|  |  |  |  |
| --- | --- | --- | --- |
| **Table S6.** Population coverage of each of 16 predicted CD8+ T-cell epitopes in the most-affected countries by COVID-19 | | | |
| **Country** | **HLA-I (**A\*02:06, A\*23:01, A\*24:02, A\*32:01, B\*35:01, B\*51:01, B\*53:01**)**  **(Epitope:** IKWPWYIWLGFI**)** | | |
| **Coverage** | **Average hit** | **pc90** |
| Australia | 43.72% | 0.47 | 0.18 |
| Austria | 43.45% | 0.51 | 0.18 |
| Belgium | 22.38% | 0.23 | 0.13 |
| Brazil | 37.09% | 0.43 | 0.16 |
| China | 39.14% | 0.44 | 0.16 |
| England | 34.10% | 0.39 | 0.15 |
| France | 48.35% | 0.58 | 0.19 |
| Germany | 43.94% | 0.52 | 0.18 |
| Iran | 57.08% | 0.72 | 0.23 |
| Italy | 58.19% | 0.73 | 0.24 |
| Korea; South | 62.16% | 0.79 | 0.26 |
| Portugal | 52.95% | 0.66 | 0.21 |
| Spain | 29.88% | 0.33 | 0.14 |
| Sweden | 45.39% | 0.52 | 0.18 |
| Turkey | 0.00% | 0 | 0.1 |
| United States | 52.23% | 0.65 | 0.21 |
| **Average** | **41.88** | **0.5** | **0.18** |
| **Standard deviation** | **14.94** | **0.2** | **0.04** |
| **Country** | **HLA-I (**A\*02:06, A\*23:01, A\*24:02, A\*26:01, A\*33:01, A\*68:01, B\*08:01, B\*15:01, B\*35:01, B\*53:01, B\*58:01)  **(Epitope:** LQIPFAMQMAYRF**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 53.52% | 0.64 | 0.22 |
| Austria | 61.79% | 0.82 | 0.26 |
| Belgium | 44.03% | 0.52 | 0.18 |
| Brazil | 54.54% | 0.69 | 0.22 |
| China | 53.27% | 0.66 | 0.21 |
| England | 57.77% | 0.73 | 0.24 |
| France | 63.04% | 0.85 | 0.27 |
| Germany | 63.34% | 0.85 | 0.27 |
| Iran | 63.97% | 0.86 | 0.28 |
| Italy | 61.78% | 0.82 | 0.26 |
| Korea; South | 73.84% | 1.06 | 0.38 |
| Portugal | 58.91% | 0.77 | 0.24 |
| Spain | 31.60% | 0.35 | 0.15 |
| Sweden | 68.95% | 0.96 | 0.32 |
| Turkey | 0.00% | 0 | 0.1 |
| United States | 64.16% | 0.88 | 0.28 |
| **Average** | **54.66** | **0.72** | **0.24** |
| **Standard deviation** | **17.07** | **0.25** | **0.06** |
| **Country** | **HLA-I (**A\*02:06, A\*02:01, A\*23:01, B\*44:03, B\*40:01, B\*44:02**)**  **(Epitope:** CEFQFCNDPFL**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 46.66% | 0.55 | 0.19 |
| Austria | 63.12% | 0.79 | 0.27 |
| Belgium | 63.36% | 0.8 | 0.27 |
| Brazil | 47.02% | 0.54 | 0.19 |
| China | 33.32% | 0.37 | 0.15 |
| England | 70.42% | 0.94 | 0.34 |
| France | 57.31% | 0.71 | 0.23 |
| Germany | 67.38% | 0.87 | 0.31 |
| Iran | 42.76% | 0.46 | 0.17 |
| Italy | 50.94% | 0.6 | 0.2 |
| Korea; South | 55.50% | 0.69 | 0.22 |
| Portugal | 62.28% | 0.79 | 0.27 |
| Spain | 62.72% | 0.76 | 0.27 |
| Sweden | 63.98% | 0.82 | 0.28 |
| Turkey | 44.80% | 0.45 | 0.18 |
| United States | 62.56% | 0.79 | 0.27 |
| **Average** | **55.88** | **0.68** | **0.24** |
| **Standard deviation** | **10.14** | **0.16** | **0.05** |
