**Supplemental Digital Content 2 - Table 2. A-list defined optimal epitopes with affinity data.**

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| --- | --- | --- | --- | --- |
| **Peptide Sequence** | **Vaccine Response** | **Affinity**  | **HLA Restriction** | **Protein** |
| ILKEPVHGV | YES | 101 | A\*0201 | RT |
| RLRPGGKKK | YES | 46 | A\*0301 | p17 |
| TVYYGVPVWK | YES | 0.54 | A\*0301 | gp160 |
| KYKLKHIVW | YES | 0.88 | A\*2402 | p17 |
| RPNNNTRKSI | YES | 23 | B\*0702 | gp160 |
| KRWIILGLNK | YES | 1.6 | B\*2705 | p24 |
| DPNPQEVVL | YES | 68 | B\*3503 | gp160 |
| TSTLQEQIGW | YES | 7 | B\*5701 | p24 |
| IVLPEKDSW | YES | 50 | B\*5701 | RT |
| KLNWASQIY | YES | 0.54 | A\*3002 | RT |
| KIQNFRVYY | YES | 9.9 | A\*3002 | Integrase |
| KQNPDIVIY | YES | 4.8 | A\*3002 | RT |
| SFEPIPIHY | YES | 131 | A\*2902 | gp160 |
| TSTLQEQIGW | YES | 3.7 | B\*5801 | p24 |
| IVLPEKDSW | YES | 13 | B\*5801 | RT |
| SLYNTVATL | NO | 9.1 | A\*0201 | p17 |
| ALVEICTEM | NO | 25 | A\*0201 | RT |
| VIYQYMDDL | NO | 5995 | A\*0201 | RT |
| KIRLRPGGK | NO | 25 | A\*0301 | p17 |
| RLRPGGKKKY | NO | 83 | A\*0301 | p17 |
| ALVEICTEMEK | NO | 791 | A\*0301 | RT |
| ACQGVGGPGHK | NO | 7469 | A\*1101 | p24 |
| IYQEPFKNLK | NO | 6824 | A\*1101 | RT |
| RYLKDQQLL | NO | 5.4 | A\*2402 | gp160 |
| EVIPMFSAL | NO | 0.099 | A\*2601 | p24 |
| RSLYNTVATLY | NO | 4.7 | B58 | p17 |
| ITLWQRPLV | NO | 23696 | A\*6802 | Protease |
| SPRTLNAWV | NO | 14 | B\*0702 | p24 |
| TPQDLNTML | NO | 723 | B\*0702 | p24 |
| IPRRIRQGL | NO | 8.3 | B\*0702 | gp160 |
| ELRSLYNTV | NO | 20 | B\*0801 | p17 |
| DCKTILKAL | NO | 1143 | B\*0801 | p24 |
| RVKEKYQHL | NO | 11 | B\*0801 | gp160 |
| GPKVKQWPL | NO | 2.4 | B\*0801 | RT |
| FRDYVDRFYK | NO | 50000 | B\*1801 | p24 |
| IRLRPGGKK | NO | 79 | B\*2705 | p17 |
| WASRELERF | NO | 17432 | B\*3501 | p17 |
| TVLDVGDAY | NO | 271 | B\*3501 | RT |
| VPVWKEATTTL | NO | 10730 | B\*3501 | gp160 |
| TAVPWNASW | NO | 2242 | B\*3501 | gp160 |
| IEIKDTKEAL | NO | 100 | B\*4001 | p17 |
| SEGATPQDL | NO | 317 | B\*4001 | p24 |
| IEELRQHLL | NO | 86 | B\*4001 | RT |
| RDYVDRFYKTL | NO | 16347 | B\*4402 | p24 |
| EKEGKISKI | NO | 14059 | B\*5101 | RT |
| QASQEVKNW | NO | 144 | B57 | p24 |
| ISPRTLNAW | NO | 44 | B\*5701 | p24 |
| KAFSPEVIPMF | NO | 21 | B\*5701 | p24 |
| KTAVQMAVF | NO | 3.8 | B\*5701 | Integrase |
| QIIEQLIKK | NO | 1.4 | A\*1101 | RT |
| FLGKIWPSYK | NO | 40 | A\*0201 | p2p7p1p6 |
| KELYPLTSL | NO | 0.5 | B\*4001 | p2p7p1p6 |
| GPGHKARVL | NO | 764 | B\*0702 | p24 |
| KAFSPEVI | NO | 711 | B\*5703 | p24 |
| EIYKRWII | NO | 4.2 | B\*0801 | p24 |
| YLKDQQLL | NO | 19 | B\*0801 | gp160 |
| TERQANFL | NO | 29 | B\*4002 | p2p7p1p6 |
| KETINEEAA | NO | 30 | B\*4002 | p24 |
| GELDRWEKI | NO | 262 | B\*4002 | p17 |
| EEKAFSPEV | NO | 100 | B\*4415 | p24 |
| KLVDFRELNK | NO | 1.4 | A\*0301 | RT |
| GIPHPAGLK | NO | 1.6 | A\*0301 | RT |
| ETKLGKAGY | NO | 32 | A\*2601 | RT |
| AVFIHNFKRK | NO | 8.4 | A\*0301 | Integrase |
| SVITQACPK | NO | 6.5 | A\*1101 | gp160 |
| HIGPGRAFY | NO | 0.77 | A\*3002 | gp160 |
| LPCRIKQII | NO | 2244 | B\*5101 | gp160 |
| AVFIHNFKRK | NO | 8.4 | A\*1101 | Integrase |
| RSLYNTVATLY | NO | 0.29 | A\*3002 | p17 |