	1.5	3.6
24	Baseline	0.9	1.7	1.0	1.8	0.8	1.1	13.1	
	Post vac 2	1.2	6.3	2.3	7.8	1.8	1.6	26.4	
	Post vac 3	1.0	5.1	1.6	8.9	1.2	1.4	14.6	
	Follow-up	1.1	1.7	1.3	3.1	1.1	1.0	3.5	
25	Baseline	1.0	1.4	0.9	1.0	1.1	1.3	51.3	
	Post vac 2	1.3	20.4	5.1	14.0	1.4	1.5	41.4	
	Post vac 3	0.9	5.5	3.7	4.2	1.1	1.0	5.8	
	Follow-up	1.1	6.3	4.0	4.2	1.3	1.1	9.3	

The vaccine peptides E6₇₁₋₉₅ and E6₁₂₇₋₁₅₈) are represented in peptide pool E6.2 (covering E6₄₁₋₉₅) and E6.4 (covering E6₁₀₉₋₁₅₈), however, peptide pool E6.3 (covering E6₈₅₋₁₂₂) also partly harbors the sequences of 11 amino acids of the first vaccine peptide. The grey shaded peptide pools indicate therefore the peptide pools covering the vaccine peptides. A value in bold indicates a positive response (a stimulation index of at least 3 and 6 out of 8 wells above the cut-off value). Memory response mix (MRM) is a mixture of common microbial recall antigens.

Supplemental Table 2: Cytokine production in proliferation assay.

Dose ($\mu\text{g}/\text{peptide}$)	Patient #	Time point	Cytokine	E6.1	E6.2	E6.3	E6.4	E7.1	E7.2	MRM		
1	1	Baseline	IFN γ	0	0	0	0	0	0	10.27		
			TNF α	0	0	0	0	0	0	10.60		
			IL-10	0	0	0	0	0	0	0		
			IL-5	0	0	0	0	0	0	101.68		
		Post vac 2	IFN γ	0	0	0	0	0	0	3.46		
			TNF α	0	0	0	0	0	0	5.64		
			IL-10	0	0	0	0	0	0	0.25		
			IL-5	0	0	0	0	0	0	15.79		
		Post vac 3	IFN γ	0	0	0	0	0	0	11.34		
			TNF α	0	0	0	0	0	0	9.85		
			IL-10	0	0	0	0	0	0	0		
			IL-5	0	0.27	0	0	0	0	69.16		
		Follow-up	IFN γ	0	0	0	0	0	0	50.31		
			TNF α	0	0	0	0	0	0	28.58		
			IL-10	0	0	0	0	0	0	3.83		
			IL-5	0	0	0	0	0	0	64.74		
		2	2	Baseline	IFN γ	0	0	0	4.41	17.16	0	72.53
					TNF α	0	0	0	0	0	0	11.75
IL-10	0				0	0	0.36	1.83	0.60	2.09		
IL-5	0				0	0	0	0	0	24.20		
Post vac 2	IFN γ			0	0	0	12.80	0	0	948.78		
	TNF α			0	0	0	0	0	0	124.37		
	IL-10			0	0	0	0	0	1.38	2.95		
	IL-5			0	0	0	0	0	0	36.03		
Post vac 3	IFN γ			0	0	0	22.99	15.52	0	896.65		
	TNF α			0	0	0	0	0	0	261.43		
	IL-10			0	0	0	0	0	0.48	0		
	IL-5			0	0	0	0	0	0	77.02		
Follow-up	IFN γ			0	0	0	0	0	0	44.52		
	TNF α			0	0	0	0	0	0	19.59		
	IL-10			0	0	0	0	0	0	0		
	IL-5			0	0	0	0	0	0	34.81		
3	3			Baseline	IFN γ	0	0	0	0	0	0	360.39
					TNF α	0	0	0	0	0	0	135.62
		IL-10	0		0	0	0	0	0	7.75		
		IL-5	0		0	0	0	0	0	332.86		
		Post vac 2	IFN γ	0	0	0	0	0	0	253.3		
			TNF α	0	0	0	0	0	0	63.00		
			IL-10	0	1.06	0	0	0	0	0.15		
			IL-5	0	0	0	0	0	0	163.99		
		Post vac 3	IFN γ	0	0	0	0	0	0	269.36		
			TNF α	0	0	0	0	0	0	43.12		
			IL-10	0	0.81	0	0	0	0.15	4.67		
			IL-5	0	0.56	0	0	0	0	116.75		
		Follow-up	IFN γ	0	0	0	0	0	0	393.79		
			TNF α	0	0	0	0	0	0	95.09		
			IL-10	0	0	0	0	0	2.67	2.67		
			IL-5	0	0	0	0	0	0	124.43		