| **Country** | **HLA-I (**A\*02:01, A\*02:03, A\*02:06, A\*23:01, A\*24:02, A\*26:01, A\*68:02, B\*35:01, B\*58:01**)**  **(Epitope:** GVFVSNGTHWFV**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 63.97% | 0.76 | 0.28 |
| Austria | 81.62% | 1.12 | 0.54 |
| Belgium | 58.14% | 0.63 | 0.24 |
| Brazil | 60.81% | 0.74 | 0.26 |
| China | 57.78% | 0.71 | 0.24 |
| England | 66.85% | 0.79 | 0.3 |
| France | 69.73% | 0.9 | 0.33 |
| Germany | 72.66% | 0.92 | 0.37 |
| Iran | 63.64% | 0.82 | 0.28 |
| Italy | 69.14% | 0.94 | 0.32 |
| Korea; South | 81.76% | 1.18 | 0.55 |
| Portugal | 71.48% | 0.92 | 0.35 |
| Spain | 58.35% | 0.65 | 0.24 |
| Sweden | 73.53% | 0.93 | 0.38 |
| Turkey | 44.80% | 0.45 | 0.18 |
| United States | 76.55% | 1.03 | 0.43 |
| **Average** | **66.93** | **0.84** | **0.33** |
| **Standard deviation** | **9.42** | **0.18** | **0.1** |
| **Country** | **HLA-I (**B\*07:02, B\*35:01, B\*51:01, B\*53:01**)**  **(Epitope:** FPNITNLCPF**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 14.41% | 0.15 | 0.12 |
| Austria | 44.80% | 0.49 | 0.18 |
| Brazil | 27.02% | 0.28 | 0.14 |
| China | 14.40% | 0.15 | 0.12 |
| England | 41.78% | 0.45 | 0.17 |
| France | 34.26% | 0.37 | 0.15 |
| Germany | 45.40% | 0.5 | 0.18 |
| Iran | 46.42% | 0.51 | 0.19 |
| Italy | 54.14% | 0.61 | 0.22 |
| Korea; South | 30.38% | 0.32 | 0.14 |
| Portugal | 35.70% | 0.38 | 0.16 |
| Spain | 25.63% | 0.27 | 0.13 |
| Sweden | 45.08% | 0.48 | 0.18 |
| United States | 38.36% | 0.42 | 0.16 |
| **Average** | **35.56** | **0.38** | **0.16** |
| **Standard deviation** | **11.58** | **0.13** | **0.03** |
| **Country** | **HLA-I (**A\*02:01, A\*02:03, A\*02:0, A\*26:01, A\*68:02, B\*15:01**)**  **(Epitope:** GFIAGLIAIVM**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 34.37% | 0.36 | 0.15 |
| Austria | 70.23% | 0.86 | 0.34 |
| Belgium | 46.86% | 0.47 | 0.19 |
| Brazil | 41.29% | 0.44 | 0.17 |
| China | 42.62% | 0.5 | 0.17 |
| England | 58.49% | 0.66 | 0.24 |
| France | 54.15% | 0.62 | 0.22 |
| Germany | 61.76% | 0.72 | 0.26 |
| Iran | 46.56% | 0.49 | 0.19 |
| Italy | 45.43% | 0.49 | 0.18 |
| Korea; South | 60.05% | 0.75 | 0.25 |
| Portugal | 50.45% | 0.55 | 0.2 |
| Spain | 51.38% | 0.53 | 0.21 |
| Sweden | 62.27% | 0.77 | 0.27 |
| Turkey | 44.80% | 0.45 | 0.18 |
| United States | 54.78% | 0.61 | 0.22 |
| **Average** | **51.59** | **0.58** | **0.22** |
| **Standard deviation** | **9.07** | **0.14** | **0.05** |
| **Country** | **HLA-I (**A\*30:01, A\*68:02, B\*08:01, B\*15:01, B\*35:01, B\*57:01, B\*58:01**)**  **(Epitope:** EVFNATRFASVYAW**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 23.22% | 0.25 | 0.13 |
| Austria | 60.56% | 0.79 | 0.25 |
