**Supplementary Methods**

**Study subjects and Demographic information**

All the 1,516 controls in the GWAS stage were individuals with neither GD nor family history of GD, and without any other autoimmune disorders. Control subjects were matched for sex with cases and were over 35 years. Since GD and other autoimmune thyroid diseases (AITD) have a preponderance in the young female population, this age criteria could reduce the number of controls who might develop GD later on.

**Methods**

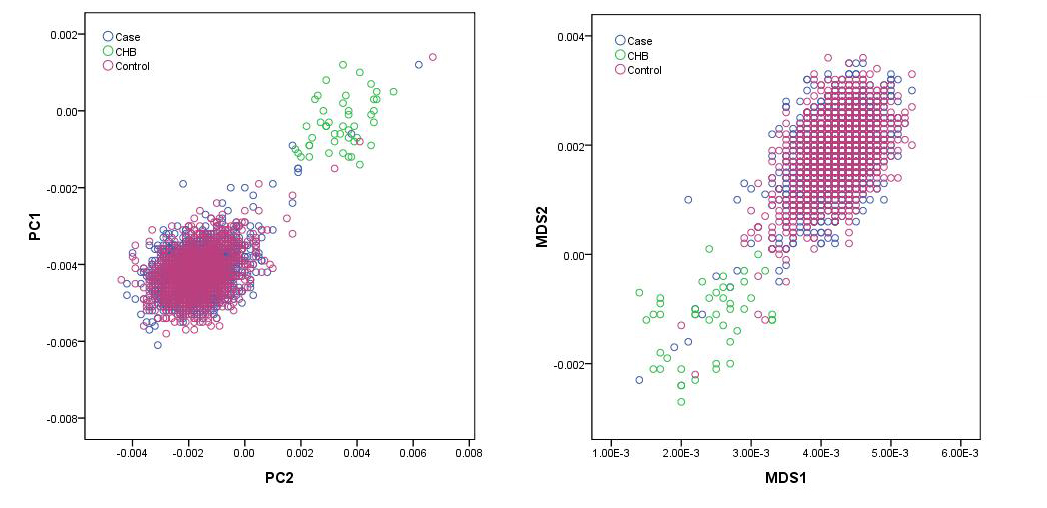
We also tested the possible influence of the positions with multiallelic residues using a logistic regression model by means of an omnibus test (See supplementary methods). For a multiallelic locus with m possible alleles, we included *m*–1 alleles as independent variables in the logistic-regression model, and we arbitrarily selected the most common allele in the controls as the reference allele [[1](#_ENREF_1) [2](#_ENREF_2)]. This resulted in the following logistic-regression model:

where β0 is the logistic regression intercept, β1,*j* is the additive effects of allele *j*and *x*i,j is the allelic dosage (using the best-guess genotype or imputed dosage) of allele *j* in individual *i*. To assess the statistical signifi­cance of a tested position, we calculated the improvement of fit for the alternative model over the null model. We calculated the model improvement as deviance, defined by Δdeviancealt–null = –2ln (likelihoodalt/likelihoodnull), which follows a χ2distribution with *m* – 1 degrees of freedom, from which we calculated the omnibus *P* value (*P*omnibus).

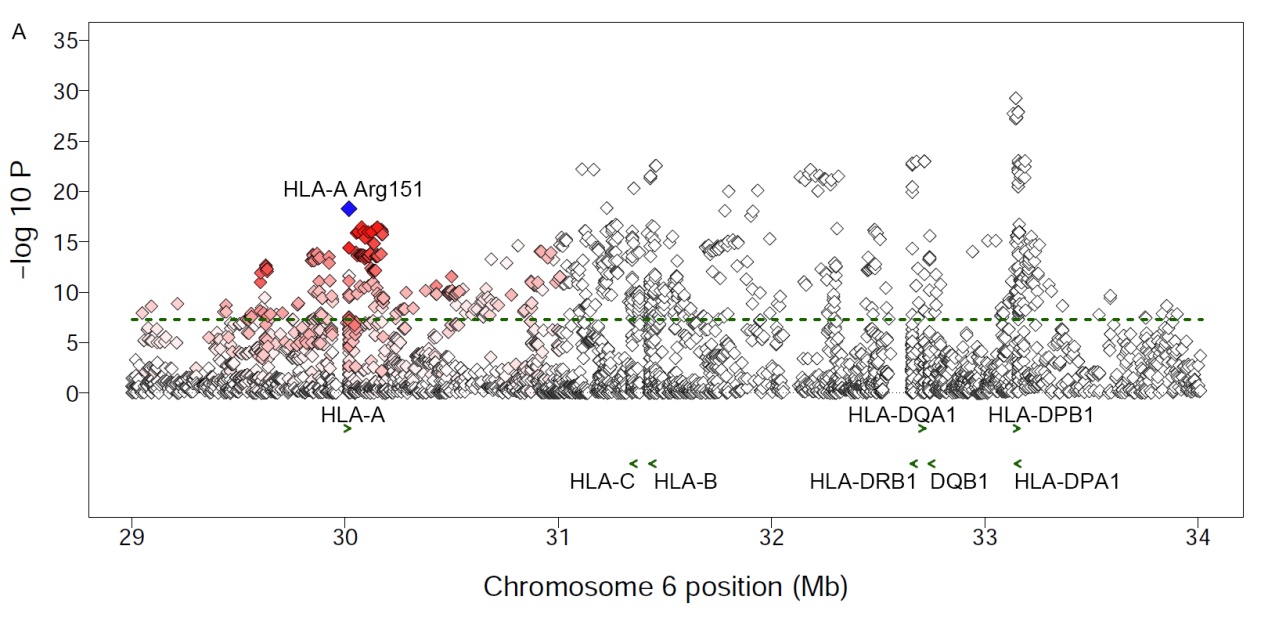
1. Hu X, Deutsch AJ, Lenz TL, et al. Additive and interaction effects at three amino acid positions in HLA-DQ and HLA-DR molecules drive type 1 diabetes risk. Nature genetics 2015;**47**(8):898-905 doi: 10.1038/ng.3353