Dose ($\mu\text{g}/\text{peptide}$)	Patient #	Time point	Cytokine	E6.1	E6.2	E6.3	E6.4	E7.1	E7.2	MRM		
1	4	Baseline	IFN γ	0	0	0	0	0	0	0		
			TNF α	0	0	0	0	0	0	0		
			IL-10	0	0	0	0	0	0	0		
			IL-5	0	0	0	0	0	0	0		
		Post vac 3	IFN γ	0	0	0	0	0	0	5.97		
			TNF α	0	0	0	0	0	0	6.43		
			IL-10	0	3.27	0	0	0	0	0		
		Follow-up	IL-5	0	0	0	0	0	0	0	101.68	
			IFN γ	0	0	0	0	0	0	7.25		
			TNF α	0	0	0	0	0	0	9.25		
			IL-10	2.82	5.09	2.7	1.86	3.98	3.20	2.58		
			IL-5	0	0	0	0	0	0	38.14		
		5	5	Baseline	IFN γ	0	0	0	0	0	0	0
					TNF α	0	0	0	0	0	0	0
					IL-10	0	0	0	0	0	0	6.21
IL-5	0				0	0	0	0	0	7.8		
Post vac 2	IFN γ			0	0	0	0	0	0	0		
	TNF α			0	0	0	0	0	0	0		
	IL-10			0	0	0	0	0	0	0		
Post vac 3	IL-5			0	0	0	0	0	2.29	42.68		
	IFN γ			0	0	0	0	0	0	0		
	TNF α			0	0	0	0	0	0	1.01		
Follow-up	IL-10			0	0	0	0	0	0	0		
	IL-5			0	0	0	0	0	0	45.13		
	IFN γ			0	0	0	0	0	0	9.93		
	TNF α			0	0	0	0	0	0	11.75		
	IL-10			1.32	0.18	0	0	0	0.55	0		
IL-5	0	0	0	0	0	0	38.14					
6	6	Baseline	IFN γ	0	0	0	0	0	0	353.33		
			TNF α	0	0	0	0	0	0	24.55		
			IL-10	0	1.00	0	0	0	1.52	0		
			IL-5	0	0	0	0	0	0	61.39		
		Post vac 2	IFN γ	0	0	0	0	0	0	1223.20		
			TNF α	0	0	0	0	0	0	89.01		
			IL-10	0	0	0	0	0	0	0		
		Post vac 3	IL-5	0	0	0	0	0	0	77.02		
			IFN γ	0	0	0	0	0	0	2467.81		
			TNF α	0	0	0	0	0	0	156.91		
		Follow-up	IL-10	0	1.16	0	0	0	2.29	27.75		
			IL-5	0	0	0	0	0	0	25.39		
			IFN γ	0	0	0	0	0	0	939.89		
			TNF α	0	0	0	0	0	0	90.20		
			IL-10	0	2.11	0	0	0	2.65	9.13		
IL-5	0	0	0	0	0	0	5.85					