| Belgium | 28.52% | 0.3 | 0.14 |
| Brazil | 26.30% | 0.29 | 0.14 |
| China | 29.23% | 0.32 | 0.14 |
| England | 50.57% | 0.57 | 0.2 |
| France | 49.59% | 0.59 | 0.2 |
| Germany | 50.93% | 0.59 | 0.2 |
| Iran | 41.20% | 0.47 | 0.17 |
| Italy | 43.89% | 0.48 | 0.18 |
| Korea; South | 42.85% | 0.49 | 0.17 |
| Portugal | 31.46% | 0.34 | 0.15 |
| Spain | 33.57% | 0.36 | 0.15 |
| Sweden | 45.76% | 0.5 | 0.18 |
| United States | 41.55% | 0.48 | 0.17 |
| **Average** | **39.95** | **0.45** | **0.17** |
| **Standard deviation** | **10.45** | **0.14** | **0.03** |
| **Country** | **HLA-I (**A\*01:01, A\*02:06, A\*30:02, A\*26:01, A\*68:01, A\*68:02, B\*15:01**)**  **(Epitope:** SGWTAGAAAYYV**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 22.70% | 0.24 | 0.13 |
| Austria | 58.26% | 0.7 | 0.24 |
| Belgium | 41.17% | 0.44 | 0.17 |
| Brazil | 40.75% | 0.45 | 0.17 |
| China | 27.69% | 0.3 | 0.14 |
| England | 51.83% | 0.6 | 0.21 |
| France | 50.01% | 0.58 | 0.2 |
| Germany | 50.49% | 0.6 | 0.2 |
| Iran | 26.04% | 0.28 | 0.14 |
| Italy | 44.40% | 0.49 | 0.18 |
| Korea; South | 40.96% | 0.47 | 0.17 |
| Portugal | 35.73% | 0.4 | 0.16 |
| Spain | 7.67% | 0.08 | 0.11 |
| Sweden | 48.14% | 0.58 | 0.19 |
| Turkey | 0.00% | 0 | 0.1 |
| United States | 37.92% | 0.43 | 0.16 |
| **Average** | **36.48** | **0.42** | **0.17** |
| **Standard deviation** | **15.59** | **0.19** | **0.04** |
| **Country** | **HLA-I (**A\*03:01, A\*11:01, A\*23:01, A\*24:02, A\*68:01, B\*15:01, B\*58:01**)**  **(Epitope:** LYNSASFSTFKCY**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 65.67% | 0.8 | 0.29 |
| Austria | 57.18% | 0.69 | 0.23 |
| Belgium | 58.66% | 0.67 | 0.24 |
| Brazil | 53.18% | 0.63 | 0.21 |
| China | 71.67% | 0.94 | 0.35 |
| England | 58.57% | 0.72 | 0.24 |
| France | 60.43% | 0.76 | 0.25 |
| Germany | 65.45% | 0.84 | 0.29 |
| Iran | 51.56% | 0.6 | 0.21 |
| Italy | 53.70% | 0.65 | 0.22 |
| Korea; South | 69.41% | 0.93 | 0.33 |
| Portugal | 58.43% | 0.71 | 0.24 |
| Spain | 14.87% | 0.15 | 0.12 |
| Sweden | 82.15% | 1.17 | 0.56 |
| United States | 59.48% | 0.74 | 0.25 |
| **Average** | **58.69** | **0.73** | **0.27** |
| **Standard deviation** | **14.05** | **0.21** | **0.09** |
| **Country** | **HLA-I (**A\*02:01, A\*02:03, A\*02:06, A\*26:01, A\*68:02, B\*51:01, B\*58:01**)**  **(Epitope:** NFTISVTTEILPV**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 35.16% | 0.38 | 0.15 |
| Austria | 70.86% | 0.88 | 0.34 |
| Belgium | 46.86% | 0.47 | 0.19 |
| Brazil | 46.15% | 0.52 | 0.19 |
| China | 42.50% | 0.5 | 0.17 |
| England | 57.87% | 0.65 | 0.24 |
| France | 57.26% | 0.69 | 0.23 |
| Germany | 60.38% | 0.7 | 0.25 |
| Iran | 58.71% | 0.73 | 0.24 |
| Italy | 61.45% | 0.78 | 0.26 |