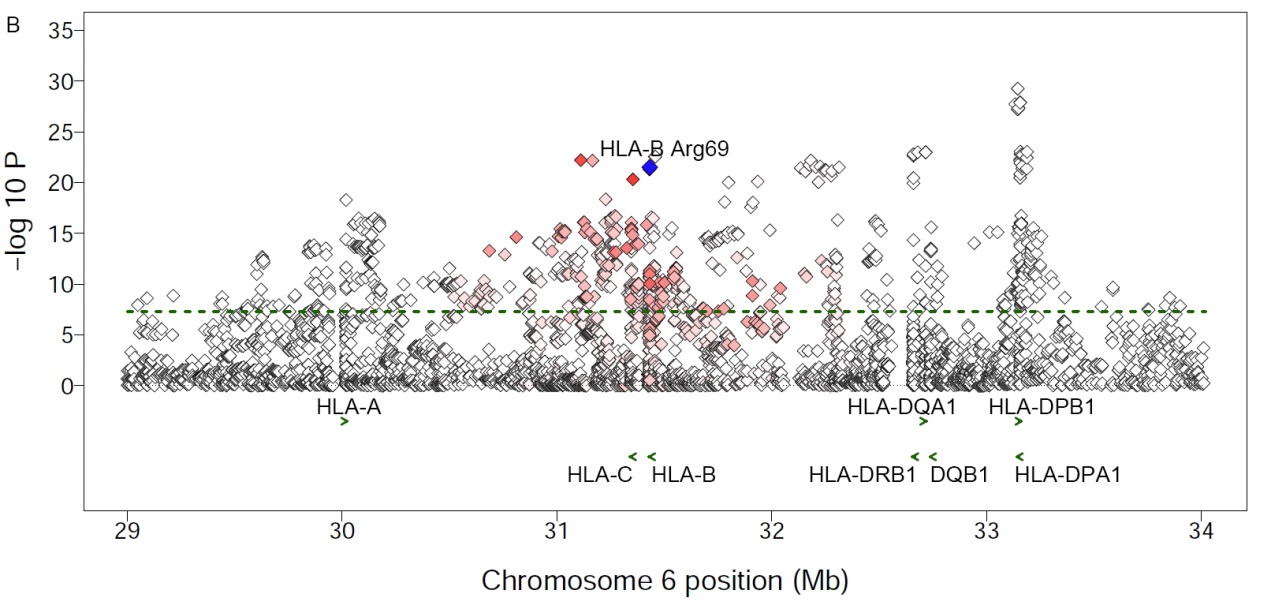
2. Zhu M, Dai J, Wang C, et al. Fine mapping the MHC region identified four independent variants modifying susceptibility to chronic hepatitis B in Han Chinese. Human molecular genetics 2016;**25**(6):1225-32 doi: 10.1093/hmg/ddw003[published Online First: Epub Date]|.

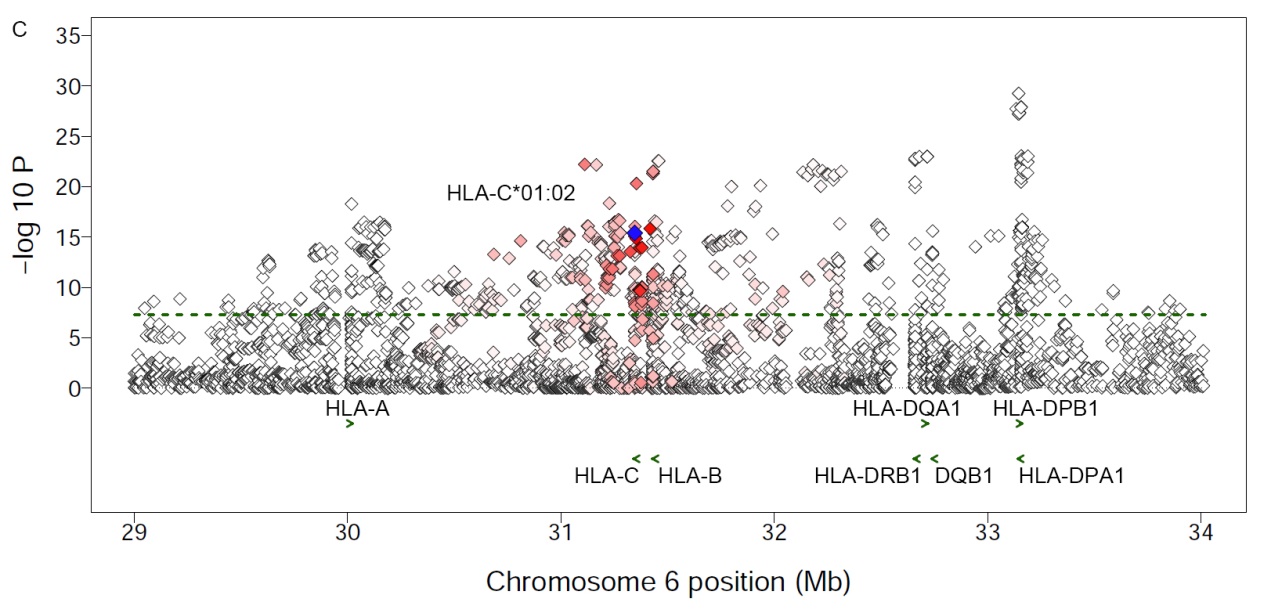
**Supplementary Figure 1** Plots of principal component analysis (PCA) and multidimensional scaling (MDS) analysis in our cohorts and the HapMap CHB samples. (**a**) Case-control cohorts (1,468 GD cases and 1,490 controls) and 45 Chinese (CHB) individuals from HapMap data were plotted using the first two eigenvectors produced by the EIGENSOFT software package. (**b**) The case-control cohorts and 45 Chinese (CHB) individuals were plotted by their first and second dimension values. MDS analysis was done using PLINK (http://pngu.mgh.harvard.edu/purcell/plink/).