Dose ($\mu\text{g}/\text{peptide}$)	Patient #	Time point	Cytokine	E6.1	E6.2	E6.3	E6.4	E7.1	E7.2	MRM
5	7	Baseline	IFN γ	0	0	0	0	0	0	9.97
			TNF α	0	0	0	0	0	0	10.57
			IL-10	0	0	0	0	0	0	9.91
			IL-5	0	0	0	0	0	0	391.75
		Post vac 2	IFN γ	0	0	0	0	0	0	20.42
			TNF α	0	0	0	0	0	0	17.06
			IL-10	0	0	0	0	0	0.94	0
		Post vac 3	IL-5	0	0	0	0	0	0	450.92
			IFN γ	0	0	0	0	0	0	72.39
			TNF α	0	0	0	0	0	0	63.39
		Follow-up	IL-10	0	0	0	0	0	0	0
			IL-5	0	0	0	0	0	0	341.35
			IFN γ	0	0	0	0	0	0	2.99
			TNF α	0	0	0	0	0	0	5.48
			IL-10	0	0	0	0	0	0	0
8	8	Baseline	IFN γ	0	0	0	0	0	0	8.81
			TNF α	0	0	0	0	0	0	0
			IL-10	0	0	0	0	0	0	0.77
			IL-5	0	0	0	0	0	0	25.11
		Post vac 2	IFN γ	0	0	0	0	0	0	1933.82
			TNF α	0	0	0	0	0	0	244.00
			IL-10	0	3.44	1.08	0	0	1.18	5.62
		Post vac 3	IL-5	0	0	0	0	0	0	16.58
			IFN γ	0	0	0	0	0	0	253.78
			TNF α	0	0	0	0	0	0	15.9
		Follow-up	IL-10	1.80	19.85	1.98	9.14	1.29	8.90	0.47
			IL-5	0	0	0	0	0	0	29.48
			IFN γ	0	0	0	0	0	0	608.28
			TNF α	0	0	0	0	0	0	75.94
			IL-10	0	0.19	0	0	0	0	0
9	9	Baseline	IFN γ	0	0	0	0	0	0	20.83
			TNF α	0	0	0	0	0	0	0
			IL-10	0	0	0	0	0	0	3.02
			IL-5	0	0	0	0	0	0	40.99
		Post vac 2	IFN γ	0	0	0	0	0	0	76.81
			TNF α	0	0	0	0	0	0	25.35
			IL-10	3.14	0	0	0	0	0.13	0
		Post vac 3	IL-5	0	0	0	0	0	0	34.49
			IFN γ	0	0	0	0	0	0	212.24
			TNF α	0	0	0	0	0	0	17.06
		Follow-up	IL-10	0	7.69	0	0	0	0	0
			IL-5	0	0	0	0	0	0	66.13
			IFN γ	0	0	0	0	0	0	29.55
			TNF α	0	0	0	0	0	0	10.57
			IL-10	0	0.16	0	0	0	1.72	0
IL-5	0	0	0	0	0	0	51.90			

Dose ($\mu\text{g}/\text{peptide}$)	Patient #	Time point	Cytokine	E6.1	E6.2	E6.3	E6.4	E7.1	E7.2	MRM
5	10	Baseline	IFN γ	0	0	0	0	0	0	887.20
			TNF α	0	0	0	0	0	0	234.20
			IL-10	0	2.44	0	0	0	0.13	0
			IL-5	0	0	0.26	0	0	0	146.46
		Post vac 2	IFN γ	0	0	0	0	0	0	1977.26
			TNF α	0	0	0	0	0	0	459.28
			IL-10	0	0.81	0	0	0	1.21	0
			IL-5	0	0	0	5.93	0	0	261.16
		Post vac 3	IFN γ	0	0	0	0	0	0	1493.38
			TNF α	0	0	0	0	0	0	241.52
			IL-10	0	1.64	0	0	0	0	3.58
			IL-5	0	0	0	0	0	0	177.53
	Follow-up	IFN γ	0	0	0	0	0	0	1417.49	
		TNF α	0	0	0	0	0	0	437.00	
		IL-10	0	0	0	0	0	0	0	
		IL-5	0	0	0	0	0	0	240.94	
	11	Baseline	IFN γ	0	0	0	0	0	0	761.57
			TNF α	0	0	0	0	0	0	27.31
			IL-10	0	3.17	0	0	0	4.00	27.81
			IL-5	0	0	0	0	0	0	79.94
		Post vac 2	IFN γ	0	0	0	0	0	0	680.25
			TNF α	0	0	0	0	0	0	17.06
			IL-10	0	36.18	0	0	0	1.44	18.57
			IL-5	0	0	0	0	0	0	81.11
		Post vac 3	IFN γ	0	0.85	0	0	0	0	1067.80
			TNF α	0	0	0	0	0	0	46.69
			IL-10	1.07	31.97	0	0	0	2.97	23.07
			IL-5	7.57	11.47	0	0	0	0	95.00
	Follow-up	IFN γ	0	6.58	0	0	0	0	1156.22	
		TNF α	0	0	0	0	0	0	57.70	
		IL-10	0	13.72	0	0	0	1.57	16.92	
		IL-5	0	1.18	0	0	0	0	99.53	
	12	Baseline	IFN γ	0	0	0	0	0	0	2238.96
			TNF α	0	0	0	0	0	0	127.61
			IL-10	0	3.59	1.06	0	0	2.64	1.17
			IL-5	0	0	0	0	0	0	49.52
Post vac 2		IFN γ	0	0	0	0	0	0	2515.30	
		TNF α	0	0	0	0	0	0	270.16	
		IL-10	0	4.57	0	0.19	0.19	3.98	3.56	
		IL-5	0	0	0	0	0	0	43.72	
Post vac 3		IFN γ	0	0	0	0	0	0	2456.75	
		TNF α	0	0	0	0	0	0	144.10	
		IL-10	1.21	9.27	0	0	0	0.61	1.21	
		IL-5	0	0	0	0	0	0	51.42	
Follow-up	IFN γ	0	0	0	0	0	0	2734.57		
	TNF α	0	0	0	0	0	0	224.77		
	IL-10	0	1.64	0	0	0	1.32	6.90		
	IL-5	0	0	0	0	0	0	70.57		