| Korea; South | 63.85% | 0.84 | 0.28 |
| Portugal | 57.71% | 0.69 | 0.24 |
| Spain | 58.69% | 0.68 | 0.24 |
| Sweden | 50.90% | 0.55 | 0.2 |
| Turkey | 44.80% | 0.45 | 0.18 |
| United States | 57.96% | 0.68 | 0.24 |
| **Average** | **54.44** | **0.64** | **0.23** |
| **Standard deviation** | **8.9** | **0.14** | **0.05** |
| **Country** | **HLA-I (**A\*02:01, A\*02:03, A\*02:06, A\*03:01, A\*11:01, A\*23:01, A\*24:02, B\*08:01, B\*15:01**)**  **(Epitope:** GYLQPRTFLLKY**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 81.10% | 1.13 | 0.53 |
| Austria | 85.58% | 1.3 | 0.69 |
| Belgium | 85.61% | 1.26 | 0.7 |
| Brazil | 67.28% | 0.85 | 0.31 |
| China | 83.20% | 1.17 | 0.6 |
| England | 89.22% | 1.45 | 0.93 |
| France | 82.21% | 1.22 | 0.56 |
| Germany | 89.89% | 1.45 | 0.99 |
| Iran | 75.10% | 1 | 0.4 |
| Italy | 74.41% | 0.99 | 0.39 |
| Korea; South | 85.94% | 1.27 | 0.71 |
| Portugal | 80.70% | 1.12 | 0.52 |
| Spain | 61.83% | 0.73 | 0.26 |
| Sweden | 95.44% | 1.68 | 1.14 |
| Turkey | 44.80% | 0.45 | 0.18 |
| United States | 82.50% | 1.16 | 0.57 |
| **Average** | **79.05** | **1.14** | **0.59** |
| **Standard deviation** | **12.03** | **0.29** | **0.26** |
| **Country** | **HLA-I (**A\*01:01, A\*02:03, A\*26:01, A\*30:02, A\*68:02, B\*15:01**)**  **(Epitope:** YTNSFTRGVYY**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 20.38% | 0.21 | 0.13 |
| Austria | 54.61% | 0.65 | 0.22 |
| Belgium | 32.10% | 0.33 | 0.15 |
| Brazil | 28.10% | 0.3 | 0.14 |
| China | 29.95% | 0.33 | 0.14 |
| England | 49.46% | 0.56 | 0.2 |
| France | 46.98% | 0.54 | 0.19 |
| Germany | 45.38% | 0.52 | 0.18 |
| Iran | 19.18% | 0.2 | 0.12 |
| Italy | 41.57% | 0.45 | 0.17 |
| Korea; South | 31.30% | 0.35 | 0.15 |
| Portugal | 29.27% | 0.32 | 0.14 |
| Spain | 4.08% | 0.04 | 0.1 |
| Sweden | 42.92% | 0.49 | 0.18 |
| Turkey | 0.00% | 0 | 0.1 |
| United States | 31.80% | 0.35 | 0.15 |
| **Average** | **31.69** | **0.35** | **0.15** |
| **Standard deviation** | **14.91** | **0.18** | **0.03** |
| **Country** | **HLA-I (**B\*35:01, B\*51:01, B\*53:01, B\*57:01**)**  **(Epitope:** FLPFFSNVTWF**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 6.58% | 0.07 | 0.11 |
| Austria | 28.77% | 0.3 | 0.14 |
| Belgium | 3.96% | 0.04 | 0.1 |
| Brazil | 17.21% | 0.18 | 0.12 |
| China | 13.24% | 0.14 | 0.12 |
| England | 22.73% | 0.24 | 0.13 |
| France | 28.12% | 0.3 | 0.14 |
| Germany | 28.31% | 0.3 | 0.14 |
| Iran | 45.68% | 0.5 | 0.18 |
| Italy | 45.62% | 0.49 | 0.18 |
| Korea; South | 25.10% | 0.26 | 0.13 |
| Portugal | 30.65% | 0.32 | 0.14 |
| Spain | 33.69% | 0.36 | 0.15 |
| Sweden | 16.38% | 0.17 | 0.12 |
| United States | 30.35% | 0.32 | 0.14 |