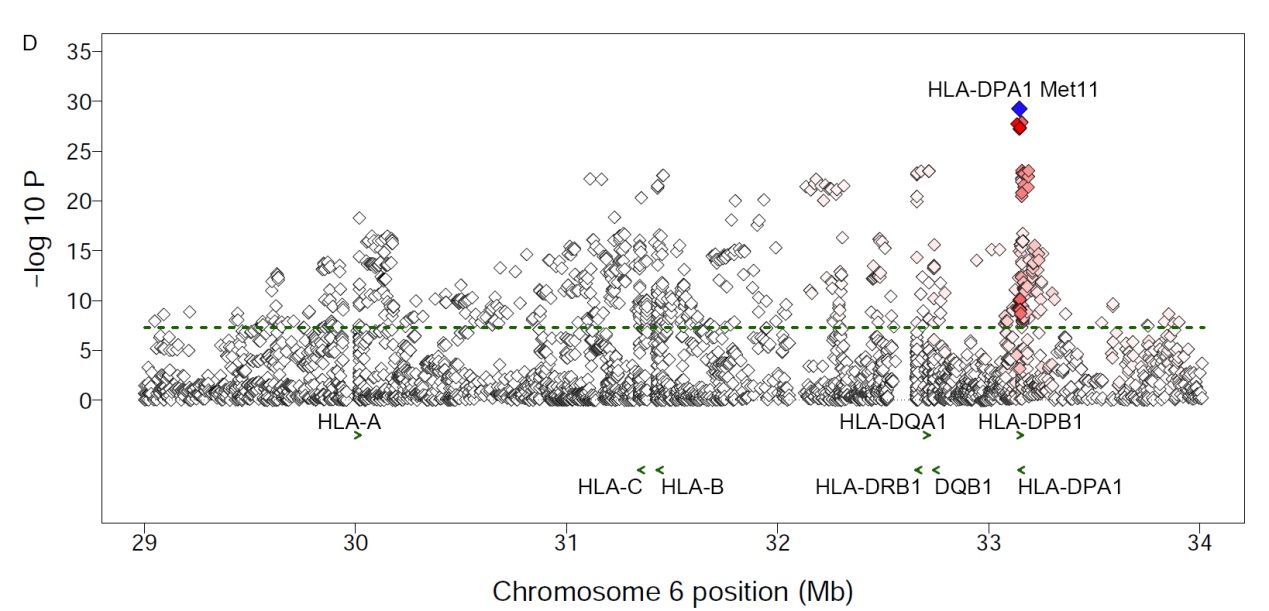


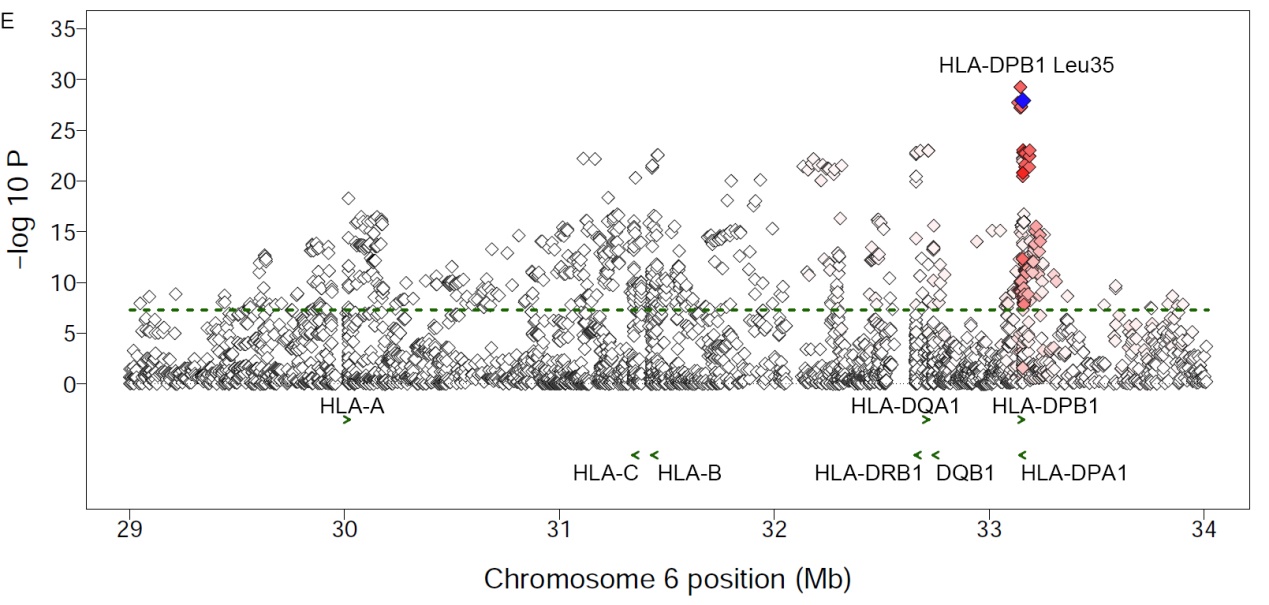
**Supplementary Figure 2** Linkage Disequilibrium (LD) and association plots of HLA region. *P* values were calculated by comparing all GD cases with controls. Each diamond represents a SNP, *HLA* amino acid residue or a classical *HLA* allele. The most strongly associated variant (*HLA* amino acid residue or classical *HLA* allele) of each HLA classical gene is indicated by a large blue diamond. The color of each variant spot reflects its r2 with the top variant (large blue diamond), changing from red to white. LD plot of A) HLA-A Arg151, B) HLA-B Arg 69, C) HLA\*C 01:02, D) HLA-DPA1, E) Met 11 HLA-DPB1 Leu35, F) HLA-DQA1 His52 and G) HLA-DQB1 Ala-10 with HLA variation.

