|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Predicting 9-mer- epitope binding HLA-A\*0201 peptides (wild type and mutant)** | | | | | | | | | | | | | | | | | |
| **Count** | | | | | | | **Motif** | | | | | | | | | **Enzyme** | |
| 4 | | | | | | | Wild type | | | | | | | | |  | |
| 4 | | | | | | | GCT | | | | | | | | | AID | |
| 4 | | | | | | | AGC | | | | | | | | | AID | |
| 4 | | | | | | | GTA | | | | | | | | | AID | |
| 4 | | | | | | | TAC | | | | | | | | | AID | |
| 4 | | | | | | | GCA | | | | | | | | | AID | |
| 4 | | | | | | | TGC | | | | | | | | | AID | |
| 4 | | | | | | | GA/G>C | | | | | | | | | A3A/A3B | |
| 4 | | | | | | | GA | | | | | | | | | A3A/A3B | |
| 3 | | | | | | | TC/ C>G | | | | | | | | | A3A/A3B | |
| 4 | | | | | | | TC | | | | | | | | | A3A/A3B | |
| 4 | | | | | | | GAA | | | | | | | | | A3A/A3B | |
| 5 | | | | | | | TTC | | | | | | | | | A3A/A3B | |
| **Known Epitopes** | | | | | | | | | | | | | | | | | |
| **Position** | **wt Peptide** | **Affinity (nM)** | **Rank** |
| 41 | KASEKIFYV | 15.3 | 0.2 |
| **Stop codon gained** | | | | | | | | | | | | | | | | | |
| **Position** | **Sequence** | | | | | | **Enzyme** | | | | | | **Consist with existent mutations** | | | | |
|  | ……….. | | | | | |  | | | | | |  | | | | |
| **Novel Epitopes** | | | | | | | | | | | | | | | | | |
| **mt Peptide** | **Affinity (nM)** | **Rank** | **Binding level** | **Affinity (nM)** | | | **Enzyme** | | | | **Consist with existent mutations** | | | | | | |
| NMP**A**PT**H**CV | 255.5 | 1.90 | WB | NMPGPTDCV | | | A3A/A3B | | | |  | | | | | | |
| NMP**E**PT**N**CV | 286.7 | 2.00 | WB | NMPGPTDCV | | | A3A/A3B | | | |  | | | | | | |
| A**L**DDIAKY**L** | 30.0 | 0.40 | SB | AFDDIAKYF | | | A3A/A3B | | | |  | | | | | | |
| G**L**KATLPP**L** | 62.7 | 0.80 | WB | GFKATLPPF | | | A3A/A3B | | | |  | | | | | | |
| **Increased HLA Affinity** | | | | | | | | | | | | | | | | | |
| **mt Peptide** | **Affinity (nM)** | **Rank** | **Binding level** | **wt Peptide** | | **Affinity (nM)** | | | **Rank** | **Binding level** | | **Delta nM** | | **Enzyme** | | | **Consist with existent mutations** |
| K**V**SEKIFYV | 3.8 | 0.02 | SB | KASEKIFYV | | 16.6 | | | 0.25 | SB | | 12.8 | | AID | | |  |
| RLQ**A**ISPNI | 41.1 | 0.60 | WB | RLQGISPKI | | 135.3 | | | 1.30 | WB | | 94.2 | | A3A/A3B | | |  |
| RLQ**E**ISPKI | 35.4 | 0.50 | SB | RLQGISPKI | | 135.3 | | | 1.30 | WB | | 99.9 | | A3A/A3B | | |  |
| KA**W**EK**ML**YV | 12.1 | 0.15 | SB | KASEKIFYV | | 16.6 | | | 0.25 | SB | | 4.5 | | A3A/A3B | | | c.129G>A  p.S43=  COSM4417924  Substitution - coding silent |
| KA**L**EKIFYV | 5.5 | 0.04 | SB | KASEKIFYV | | 16.6 | | | 0.25 | SB | | 11.1 | | A3A/A3B | | |  |
| RLQGI**F**PKI | 47.9 | 0.60 | WB | RLQGISPKI | | 135.3 | | | 1.30 | WB | | 87.4 | | A3A/A3B | | |  |
| SL**L**TFMGAV | 9.2 | 0.10 | SB | SLSTSMGAV | | 113.3 | | | 1.10 | WB | | 104.1 | | A3A/A3B | | |  |
| **F**SLSTSMGV | 45.9 | 0.60 | WB | SLSTSMGAV | | 113.3 | | | 1.10 | WB | | 67.4 | | A3A/A3B | | |  |
| MTFGRLQ**A**I | 192.4 | 1.60 | WB | MTFGRLQGI | | 197.0 | | | 1.60 | WB | | 4.6 | | A3A/A3B | | |  |
| SLST**F**MGAV | 24.7 | 0.40 | WB | SLSTSMGAV | | 113.3 | | | 1.10 | WB | | 88.6 | | A3A/A3B | | |  |
| **Reduced HLA Affinity** | | | | | | | | | | | | | | | | | |
| **mt Peptide** | **Affinity (nM)** | **Rank** | **Binding level** | **wt Peptide** | | **Affinity (nM)** | | | **Rank** | **Binding level** | | **Delta nM** | | | **Enzyme** | | **Consist with existent mutations** |
| KAS**H**KIFYV | 56.2 | 0.70 | WB | KASEKIFYV | | 16.6 | | | 0.25 | SB | | -39.6 | | | A3A/A3B | |  |
| KAS**K**KIFYV | 127.6 | 1.20 | WB | KASEKIFYV | | 16.6 | | | 0.25 | SB | | -111 | | | A3A/A3B | |  |
| SLSTSMG**T**V | 144.2 | 1.30 | WB | SLSTSMGAV | | 113.3 | | | 1.10 | WB | | -30.9 | | | AID | |  |
| KAS**D**KIFYV | 18.2 | 0.25 | SB | KASEKIFYV | | 16.6 | | | 0.25 | SB | | -1.6 | | | A3A/A3B | |  |
| **Abrogated Epitopes** | | | | | | | | | | | | | | | | | |
| **Position** | **wt Peptide** | **Affinity (nM)** | **Rank** | **Binding level** | **Enzyme** | | | **Consist with existent mutations** | | | | | | | | | |
| 99 | MTFGRLQGI | 197.0 | 1.60 | WB | A3A/A3B | | |
| 99 | MTFGRLQGI | 197.0 | 1.60 | WB | A3A/A3B | | |  | | | | | | | | | |
| 99 | MTFGRLQGI | 197.0 | 1.60 | WB | A3A/A3B | | |  | | | | | | | | | |
| 103 | RLQGISPKI | 135.3 | 1.30 | WB | A3A/A3B | | |  | | | | | | | | | |