Dose ($\mu\text{g}/\text{peptide}$)	Patient #	Time point	Cytokine	E6.1	E6.2	E6.3	E6.4	E7.1	E7.2	MRM	
20	13	Baseline	IFN γ	0	0	0	0	0	0	32.36	
			TNF α	0	0	0	0	0	0	25.88	
			IL-10	0	0	0	0	0	0.69	0	
			IL-5	0	0	0	0	0	0	98.84	
		Post vac 2	IFN γ	0	10.07	0	0	0	0	0	32.36
			TNF α	0	0	0	0	0	0	0	24.01
			IL-10	0	12.48	0	0	0	0.82	1.24	
			IL-5	0	2.37	0.59	0	0	0	72.99	
		Post vac 3	IFN γ	1.08	9.40	0	0	0	0	0	217.62
			TNF α	0	0	0	0	0	0	0	31.78
			IL-10	0	59.08	0.47	0.47	0	4.31	1.44	
			IL-5	4.13	25.43	3.39	0.77	0	0.12	175.10	
		Follow-up	IFN γ	0	1.13	0	0	0	0	0	47.56
			TNF α	0	0	0	0	0	0	0	30.31
			IL-10	0.59	12.37	0	0.41	0	1.79	3.89	
IL-5	0		0.03	0	0.31	0	0	52.92			
14	14	Baseline	IFN γ	0	0	0	0	0	0	3.30	
			TNF α	0	0	0	0	0	0	5.34	
			IL-10	0	0	0	0	0	0	0	
			IL-5	0	0	0	0	0	0	104.83	
		Post vac 2	IFN γ	0	1.08	0	0.10	0	0	0	4.83
			TNF α	0	0	0	0	0	0	0	8.28
			IL-10	0	13.97	0	0	0	0	0	0
			IL-5	0	9.00	0	0.45	0	0	135.44	
		Post vac 3	IFN γ	0	0	0	0	0	0	0	5.36
			TNF α	0	0	0	0	0	0	0	7.56
			IL-10	0	0	0	0	0	2.87	1.90	
			IL-5	0	0.10	0	0	0	0	70.89	
		Follow-up	IFN γ	0	0	0	0	0	0	0	27.73
			TNF α	0	0	0	0	0	0	0	40.46
			IL-10	0	0	0	0	0	0	0	0
IL-5	0		0	0	0	0	0	177.09			
15	15	Baseline	IFN γ	0	0	0	0	0	0	543.58	
			TNF α	0	0	0	0	0	0	52.08	
			IL-10	0	0	0	0	0	0	2.62	
			IL-5	0	0	0	0	0	0	64.93	
		Post vac 2	IFN γ	0	3.80	0	6.61	0	0	0	266.14
			TNF α	0	0	0	0	0	0	0	34.49
			IL-10	0	6.17	0	4.28	0	0.73	1.98	
			IL-5	0	20.42	0.40	89.61	0	0	82.87	
		Post vac 3	IFN γ	0	11.98	0	6.51	0	0	0	412.63
			TNF α	0	0	0	0	0	0	0	68.47
			IL-10	0	3.88	0	0	0	0.26	0.75	
			IL-5	0	13.60	0.82	10.14	0	0	44.41	
		Follow-up	IFN γ	0	0	0	0	0	0	0	331.49
			TNF α	0	0	0	0	0	0	0	87.42
			IL-10	0	0.57	0	0	0	2.27	4.63	
IL-5	0		0.62	0	0.52	0	0	45.29			