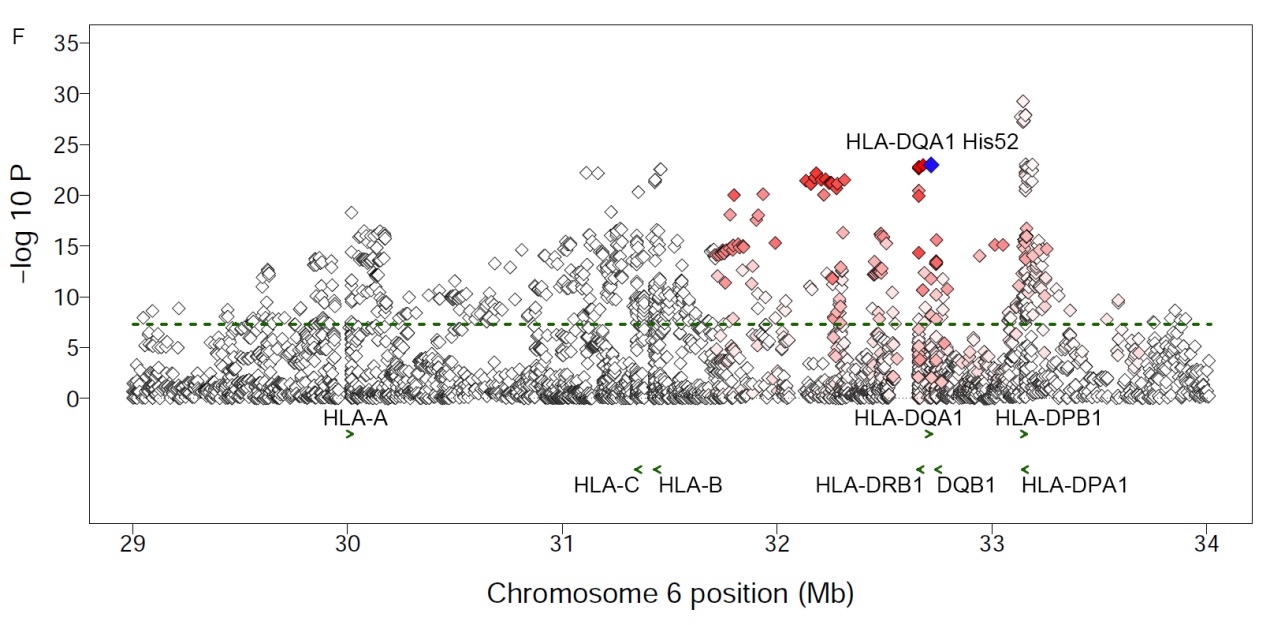


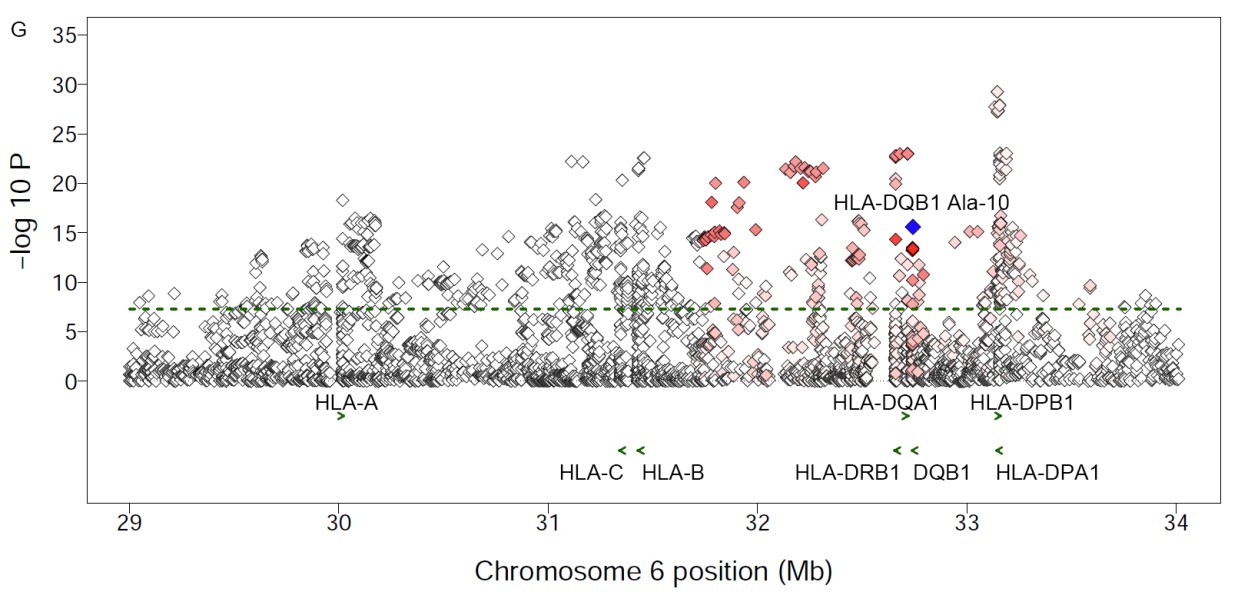


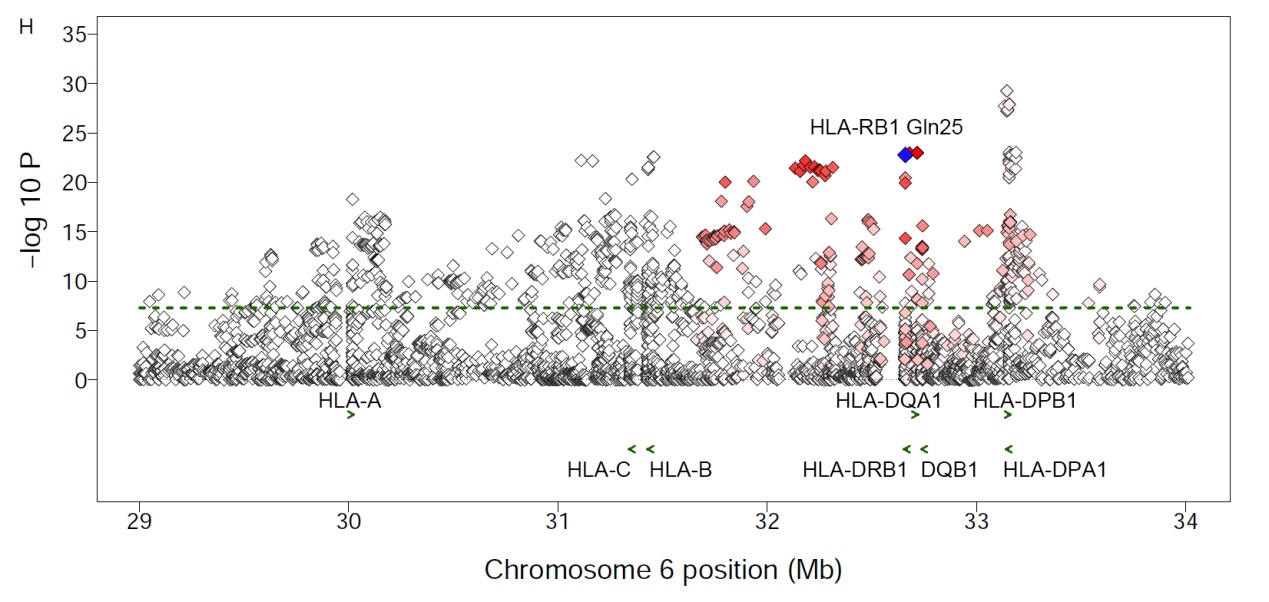












Supplementary Table S1. Demographic Information for the Samples

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Case | | |  | Control | | |
| Number of sample | Average age at enrollment | Age range at enrollment |  | Number of sample | Average age at enrollment | Age range at enrollment |
| Male | 370 | 40.0±14.3 | 10-81 |  | 368 | 46.8±10.3 | 35-87 |
| Female | 1166 | 39.1±13.7 | 10-81 |  | 1148 | 44.6±8.7 | 31-80 |
| Total | 1536 | 39.3±13.8 | 10-81 |  | 1516 | 45.1±9.1 | 31-87 |

