

Table S11 Predicted linear B cell epitopes of HPV-52 E6

reference				variant			
Rank	Sequence	Start position	Score	Rank	Sequence	Start position	Score
1	MGRWTGRCSECWRPRP	129	0.91	1	MGRWTGRCSECWRPRP	129	0.91
1	TPLCPEEKERHVNANK	108	0.91	1	TPLCPEEKERHVNANK	108	0.91
2	YGVCIMCLRFLSKISE	60	0.9	2	EERVRKPLSEITIRCI	89	0.9
3	EERVKKPLSEITIRCI	89	0.87	2	YGVCIMCLRFLSKISE	60	0.9
4	DLRIVYRDNNPYGVCI	49	0.83	3	YSLYGKTLSEERVRKPL	81	0.84
5	YSLYGKTLSEERVRKPL	81	0.81	4	DLRIVYRDNNPYGVCI	49	0.83
6	CEVLEESVHEIRLQCV	16	0.79	5	CEVLEESVHEIRLQCV	16	0.79
6	ERHVNANKRFHNIMGR	116	0.79	5	ERHVNANKRFHNIMGR	116	0.79
7	KKELQRREVYKFLFTD	34	0.74	6	KKELQRREVYKFLFTD	34	0.74
8	ISEYRHYQYSLYGKTL	73	0.73	6	QDPATRPRTLHELCEV	3	0.74
9	EITIRCIQCQTPLCPE	98	0.72	7	ISEYRHYQYSLYGKTL	73	0.73
10	EDPATRPRTLHELCEV	3	0.68	8	EITIRCIQCQTPLCPE	98	0.72
11	VHEIRLQCVQCKKELQ	23	0.65	9	VHEIRLQCVQCKKELQ	23	0.65

Table S12 Predicted linear B cell epitopes of HPV-52 E7

reference				variant			
Rank	Sequence	Start position	Score	Rank	Sequence	Start position	Score
1	HCYEQLGDSSDEEDTD	23	0.9	1	EEDIDGVDRPDGQAEQ	34	0.9
2	IVTYCHSCDSTLRICI	56	0.86	2	DGQAEQATDNYIIVTD	44	0.85
3	ATSNYYIIVTYCHSCDS	50	0.85	3	EQLGDSSDEEDIDGVD	26	0.84
3	DTDGVDRPDGQAEQAT	36	0.85	4	ATDNYIIVTDCYSCNS	50	0.76
4	GDSSDEEDTDGVDRPD	29	0.78	5	KATIKDYILDLPETT	5	0.75
5	KATIKDYILDLPETT	5	0.75	6	CIHSTATDLRTLQQML	70	0.71
6	CIHSTATDLRTLQQML	70	0.71	6	PETTDLHCYEQLGDSS	17	0.71
6	PETTDLHCYEQLGDSS	17	0.71	7	RTLQQMLLGTQVVCP	79	0.67
7	SCDSTLRICIHSTATD	62	0.69	8	IVTDCYSCNSTLRICI	56	0.64
8	RTLQQMLLGTQVVCP	79	0.67	9	SCNSTLRICIHSTATD	62	0.59