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| **Table S3. HIV-1 Gag MHC class I epitopes detected in 7 HIV-1 infected subjectsa** |
|
|  |  |  | Number of IFN  responses  | Known CD8 epitopee |  |
| Peptide | Locationb | Gag peptide (15mer)c  | with DC/without DC/bothd |  (HLA) |  |
| 2 | p175-19 | ASVLSGGELDRWEKI | 1/0/0 | GELDRWEKI (B\*4002) |  |
| 3 | p179-23 | SGGELDRWEKIRLRP | 2/0/0 | GELDRWEKI (B\*4002) |  |
| 4 | p1713-27 | LDRWEKIRLRPGGKK | 2/0/1 | KIRLRPGGK (A\*0301; B\*27) |  |
|  |  |  |  | IRLRPGGKK (B\*2705) |  |
| 5 | p1717-31 | EKIRLRPGGKKKYKL | 2/0/2 | KIRLRPGGK (A\*0301; B\*27) |  |
|  |  |  |  | IRLRPGGKK (B\*2705) |  |
|  |  |  |  | RLRPGGKKK (A\*0301) |  |
| 6 | p1721-35 | LRPGGKKKYKLKHIV | 1/0/1 | LRPGGKKKYKLKHIV (A3) |  |
| 7 | p1725-39 | GKKKYKLKHIVWASR  | 2/0/1 | None |  |
| 8 | p1729-43 | YKLKHIVWASRELER  | 2/0/0 | None |  |
| 9 | p1733-47 | HIVWASRELERFAVN | 0/0/1 | None |  |
| 10 | p1737-51 | ASRELERFAVNPGLL | 1/0/2 | ERFAVNPGL (B27) |  |
| 11 | p1741-55 | LERFAVNPGLLETSE | 1/0/2 | ERFAVNPGL (B27) |  |
| 12 | p1745-59 | AVNPGLLETSEGCRQ  | 2/0/0 | None |  |
| 15 | p1757-71 | CRQILGQLQPSLQTG | 2/0/0 | None |  |
| 16 | p1761-75 | LGQLQPSLQTGSEEL | 2/0/0 | None |  |
| 17 | p1765-79 | QPSLQTGSEELRSLY | 1/0/0 | None |  |
| 19 | p1773-87 | EELRSLYNTVATLYC | 5/0/0 | SLYNTVATL (A\*0201) |  |
| 20 | p1777-91 | SLYNTVATLYCVHQR  | 0/0/3 | SLYNTVATL (A\*0201) |  |
|  |  |  |  | NTVATLYCV(A2) |  |
| 23 | p1789-103 | HQRIEIKDTKEALDK | 1/0/0 | IEIKDTKEAL (B\*40) |  |
| 25 | p1797-111 | TKEALDKIEEEQNKS  | 1/0/0 | None |  |
| 26 | p17101-115 | LDKIEEEQNKSKKKA | 2/0/0 | None |  |
| 27 | p17105-119 | EEEQNKSKKKAQQAA | 1/0/0 | None |  |
| 28 | p17109-123 | NKSKKKAQQAAADTG | 1/0/0 | None |  |
| 29 | p17113-127 | KKAQQAAADTGHSNQ | 1/0/0 | None |  |
| 31 | p17121-132/p241-3 | DTGHSNQVSQNYPIV | 2/0/0 | None |  |
| 33 | p17129-132/p241-11 | SQNYPIVQNIQGQMV | 1/0/0 | None |  |
| 34 | p241-15 | PIVQNIQGQMVHQAI | 1/0/0 | None |  |
| 35 | p245-19 | NIQGQMVHQAISPRT | 1/0/0 | MVHQAISPR (A3 supertype) |  |
| 36 | p249-23 | QMVHQAISPRTLNAW  | 3/0/1 | MVHQAISPR (A3 supertype) |  |
|  |  |  |  | HQAISPRTL (B\*1501) |  |