Supplementary Table S2. Association results of imputed variations GD risk.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Build 36 position  (bp) | Variant ID | plink INFO score | Imputation score  (Rsq) |  | Allele 1 Frequency | |  | Nominal | | |
| Allele 1 | 1,468 GD patients | 1,490 controls | Allele 2 | Degree of Freedom | *P*logitic | OR (95%CI) |
| 30018537 | HLA-A position 9 |  |  |  |  |  |  | 3 | 4.94E-11 |  |
| 30018696 | HLA-A position 62 |  |  |  |  |  |  | 4 | 1.58E-06 |  |
| 30018699 | HLA-A position 63 |  |  |  |  |  |  | 2 | 7.17E-03 |  |
| 30018738 | HLA-A position 76 |  |  |  |  |  |  | 2 | 8.88E-01 |  |
| 30018741 | HLA-A position 77 |  |  |  |  |  |  | 2 | 4.43E-02 |  |
| 30019036 | HLA-A position 95 |  |  |  |  |  |  | 2 | 3.83E-07 |  |
| 30019042 | HLA-A position 97 |  |  |  |  |  |  | 2 | 4.08E-08 |  |
| 30019048 | HLA-A position 99 |  |  |  |  |  |  | 2 | 3.60E-12 |  |
| 30019093 | HLA-A position 114 |  |  |  |  |  |  | 3 | 1.16E-15 |  |
| 30019099 | HLA-A position 116 |  |  |  |  |  |  | 2 | 5.87E-12 |  |
| 30019207 | HLA-A position 152 |  |  |  |  |  |  | 3 | 1.54E-09 |  |
| 30019219 | HLA-A position 156 |  |  |  |  |  |  | 3 | 4.79E-03 |  |
| 31345841 | HLA-C position 275 |  |  |  |  |  |  | 3 | 3.85E-01 |  |
| 31346909 | HLA-C position 156 |  |  |  |  |  |  | 3 | 1.54E-10 |  |
| 31346921 | HLA-C position 152 |  |  |  |  |  |  | 2 | 2.14E-02 |  |
| 31347029 | HLA-C position 116 |  |  |  |  |  |  | 3 | 3.56E-16 |  |
| 31347080 | HLA-C position 99 |  |  |  |  |  |  | 3 | 2.82E-14 |  |
| 31347600 | HLA-C position 9 |  |  |  |  |  |  | 3 | 3.53E-21 |  |
| 31431300 | HLA-B position 199 |  |  |  |  |  |  | 2 | 1.83E-10 |  |
| 31431982 | HLA-B position 163 |  |  |  |  |  |  | 2 | 1.69E-04 |  |
| 31432003 | HLA-B position 156 |  |  |  |  |  |  | 3 | 9.69E-11 |  |
| 31432123 | HLA-B position 116 |  |  |  |  |  |  | 4 | 3.79E-12 |  |
| 31432180 | HLA-B position 97 |  |  |  |  |  |  | 4 | 6.89E-05 |  |
| 31432186 | HLA-B position 95 |  |  |  |  |  |  | 2 | 2.33E-04 |  |
| 31432476 | HLA-B position 80 |  |  |  |  |  |  | 2 | 1.70E-14 |  |
| 31432485 | HLA-B position 77 |  |  |  |  |  |  | 2 | 2.10E-09 |  |
| 31432506 | HLA-B position 70 |  |  |  |  |  |  | 3 | 3.04E-11 |  |
| 31432509 | HLA-B position 69 |  |  |  |  |  |  | 2 | 9.32E-22 |  |
| 31432515 | HLA-B position 67 |  |  |  |  |  |  | 4 | 3.54E-13 |  |
| 31432518 | HLA-B position 66 |  |  |  |  |  |  | 2 | 2.94E-22 |  |
| 31432581 | HLA-B position 45 |  |  |  |  |  |  | 4 | 5.77E-02 |  |
| 31432644 | HLA-B position 24 |  |  |  |  |  |  | 2 | 1.65E-10 |  |
| 31432689 | HLA-B position 9 |  |  |  |  |  |  | 3 | 7.92E-01 |  |
| 32657590 | HLA-DRB1 position 96 |  |  |  |  |  |  | 4 | 1.04E-04 |  |
| 32659926 | HLA-DRB1 position 74 |  |  |  |  |  |  | 4 | 2.03E-23 |  |
| 32659935 | HLA-DRB1 position 71 |  |  |  |  |  |  | 3 | 4.80E-05 |  |
| 32659938 | HLA-DRB1 position 70 |  |  |  |  |  |  | 2 | 8.61E-07 |  |
| 32659947 | HLA-DRB1 position 67 |  |  |  |  |  |  | 3 | 1.17E-01 |  |
| 32659968 | HLA-DRB1 position 60 |  |  |  |  |  |  | 3 | 2.97E-04 |  |
| 32659977 | HLA-DRB1 position 57 |  |  |  |  |  |  | 4 | 5.89E-08 |  |
| 32660037 | HLA-DRB1 position 37 |  |  |  |  |  |  | 5 | 3.25E-18 |  |
| 32660058 | HLA-DRB1 position 30 |  |  |  |  |  |  | 5 | 3.04E-25 |  |
| 32660064 | HLA-DRB1 position 28 |  |  |  |  |  |  | 3 | 5.22E-22 |  |
| 32660070 | HLA-DRB1 position 26 |  |  |  |  |  |  | 2 | 2.05E-06 |  |
| 32660100 | HLA-DRB1 position 16 |  |  |  |  |  |  | 2 | 1.80E-01 |  |
| 32660109 | HLA-DRB1 position 13 |  |  |  |  |  |  | 5 | 3.16E-22 |  |
| 32660115 | HLA-DRB1 position 11 |  |  |  |  |  |  | 5 | 3.19E-24 |  |
| 32660121 | HLA-DRB1 position 9 |  |  |  |  |  |  | 2 | 2.23E-06 |  |
| 32717191 | HLA-DQA1 position 47 |  |  |  |  |  |  | 3 | 7.94E-23 |  |
| 32717200 | HLA-DQA1 position 50 |  |  |  |  |  |  | 2 | 3.16E-02 |  |