Dose ($\mu\text{g}/\text{peptide}$)	Patient #	Time point	Cytokine	E6.1	E6.2	E6.3	E6.4	E7.1	E7.2	MRM
20	16	Baseline	IFN γ	0	0.47	0	1.28	0.10	0	1464.75
			TNF α	0	0	0	0.16	0	0	102.52
			IL-10	0	3.39	0	0	0	0.27	0
			IL-5	0	0.28	0	0	0	0	95.97
		Post vac 2	IFN γ	0	0	0	9.27	0	0	1493.12
			TNF α	0	0	0	16.34	0	0	178.10
			IL-10	0	1.89	0	6.13	0	0.10	0
			IL-5	0	0.26	0	0.31	0	0	135.44
		Post vac 3	IFN γ	0	0	0	2.39	0	0	1153.01
			TNF α	0	0	0	2.49	0	0	223.71
			IL-10	0	1.24	0	0	0	0	0
			IL-5	0	0	0	0	0	0	119.13
	Follow-up	IFN γ	0	0	0	3.58	0	0	1675.56	
		TNF α	0	0	0	7.70	0	0	275.42	
		IL-10	0	1.27	0	0	0	0	0	
		IL-5	0	0	0	0	0	0	173.59	
17	17	Baseline	IFN γ	0	0	0	0	0	0	217.62
			TNF α	0	0	0	0	0	0	157.28
			IL-10	0	0	0	0	0	0	0
			IL-5	0	0	0	0	0	0	386.73
		Post vac 2	IFN γ	0	38.48	3.88	15.45	0	0	319.09
			TNF α	0	11.98	6.08	7.14	0	0	115.37
			IL-10	0	26.65	3.00	6.12	0	2.70	0
			IL-5	1.46	407.26	66.86	390.75	0	0	171.87
		Post vac 3	IFN γ	0.25	39.74	2.64	5.82	0	0	159.81
			TNF α	0	9.21	3.21	3.03	0	0	66.38
			IL-10	0	44.08	17.07	0	0	1.65	0
			IL-5	0	695.92	197.68	214.21	0	0	338.29
	Follow-up	IFN γ	0	55.60	8.52	8.64	0	0	378.77	
		TNF α	0	19.26	9.21	9.05	0	0	134.81	
		IL-10	0	15.90	4.27	1.83	0	0.87	0	
		IL-5	0	262.14	109.03	254.29	0	0	151.03	
18	18	Baseline	IFN γ							
			TNF α							
			IL-10							
			IL-5							
		Post vac 2	IFN γ	0	0	0	0	0	0	16.83
			TNF α	0	0	0	0	0	0	9.37
			IL-10	0.71	1.36	0.61	3.66	0.82	3.01	6.41
			IL-5	0	0	0	0	0	0	8.06
		Post vac 3	IFN γ							
			TNF α							
			IL-10							
			IL-5							
	Follow-up	IFN γ	0	0	0	0	0	0	1.03	
		TNF α	0	0	0	0	0	0	7.27	
		IL-10	0	0	0	0	0	0	2.50	
		IL-5	0	0	0	0	0	0	35.48	