|  |  |  |  | QAISPRTLNAW(A\*2501) |  |
|  |  |  |  | QAISPRTL (Cw3) |  |
|  |  |  |  | ISPRTLNAW (B\*5701) |  |
| 37 | p2413-27 | QAISPRTLNAWVKVV  | 2/0/0 | QAISPRTLNAW(A\*2501) |  |
|  |  |  |  | ISPRTLNAW(B\*5701) |  |
|  |  |  |  | TLNAWVKVV (A\*0201) |  |
| 40 | p2425-39 | KVVEEKAFSPEVIPM | 1/0/0 | None |  |
| 41 | p2429-43 | EKAFSPEVIPMFSAL  | 0/0/1 | KAFSPEVIPMF (B\*5701) |  |
| 42 | p2433-47 | SPEVIPMFSALSEGA | 2/0/0 | None |  |
| 45 | p2445-59 | EGATPQDLNTMLNTV | 1/0/0 | None |  |
| 48 | p2457-71 | NTVGGHQAAMQMLKE  | 2/0/0 | GHQAAMQMLKE(A\*02)  |  |
|  |  |  |  | GHQAAMQML (B\*1510) |  |
| 49 | p2461-75 | GHQAAMQMLKETINE | 3/0/1 | GHQAAMQMLKE(A\*02)  |  |
|  |  |  |  | GHQAAMQML (B\*1510) |  |
| 52 | p2473-87 | INEEAAEWDRVHPVH | 0/0/1 | EEAAEWDRV (B\*40) |  |
|  |  |  |  | AEWDRVHPV (B\*4002) |  |
| 53 | p2477-91 | AAEWDRVHPVHAGPI | 1/0/0 | HPVHAGPI (B35) |  |
| 54 | p2481-95 | DRVHPVHAGPIAPGQ | 2/0/0 | HPVHAGPIA (B7; B35) |  |
| 56 | p2489-103 | GPIAPGQMREPRGSD | 1/0/0 | None |  |
| 57 | p2493-107 | PGQMREPRGSDIAGT | 1/0/0 | None |  |
| 63 | p24117-131 | WMTNNPPIPVGEIYK | 0/1/0 | MTNNPPIPV (A\*0201) |  |
| 64 | p24121-135 | NPPIPVGEIYKRWII | 0/1/1 | GEIYKRWII (B\*0801) |  |
| 65 | p24125-139 | PVGEIYKRWIILGLN | 1/1/2 | GEIYKRWII (B\*0801) |  |
|  |  |  |  | EIYKRWII (A2)  |  |
|  |  |  |  | IYKRWIILGL(B27) |  |
| 66 | p24129-143 | IYKRWIILGLNKIVR | 2/2/1 | IYKRWIILGL (B27) |  |
|  |  |  |  | RWIILGLNK (B27) |  |
|  |  |  |  | IILGLNKIV (A2) |  |
|  |  |  |  | IILGLNKIVR (A3) |  |
| 67 | p24133-147 | WIILGLNKIVRMYSP | 1/0/0 | IILGLNKIVR (A3) |  |
|  |  |  |  | ILGLNKIV (B\*27) |  |
| 68 | p24137-151 | GLNKIVRMYSPTSIL  | 0/0/1 | RMYSPTSIL (A2) |  |
| 69 | p24141-155 | IVRMYSPTSILDIRQ | 1/0/0 | RMYSPTSIL (A2) |  |
| 74 | p24161-175 | FRDYVDRFYKTLRAE | 3/1/0 | FRDYVDRFYK (B27) |  |
|  |  |  |  | RDYVDRFYKTL (B\*4402) |  |
|  |  |  |  | YVDRFYKTL (A\*02) |  |
| 75 | p24165-179 | VDRFYKTLRAEQASQ | 5/0/0 | VDRFYKTLRAEQASQ (B\*57) |  |
| 76 | p24169-183 | YKTLRAEQASQEVKN | 4/0/0 | None |  |
| 80 | p24185-199 | MTETLLVQNANPDCK | 1/0/0 | None |  |
| 82 | p24193-207 | NANPDCKTILKALGP  | 1/0/0 | None |  |
| 83 | p24197-211 | DCKTILKALGPAATL | 1/0/0 | None |  |