| 32717206 | HLA-DQA1 position 52 |  |  |  |  |  |  | 2 | 7.69E-23 |  |
| 32717209 | HLA-DQA1 position 53 |  |  |  |  |  |  | 2 | 3.16E-02 |  |
| 32717218 | HLA-DQA1 position 56 |  |  |  |  |  |  | 2 | 4.58E-09 |  |
| 32717257 | HLA-DQA1 position 69 |  |  |  |  |  |  | 2 | 5.66E-04 |  |
| 32717278 | HLA-DQA1 position 76 |  |  |  |  |  |  | 2 | 4.58E-09 |  |
| 32717988 | HLA-DQA1 position 175 |  |  |  |  |  |  | 2 | 6.94E-06 |  |
| 32737913 | HLA-DQB1 position 125 |  |  |  |  |  |  | 3 | 3.16E-01 |  |
| 32740576 | HLA-DQB1 position 87 |  |  |  |  |  |  | 2 | 3.19E-03 |  |
| 32740579 | HLA-DQB1 position 86 |  |  |  |  |  |  | 2 | 1.08E-05 |  |
| 32740615 | HLA-DQB1 position 74 |  |  |  |  |  |  | 3 | 9.92E-13 |  |
| 32740624 | HLA-DQB1 position 71 |  |  |  |  |  |  | 4 | 3.01E-13 |  |
| 32740627 | HLA-DQB1 position 70 |  |  |  |  |  |  | 3 | 5.97E-03 |  |
| 32740666 | HLA-DQB1 position 57 |  |  |  |  |  |  | 4 | 3.27E-20 |  |
| 32740672 | HLA-DQB1 position 55 |  |  |  |  |  |  | 3 | 1.41E-12 |  |
| 32740726 | HLA-DQB1 position 37 |  |  |  |  |  |  | 2 | 1.59E-14 |  |
| 32740747 | HLA-DQB1 position 30 |  |  |  |  |  |  | 2 | 1.90E-14 |  |
| 32740759 | HLA-DQB1 position 26 |  |  |  |  |  |  | 3 | 3.51E-04 |  |
| 32740810 | HLA-DQB1 position 9 |  |  |  |  |  |  | 2 | 2.52E-06 |  |
| 32742277 | HLA-DQB1 position -4 |  |  |  |  |  |  | 2 | 2.62E-02 |  |
| 32742280 | HLA-DQB1 position -5 |  |  |  |  |  |  | 3 | 6.07E-02 |  |
| 32742283 | HLA-DQB1 position -6 |  |  |  |  |  |  | 3 | 1.64E-03 |  |
| 32742292 | HLA-DQB1 position -9 |  |  |  |  |  |  | 2 | 2.54E-02 |  |
| 32742295 | HLA-DQB1 position -10 |  |  |  |  |  |  | 2 | 2.32E-15 |  |
| 32742316 | HLA-DQB1 position -17 |  |  |  |  |  |  | 2 | 5.61E-05 |  |
| 32742319 | HLA-DQB1 position -18 |  |  |  |  |  |  | 2 | 6.45E-05 |  |
| 32742328 | HLA-DQB1 position -21 |  |  |  |  |  |  | 2 | 2.62E-02 |  |
| 32742346 | HLA-DQB1 position -27 |  |  |  |  |  |  | 2 | 2.54E-02 |  |
| 33145617 | HLA-DPA1 position 11 |  |  |  |  |  |  | 1 | 1.19E-31 |  |
| 33156439 | HLA-DPB1 position 9 |  |  |  |  |  |  | 2 | 2.25E-22 |  |
| 33156517 | HLA-DPB1 position 35 |  |  |  |  |  |  | 2 | 7.60E-31 |  |
| 33156577 | HLA-DPB1 position 55 |  |  |  |  |  |  | 2 | 5.73E-31 |  |
| 33156640 | HLA-DPB1 position 76 |  |  |  |  |  |  | 2 | 3.83E-07 |  |
| 33160714 | HLA-DPB1 position 96 |  |  |  |  |  |  | 2 | 1.32E-11 |  |
| 33160936 | HLA-DPB1 position 170 |  |  |  |  |  |  | 2 | 1.32E-11 |  |
| 33160960 | HLA-DPB1 position 178 |  |  |  |  |  |  | 2 | 7.47E-04 |  |
| 33161588 | HLA-DPB1 position 205 |  |  |  |  |  |  | 2 | 2.48E-33 |  |
| 30018338 | AA\_A\_-15\_30018338\_L | 0.9826 | 0.999 | P | 0.46 | 0.53 | A | 1 | 3.91E-08 | 0.75 ( 0.67- 0.83) |
| 30018338 | AA\_A\_-15\_30018338\_V | 0.9817 | 0.998 | P | 0.54 | 0.47 | A | 1 | 3.91E-08 | 1.34 ( 1.21- 1.49) |
| 30018350 | AA\_A\_-11\_30018350\_L | 0.977 | 0.999 | P | 0.13 | 0.18 | A | 1 | 3.79E-08 | 0.66 ( 0.57- 0.77) |
| 30018350 | AA\_A\_-11\_30018350\_S | 0.9749 | 0.997 | P | 0.87 | 0.82 | A | 1 | 3.79E-08 | 1.51 ( 1.30- 1.74) |
| 30018537 | AA\_A\_9\_30018537\_F | 1.0005 | 0.994 | P | 0.35 | 0.31 | A | 1 | 2.81E-03 | 1.18 ( 1.06- 1.32) |
| 30018537 | AA\_A\_9\_30018537\_S | 1.0131 | 0.994 | P | 0.22 | 0.26 | A | 1 | 8.63E-05 | 0.79 ( 0.70- 0.89) |
| 30018537 | AA\_A\_9\_30018537\_T | 0.986 | 1 | P | 0.12 | 0.16 | A | 1 | 1.48E-06 | 0.69 ( 0.59- 0.80) |
| 30018537 | AA\_A\_9\_30018537\_Y | 1.0122 | 0.995 | P | 0.32 | 0.27 | A | 1 | 2.43E-05 | 1.28 ( 1.14- 1.43) |
| 30018561 | AA\_A\_17\_30018561 | 1.0271 | 0.995 | S | 0.07 | 0.11 | R | 1 | 6.80E-10 | 0.56 ( 0.47- 0.67) |
| 30018567 | AA\_A\_19\_30018567 | 0.9564 | 0.958 | K | 0.01 | 0.01 | E | 1 | 1.05E-01 | 1.53 ( 0.92- 2.55) |
| 30018642 | AA\_A\_44\_30018642 | 0.9837 | 0.998 | K | 0.04 | 0.04 | R | 1 | 2.45E-01 | 0.85 ( 0.65- 1.11) |