Dose ($\mu\text{g}/\text{peptide}$)	Patient #	Time point	Cytokine	E6.1	E6.2	E6.3	E6.4	E7.1	E7.2	MRM
50	19	Baseline	IFN γ							
			TNF α							
			IL-10							
			IL-5							
		Post vac 2	IFN γ	0	201.81	15.79	152.57	0	0	441.36
			TNF α	0	11.67	2.78	21.35	0	0	89.26
			IL-10	0	150.24	19.96	54.53	0	0	4.09
			IL-5	0	548.43	71.76	279.75	0	0	146.88
		Post vac 3	IFN γ	4.10	416.99	32.92	211.90	0	0.88	144.70
			TNF α	0	18.65	2.41	20.79	0	0.52	59.23
			IL-10	0.37	109.77	24.55	47.21	0	1.01	3.38
			IL-5	17.84	1509.01	171.02	423.24	0	0	152.20
		Follow-up	IFN γ	0	717.32	244.87	226.72	0	0	329.22
			TNF α	0	32.88	9.80	32.13	0	0	46.49
			IL-10	0	143.41	27.57	60.18	0	0	17.71
IL-5	0		2822.94	299.24	1047.22	0	0	172.57		
20	20	Baseline	IFN γ	0	0	0	0	0	0	351.81
			TNF α	0	0	0	0	0	0	47.00
			IL-10	0	1.23	0	0	0	1.44	0.34
			IL-5	0	0	0	0	0	0	45.60
		Post vac 2	IFN γ	0	0	0	0	0	0	167.73
			TNF α	0	0	0	0	0	0	68.31
			IL-10	0	6.98	0	0	0	2.91	0
			IL-5	0	0	0	0	0	0	55.76
		Post vac 3	IFN γ	0	0	0	0	0	0	274.72
			TNF α	0	0	0	0	0	0	61.08
			IL-10	0.46	8.93	0.74	0.06	0.13	2.25	0
			IL-5	0	4.38	0	0	0	0	69.97
		Follow-up	IFN γ	0	0	0	0	0	0	1861.41
			TNF α	0	0	0	0	0	0	415.72
			IL-10	0.18	5.25	0	0	0	1.91	12.92
IL-5	0		2.62	0	0	0	0	63.78		
21	21	Baseline	IFN γ	0	0	0	0	0	0	0
			TNF α	0	0	0	0	0	0	0
			IL-10	0	0	0	0	0	3.77	2.77
			IL-5	0	0	0	0	0	0	0
		Post vac 2	IFN γ	0	2.73	0	2.95	0	0	0
			TNF α	0	0	0	0	0	0	1.57
			IL-10	0	14.70	0	0	0	0	0.59
			IL-5	0	80.11	0	111.91	0	0	0
		Post vac 3	IFN γ	0	12.94	0	11.71	0	0	0
			TNF α	0	0	0	0	0	0	0
			IL-10	1.37	16.63	0.23	5.36	0	2.10	0.28
			IL-5	0	81.48	0	105.33	0	0	3.06
		Follow-up	IFN γ	0	5.76	0	4.28	0	0	0
			TNF α	0	0	0	0	0	0	1.20
			IL-10	2.90	11.47	1.82	4.74	2.31	5.87	4.17
IL-5	0		82.88	0	114.86	0	0	0		