| 84 | p24201-215 | ILKALGPAATLEEMM  | 2/0/0 | None |  |
| 85 | p24205-219 | LGPAATLEEMMTACQ | 1/0/1 | ATLEEMMTA (A2) |  |
| 86 | p24209-223 | ATLEEMMTACQGVGG | 3/0/1 | EMMTACQGV (A\*0201) |  |
| 87 | p24213-227 | EMMTACQGVGGPGHK | 2/0/0 | EMMTACQGV (A\*0201) |  |
| 92 | p22-14;p71-2 | EAMSQVTNSATIMMQ  | 1/1/0 | SQVTNSATI (A\*02) |  |
| 93 | p26-14;p71-6 | QVTNSATIMMQRGNF | 0/1/0 | None |  |
| 94 | p210-14;p71-10 | SATIMMQRGNFRNQR | 1/0/0 | None |  |
| 95 | p214;p71-14 | MMQRGNFRNQRKIVK | 1/1/0 | None |  |
| 96 | p74-18 | GNFRNQRKIVKCFNC | 3/0/0 | None |  |
| 97 | p78-22 | NQRKIVKCFNCGKEG | 1/0/0 | None |  |
| 98 | p712-26 | IVKCFNCGKEGHTAR | 1/0/0 | None |  |
| 99 | p716-30 | FNCGKEGHTARNCRA | 1/0/0 | None |  |
| 102 | p728-42 | CRAPRKKGCWKCGKE | 2/1/0 | None |  |
| 103 | p732-46 | RKKGCWKCGKEGHQM | 2/0/0 | None |  |
| 104 | p736-50 | CWKCGKEGHQMKDCT | 2/0/0 | None |  |
| 105 | p740-54 | GKEGHQMKDCTERQA | 1/1/0 | None |  |
| 106 | p744-55;p11-3 | HQMKDCTERQANFLG | 2/0/0 | TERQANFL (B\*4002) |  |
| 107 | p748-55;p11-7 | DCTERQANFLGKIWP | 1/0/0 | None |  |
| 108 | p752-55;p11-11 | RQANFLGKIWPSYKG  | 0/0/1 | FLGKIWPSYK (A\*0201) |  |
| 109 | p11-15 | FLGKIWPSYKGRPGN | 0/0/1 | FLGKIWPSYK (A\*0201) |  |
| 111 | p19-16;p61-7 | YKGRPGNFLQSRPEP | 1/0/0 | None |  |
| 114 | p65-19 | PEPTAPPEESFRSGV  | 1/0/1 | None |  |
| 115 | p69-23 | APPEESFRSGVETTT | 1/0/0 | None |  |
| 116 | p613-27 | ESFRSGVETTTPPQK | 2/0/0 | None |  |
| 117 | p617-31 | SGVETTTPPQKQEPI | 1/0/0 | None |  |
| 118 | p621-35 | TTTPPQKQEPIDKEL | 0/1/0 | None |  |
| 121 | p633-47 | KELYPLTSLRSLFGN  | 2/0/0 | YPLTSLRSLF (B7) |  |
| 122 | p637-52 | PLTSLRSLFGNDPSSQ | 2/0/0 | None |  |
| a Known epitopes based on the CTL/CD8+ T-cell Epitope Database Epitope Location Finder (hiv-web.lanl.gov).  |  |
| b Results shown are positive responses to peptides derived from HIV-1 Gag HXB2 Clade B.  |  |
| c HIV-1 15mer peptides overlapping by 11 amino acids and spanning HIV-1 Gag. |  |  |
| d # positive IFN responses with DC/without DC/both with DC and without DC, in total of 7 subjects.  |  |
| e Minimal sequences for known epitopes with an associated HLA haplotype. |  |  |