| 30018678 | AA\_A\_56\_30018678 | 0.9957 | 0.996 | R | 0.10 | 0.16 | G | 1 | 1.92E-11 | 0.58 ( 0.50- 0.68) |
| 30018696 | AA\_A\_62\_30018696\_E | 1.0071 | 0.994 | P | 0.15 | 0.15 | A | 1 | 7.06E-01 | 1.03 ( 0.89- 1.19) |
| 30018696 | AA\_A\_62\_30018696\_G | 1.0044 | 0.996 | P | 0.34 | 0.28 | A | 1 | 3.31E-07 | 1.34 ( 1.20- 1.49) |
| 30018696 | AA\_A\_62\_30018696\_L | 0.9858 | 1 | P | 0.01 | 0.01 | A | 1 | 5.95E-01 | 1.13 ( 0.73- 1.75) |
| 30018696 | AA\_A\_62\_30018696\_Q | 0.9985 | 0.999 | P | 0.38 | 0.42 | A | 1 | 1.68E-03 | 0.85 ( 0.76- 0.94) |
| 30018696 | AA\_A\_62\_30018696\_R | 0.9866 | 0.998 | P | 0.12 | 0.14 | A | 1 | 1.96E-03 | 0.78 ( 0.67- 0.91) |
| 30018699 | AA\_A\_63\_30018699\_E | 0.9949 | 0.998 | P | 0.87 | 0.84 | A | 1 | 5.45E-03 | 1.23 ( 1.06- 1.43) |
| 30018699 | AA\_A\_63\_30018699\_N | 0.9866 | 0.998 | P | 0.12 | 0.14 | A | 1 | 1.96E-03 | 0.78 ( 0.67- 0.91) |
| 30018699 | AA\_A\_63\_30018699\_Q | 0.9858 | 1 | P | 0.01 | 0.01 | A | 1 | 5.95E-01 | 1.13 ( 0.73- 1.75) |
| 30018705 | AA\_A\_65\_30018705 | 1.0074 | 0.994 | G | 0.15 | 0.15 | R | 1 | 7.06E-01 | 1.03 ( 0.89- 1.19) |
| 30018708 | AA\_A\_66\_30018708 | 0.9789 | 0.999 | K | 0.49 | 0.43 | N | 1 | 3.30E-07 | 1.31 ( 1.18- 1.46) |
| 30018711 | AA\_A\_67\_30018711 | 0.9837 | 0.998 | M | 0.04 | 0.04 | V | 1 | 2.45E-01 | 0.85 ( 0.65- 1.11) |
| 30018720 | AA\_A\_70\_30018720 | 0.9866 | 0.974 | Q | 0.32 | 0.34 | H | 1 | 2.00E-01 | 0.93 ( 0.84- 1.04) |
| 30018729 | AA\_A\_73\_30018729 | 0.99 | 1 | I | 0.10 | 0.15 | T | 1 | 1.55E-07 | 0.65 ( 0.56- 0.77) |
| 30018732 | AA\_A\_74\_30018732 | 1.0013 | 0.993 | H | 0.34 | 0.28 | D | 1 | 2.86E-07 | 1.34 ( 1.20- 1.50) |
| 30018738 | AA\_A\_76\_30018738\_A | 0.9956 | 0.996 | P | 0.09 | 0.09 | A | 1 | 6.43E-01 | 1.04 ( 0.87- 1.25) |
| 30018738 | AA\_A\_76\_30018738\_E | 0.9873 | 0.992 | P | 0.16 | 0.17 | A | 1 | 6.01E-01 | 0.96 ( 0.84- 1.11) |
| 30018738 | AA\_A\_76\_30018738\_V | 1.0092 | 0.994 | P | 0.75 | 0.75 | A | 1 | 8.83E-01 | 1.01 ( 0.90- 1.13) |
| 30018741 | AA\_A\_77\_30018741\_D | 1.0092 | 0.994 | P | 0.75 | 0.75 | A | 1 | 8.83E-01 | 1.01 ( 0.90- 1.13) |
| 30018741 | AA\_A\_77\_30018741\_N | 1.0116 | 0.993 | P | 0.24 | 0.23 | A | 1 | 5.36E-01 | 1.04 ( 0.92- 1.17) |
| 30018741 | AA\_A\_77\_30018741\_S | 1.0002 | 1 | P | 0.01 | 0.02 | A | 1 | 1.47E-02 | 0.61 ( 0.41- 0.91) |
| 30018747 | AA\_A\_79\_30018747 | 0.9882 | 0.993 | R | 0.16 | 0.17 | G | 1 | 6.01E-01 | 0.96 ( 0.84- 1.11) |
| 30018750 | AA\_A\_80\_30018750 | 0.9876 | 0.992 | I | 0.16 | 0.17 | T | 1 | 6.01E-01 | 0.96 ( 0.84- 1.11) |
| 30018753 | AA\_A\_81\_30018753 | 0.9887 | 0.993 | A | 0.16 | 0.17 | L | 1 | 6.01E-01 | 0.96 ( 0.84- 1.11) |
| 30018756 | AA\_A\_82\_30018756 | 0.9881 | 0.993 | L | 0.16 | 0.17 | R | 1 | 6.01E-01 | 0.96 ( 0.84- 1.11) |
| 30018759 | AA\_A\_83\_30018759 | 0.9874 | 0.992 | R | 0.16 | 0.17 | G | 1 | 6.01E-01 | 0.96 ( 0.84- 1.11) |
| 30018780 | AA\_A\_90\_30018780 | 1.0228 | 0.998 | D | 0.26 | 0.22 | A | 1 | 1.11E-03 | 1.22 ( 1.08- 1.37) |
| 30019036 | AA\_A\_95\_30019036\_I | 0.975 | 0.997 | P | 0.51 | 0.57 | A | 1 | 4.11E-07 | 0.76 ( 0.69- 0.85) |
| 30019036 | AA\_A\_95\_30019036\_L | 1.0054 | 0.992 | P | 0.15 | 0.15 | A | 1 | 7.06E-01 | 1.03 ( 0.89- 1.19) |
| 30019036 | AA\_A\_95\_30019036\_V | 1.0011 | 0.994 | P | 0.34 | 0.28 | A | 1 | 3.76E-07 | 1.33 ( 1.19- 1.49) |
| 30019042 | AA\_A\_97\_30019042\_I | 1.0103 | 0.998 | P | 0.33 | 0.35 | A | 1 | 1.08E-01 | 0.92 ( 0.82- 1.02) |
| 30019042 | AA\_A\_97\_30019042\_M | 0.9879 | 0.993 | P | 0.29 | 0.34 | A | 1 | 2.87E-05 | 0.79 ( 0.71- 0.88) |
| 30019042 | AA\_A\_97\_30019042\_R | 0.9811 | 0.991 | P | 0.38 | 0.31 | A | 1 | 1.27E-08 | 1.37 ( 1.23- 1.53) |
| 30019048 | AA\_A\_99\_30019048\_C | 0.9169 | 0.909 | P | 0.10 | 0.05 | A | 1 | 2.07E-12 | 2.13 ( 1.72- 2.62) |
| 30019048 | AA\_A\_99\_30019048\_F | 1.001 | 0.988 | P | 0.15 | 0.15 | A | 1 | 7.36E-01 | 1.03 ( 0.89- 1.18) |