Dose ($\mu\text{g}/\text{peptide}$)	Patient #	Time point	Cytokine	E6.1	E6.2	E6.3	E6.4	E7.1	E7.2	MRM
50	22	Baseline	IFN γ							
			TNF α							
			IL-10							
			IL-5							
		Post vac 2	IFN γ	0	7.36	0	0.94	0	0	27.60
			TNF α	0	0	0	0	0	0	1.69
			IL-10	0	19.26	0	1.38	0	0	5.09
			IL-5	0	24.11	1.69	11.22	0	0	24.11
		Post vac 3	IFN γ	0	1.69	0	0	0	0	1.82
			TNF α	0	0	0	0	0	0	0
			IL-10	0	12.72	0.36	0.53	0	0.58	2.91
			IL-5	0	21.71	0	3.40	0	0	3.12
		Follow-up	IFN γ	0	0	0	0	0	0	0
			TNF α	0	0	0	0	0	0	0
			IL-10	0	2.76	0	0	0	0.34	2.34
IL-5	0		1.18	0	0	0	0	0		
23	23	Baseline	IFN γ	0	0	0	0	0	0	7.48
			TNF α	0	0	0	0	0	0	8.59
			IL-10	0	0	0	0	0	0	0
			IL-5	0	0	8.65	0	0	0.41	73.61
		Post vac 2	IFN γ	0	156.59	13.49	131.02	0	0	12.05
			TNF α	0	15.72	0	31.01	0	0	14.59
			IL-10	0	349.64	28.37	38.09	0	0.94	4.73
			IL-5	0	45.21	19.00	117.90	0	0	79.43
		Post vac 3	IFN γ	1.82	169.39	5.86	26.31	0	0	4.47
			TNF α	0	6.08	0	1.94	0	0	7.29
			IL-10	0	135.6	0	3.38	0	0	0
			IL-5	1.08	45.60	17.05	28.89	0	0	62.71
		Follow-up	IFN γ	0	59.94	3.76	17.19	0	0	3.43
			TNF α	0	3.02	0	0	0	0	5.65
			IL-10	0	147.00	11.04	20.38	0	2.17	7.06
IL-5	0		36.03	10.56	38.22	0	0	44.84		
24	24	Baseline	IFN γ	0	0	0	5.76	0	0	86.51
			TNF α	0	0	0	0	0	0	32.13
			IL-10	0	0	0	0.33	0	1.58	2.16
			IL-5	0	0	0	1.99	0	0	87.97
		Post vac 2	IFN γ	0	13.68	0.44	18.82	0	0	211.90
			TNF α	0	0	0	0.67	0	0	77.02
			IL-10	0	37.46	0.30	16.96	0	0.51	4.22
			IL-5	0	2.25	0	4.32	0	0	114.86
		Post vac 3	IFN γ	0	141.86	8.80	244.87	0	0	152.02
			TNF α	0	2.17	0	8.76	0	0	43.09
			IL-10	0	70.38	2.88	66.33	0	1.22	3.20
			IL-5	0	20.59	1.74	28.89	0	0	118.93
		Follow-up	IFN γ	0	11.71	0	20.84	0	0	140.46
			TNF α	0	0	0	3.27	0	0	24.60
			IL-10	0	9.34	0	9.15	0	0.75	0
IL-5	0		4.51	0	47.95	0	0	100.03		

Dose ($\mu\text{g}/\text{peptide}$)	Patient #	Time point	Cytokine	E6.1	E6.2	E6.3	E6.4	E7.1	E7.2	MRM
50	25	Baseline	IFN γ	0	0	0	0	0	0	1760.99
			TNF α	0	0	0	0	0	0	57.42
			IL-10	0	0.07	0	0	0	0.37	12.54
		Post vac 2	IL-5	0	0	0	0	0	0	21.33
			IFN γ	0	129.72	12.05	458.11	2.16	0	503.16
			TNF α	0	9.10	0	4.03	0	0	39.01
		Post vac 3	IL-10	0	53.02	4.09	11.11	0.19	0.82	7.40
			IL-5	0	603.64	64.32	277.09	2.73	0	56.70
			IFN γ	0	103.98	2.29	46.71	0	0	896.38
		Follow-up	TNF α	0	7.77	0	4.03	0	0	20.51
			IL-10	0	31.89	6.47	5.53	0	0.82	3.23
			IL-5	0	577.93	126.02	319.88	0	0	59.22
			IFN γ	0	228.92	11.21	116.20	8.97	0	2198.47
			TNF α	0	6.83	0	0.52	0	0	21.92
		Follow-up	IL-10	0.19	48.93	4.79	6.86	0.29	0.79	7.10
IL-5	0		596.07	211.37	223.95	11.60	0	60.07		

Cytokine produced by T cells (in pg/ml) in the supernatant of the proliferation assay (Lymphocyte stimulation tests, LST) obtained at day 6 as measured by Cytometric Bead Array (CBA). The threshold of cytokines was 20 pg/ml, except for IFN γ which was set at 50 pg/ml. The cytokine production in the negative control (cells medium only) was subtracted from those upon peptide pool or MRM stimulation. The grey shaded peptide pools indicate the peptide pools covering the vaccine peptides. A value in bold indicates a positive response.