| **Average** | **25.09** | **0.27** | **0.14** |
| **Standard deviation** | **11.79** | **0.13** | **0.02** |
| **Country** | **HLA-I (**A\*23:01, A\*24:02, B\*44:02, B\*44:03**)**  **(Epitope:** EQYIKWPWYIW**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 43.52% | 0.47 | 0.18 |
| Austria | 38.28% | 0.44 | 0.16 |
| Belgium | 31.13% | 0.35 | 0.15 |
| Brazil | 30.71% | 0.34 | 0.14 |
| China | 27.18% | 0.28 | 0.14 |
| England | 40.60% | 0.47 | 0.17 |
| France | 41.15% | 0.48 | 0.17 |
| Germany | 38.88% | 0.45 | 0.16 |
| Iran | 13.30% | 0.14 | 0.12 |
| Italy | 29.14% | 0.32 | 0.14 |
| Korea; South | 49.35% | 0.56 | 0.2 |
| Portugal | 44.81% | 0.53 | 0.18 |
| Spain | 19.67% | 0.21 | 0.12 |
| Sweden | 41.43% | 0.46 | 0.17 |
| United States | 40.96% | 0.47 | 0.17 |
| **Average** | **35.34** | **0.4** | **0.16** |
| **Standard deviation** | **9.59** | **0.12** | **0.02** |
| **Country** | **HLA-I (**A\*30:02, A\*23:01, A\*24:02, B\*58:01, B\*35:01, B\*15:01**)**  **(Epitope:** VYSSANNCTFEY**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 45.42% | 0.5 | 0.18 |
| Austria | 39.78% | 0.46 | 0.17 |
| Belgium | 18.64% | 0.19 | 0.12 |
| Brazil | 35.02% | 0.4 | 0.15 |
| China | 42.60% | 0.5 | 0.17 |
| England | 33.33% | 0.38 | 0.15 |
| France | 43.22% | 0.51 | 0.18 |
| Germany | 43.39% | 0.51 | 0.18 |
| Iran | 33.60% | 0.38 | 0.15 |
| Italy | 47.75% | 0.57 | 0.19 |
| Korea; South | 61.81% | 0.79 | 0.26 |
| Portugal | 43.26% | 0.51 | 0.18 |
| Spain | 13.91% | 0.14 | 0.12 |
| Sweden | 56.07% | 0.69 | 0.23 |
| United States | 49.63% | 0.6 | 0.2 |
| **Average** | **40.5** | **0.48** | **0.18** |
| **Standard deviation** | **12.11** | **0.16** | **0.04** |
| **Country** | **HLA-I (**A\*03:01, A\*11:01, A\*30:02, A\*68:01, B\*57:01, B\*58:01**)**  **(Epitope:** CTLKSFTVEKGIY**)** | | |
|  | **Coverage** | **Average hit** | **pc90** |
| Australia | 35.47% | 0.39 | 0.15 |
| Austria | 40.06% | 0.44 | 0.17 |
| Belgium | 51.72% | 0.59 | 0.21 |
| Brazil | 38.96% | 0.43 | 0.16 |
| China | 51.87% | 0.57 | 0.21 |
| England | 46.36% | 0.53 | 0.19 |
| France | 44.48% | 0.52 | 0.18 |
| Germany | 48.52% | 0.56 | 0.19 |
| Iran | 50.31% | 0.59 | 0.2 |
| Italy | 44.28% | 0.51 | 0.18 |
| Korea; South | 33.08% | 0.36 | 0.15 |
| Portugal | 39.27% | 0.44 | 0.16 |
| Spain | 20.34% | 0.22 | 0.13 |
| Sweden | 57.34% | 0.62 | 0.23 |
| United States | 39.56% | 0.45 | 0.17 |
| **Average** | **42.77** | **0.48** | **0.18** |
| **Standard deviation** | **8.86** | **0.1** | **0.03** |
| **a**, projected population coverage. **b**, Average number of epitope hits / HLA combinations recognized by the population. **C**, Minimum number of epitope hits / HLA combinations recognized by 90% of the population. | | | |