Supplemental Table 3: Specific spot counts in ELISPOT assay

Dose ($\mu\text{g/peptide}$)	Patient #	Time point	Vaccine Peptide A	Vaccine Peptide B	MRM
1	1	Baseline	5	7	207
		Post vac 2	0	0	147
		Post vac 3	14	0	158
		Follow-up	5	0	154
	2	Baseline	1	9	314
		Post vac 2	0	22	317
		Post vac 3	7	17	313
		Follow-up	2	23	309
	3	Baseline	0	0	158
		Post vac 2	64	11	219
		Post vac 3	0	0	73
		Follow-up	74	11	142
4	Baseline	9	3	304	
	Post vac 2				
	Post vac 3	2	7	620	
	Follow-up	2	6	436	
5	Baseline	0	0	138	
	Post vac 2	5	0		
	Post vac 3	0	0	143	
	Follow-up	0	0	591	
6	Baseline	0	0	307	
	Post vac 2	0	5	313	
	Post vac 3	0	0	350	
	Follow-up	2	0	314	
5	7	Baseline	3	3	316
		Post vac 2	7	8	315
		Post vac 3	1	0	314
		Follow-up	3	21	316
	8	Baseline	0	115	348
		Post vac 2	40	0	370
		Post vac 3	49	88	294
		Follow-up	7	35	301
	9	Baseline	0	0	229
		Post vac 2	14	13	253
		Post vac 3	7	4	216
		Follow-up	32	3	229
10	Baseline	0	0	306	
	Post vac 2	7	41	315	
	Post vac 3	17	28	316	
	Follow-up	0	43	310	
11	Baseline	0	0	264	
	Post vac 2	68	54	223	
	Post vac 3	87	0	297	
	Follow-up	12	52	282	
12	Baseline	0	0	210	
	Post vac 2	0	0	135	
	Post vac 3	3	0	151	
	Follow-up	1	0	190	

Dose ($\mu\text{g}/\text{peptide}$)	Patient #	Time point	Vaccine Peptide A	Vaccine Peptide B	MRM
20	13	Baseline	0	79	189
		Post vac 2	114	23	189
		Post vac 3	131	24	194
		Follow-up	58	0	145
	14	Baseline	<1	2	219
		Post vac 2	20	3	185
		Post vac 3	13	0	164
		Follow-up	32	8	196
	15	Baseline	0	10	291
		Post vac 2	155	158	245
		Post vac 3	59	85	226
	16	Baseline	0	3	90
		Post vac 2	1	106	116
		Post vac 3	0	39	355
		Follow-up	0	0	356
	17	Baseline	0	0	183
Post vac 2		193	63	174	
Post vac 3		121	98	194	
Follow-up		187	58	237	
18	Baseline	0	0	237	
	Post vac 2	194	64	242	
	Post vac 3	197	28	176	
	Follow-up	0	0	349	
50	19	Baseline	20	8	147
		Post vac 2	230	134	116
		Post vac 3	208	187	139
		Follow-up	225	137	71
	20	Baseline	0	2	319
		Post vac 2	24	0	315
		Post vac 3	38	3	371
		Follow-up	16	0	313
	21	Baseline	4	0	218
		Post vac 2	402	169	138
		Post vac 3	306	179	256
		Follow-up	336	277	35
	22	Baseline	0	0	185
		Post vac 2	264	36	152
		Post vac 3	100	0	
		Follow-up	120	0	208
	23	Baseline	1	0	177
		Post vac 2	391	342	245
		Post vac 3	303	265	208
		Follow-up	242	181	149
24	Baseline	0	0	159	
	Post vac 2	187	196	201	
	Post vac 3	190	157	169	
	Follow-up	106	137	183	
25	Baseline	0	141	152	
	Post vac 2	44	0	0	
	Post vac 3	62	58	32	
	Follow-up	159	129	136	

The T cell responses to vaccine peptides E6₇₁₋₉₅ (peptide A) and E6₁₂₇₋₁₅₈ (peptide B) was measured by the validated 4-days IFN γ ELISPOT assay. Given are specific spot counts per 10⁵ cells. MRM was taken along as positive control. The grey shaded peptides indicate the vaccine peptides. A positive response was defined as at least 10 specific spots per 10⁵ cells and at least twice that of the cells in medium only and indicated in bold.