| 30019048 | AA\_A\_99\_30019048\_Y | 0.905 | 0.872 | P | 0.75 | 0.80 | A | 1 | 2.30E-06 | 0.74 ( 0.65- 0.84) |
| 30019066 | AA\_A\_105\_30019066 | 1.0202 | 0.988 | P | 0.28 | 0.25 | S | 1 | 1.46E-02 | 1.15 ( 1.03- 1.30) |
| 30019072 | AA\_A\_107\_30019072 | 0.999 | 0.992 | W | 0.34 | 0.28 | G | 1 | 3.20E-07 | 1.34 ( 1.20- 1.49) |
| 30019078 | AA\_A\_109\_30019078 | 0.9435 | 0.939 | L | 0.01 | 0.02 | F | 1 | 1.47E-02 | 0.61 ( 0.41- 0.91) |
| 30019093 | AA\_A\_114\_30019093\_E | 1.0232 | 0.991 | P | 0.07 | 0.11 | A | 1 | 6.80E-10 | 0.56 ( 0.47- 0.67) |
| 30019093 | AA\_A\_114\_30019093\_H | 0.9748 | 0.997 | P | 0.49 | 0.43 | A | 1 | 4.11E-07 | 1.31 ( 1.18- 1.46) |
| 30019093 | AA\_A\_114\_30019093\_Q | 0.9624 | 0.986 | P | 0.15 | 0.20 | A | 1 | 4.83E-06 | 0.73 ( 0.63- 0.83) |
| 30019093 | AA\_A\_114\_30019093\_R | 0.9928 | 0.983 | P | 0.29 | 0.26 | A | 1 | 1.90E-02 | 1.15 ( 1.02- 1.29) |
| 30019099 | AA\_A\_116\_30019099\_D | 0.9816 | 0.997 | P | 0.44 | 0.46 | A | 1 | 1.69E-01 | 0.93 ( 0.84- 1.03) |
| 30019099 | AA\_A\_116\_30019099\_H | 1.0242 | 0.992 | P | 0.07 | 0.11 | A | 1 | 6.80E-10 | 0.56 ( 0.47- 0.67) |
| 30019099 | AA\_A\_116\_30019099\_Y | 0.9748 | 0.997 | P | 0.49 | 0.43 | A | 1 | 4.11E-07 | 1.31 ( 1.18- 1.46) |
| 30019132 | AA\_A\_127\_30019132 | 0.9792 | 0.996 | K | 0.50 | 0.44 | N | 1 | 9.96E-07 | 1.3 ( 1.17- 1.44) |
| 30019177 | AA\_A\_142\_30019177 | 1.0031 | 0.993 | T | 0.35 | 0.29 | I | 1 | 9.56E-07 | 1.32 ( 1.18- 1.47) |
| 30019183 | AA\_A\_144\_30019183 | 0.9838 | 0.996 | Q | 0.23 | 0.33 | K | 1 | 9.70E-15 | 0.63 ( 0.56- 0.71) |
| 30019186 | AA\_A\_145\_30019186 | 1.0029 | 0.993 | H | 0.35 | 0.29 | R | 1 | 9.56E-07 | 1.32 ( 1.18- 1.47) |
| 30019201 | AA\_A\_150\_30019201 | 0.9861 | 1 | V | 0.04 | 0.04 | A | 1 | 2.45E-01 | 0.85 ( 0.65- 1.11) |
| 30019204 | AA\_A\_151\_30019204 | 0.9885 | 0.997 | R | 0.20 | 0.30 | H | 1 | 1.71E-18 | 0.57 ( 0.51- 0.65) |
| 30019207 | AA\_A\_152\_30019207\_A | 1.0272 | 0.998 | P | 0.22 | 0.19 | A | 1 | 7.59E-03 | 1.19 ( 1.05- 1.34) |
| 30019207 | AA\_A\_152\_30019207\_E | 0.838 | 0.802 | P | 0.10 | 0.09 | A | 1 | 2.67E-01 | 1.1 ( 0.93- 1.31) |
| 30019207 | AA\_A\_152\_30019207\_V | 0.9391 | 0.921 | P | 0.61 | 0.60 | A | 1 | 4.17E-01 | 1.04 ( 0.94- 1.16) |
| 30019207 | AA\_A\_152\_30019207\_W | 1.0263 | 0.994 | P | 0.07 | 0.11 | A | 1 | 6.80E-10 | 0.56 ( 0.47- 0.67) |
| 30019219 | AA\_A\_156\_30019219\_L | 0.9609 | 0.921 | P | 0.56 | 0.60 | A | 1 | 3.75E-03 | 0.86 ( 0.78- 0.95) |
| 30019219 | AA\_A\_156\_30019219\_Q | 1.0265 | 0.986 | P | 0.33 | 0.30 | A | 1 | 3.57E-03 | 1.18 ( 1.05- 1.31) |
| 30019219 | AA\_A\_156\_30019219\_R | 0.9814 | 0.995 | P | 0.04 | 0.04 | A | 1 | 2.45E-01 | 0.85 ( 0.65- 1.11) |
| 30019225 | AA\_A\_158\_30019225 | 0.9861 | 1 | V | 0.04 | 0.04 | A | 1 | 2.45E-01 | 0.85 ( 0.65- 1.11) |
| 30019234 | AA\_A\_161\_30019234 | 0.9787 | 0.995 | D | 0.04 | 0.04 | E | 1 | 8.44E-01 | 0.97 ( 0.75- 1.27) |
| 30019240 | AA\_A\_163\_30019240\_R | 1.0131 | 0.994 | P | 0.26 | 0.22 | A | 1 | 2.90E-03 | 1.2 ( 1.06- 1.35) |
| 30019240 | AA\_A\_163\_30019240\_T | 1.0124 | 0.993 | P | 0.74 | 0.78 | A | 1 | 2.90E-03 | 0.83 ( 0.74- 0.94) |
| 30019249 | AA\_A\_166\_30019249 | 0.9858 | 0.989 | D | 0.19 | 0.19 | E | 1 | 8.39E-01 | 0.99 ( 0.86- 1.13) |
| 30019252 | AA\_A\_167\_30019252 | 0.9858 | 0.989 | G | 0.19 | 0.19 | W | 1 | 8.39E-01 | 0.99 ( 0.86- 1.13) |
| 30019881 | AA\_A\_184\_30019881\_A | 1.0044 | 0.989 | P | 0.42 | 0.36 | A | 1 | 9.08E-07 | 1.3 ( 1.17- 1.45) |
| 30019881 | AA\_A\_184\_30019881\_P | 1.0039 | 0.989 | P | 0.58 | 0.64 | A | 1 | 9.08E-07 | 0.77 ( 0.69- 0.85) |
| 30019908 | AA\_A\_193\_30019908\_A | 1.0128 | 0.989 | P | 0.52 | 0.51 | A | 1 | 1.66E-01 | 1.07 ( 0.97- 1.19) |
| 30019908 | AA\_A\_193\_30019908\_P | 1.0125 | 0.99 | P | 0.48 | 0.49 | A | 1 | 1.66E-01 | 0.93 ( 0.84- 1.03) |
| 30019911 | AA\_A\_194\_30019911\_I | 1.0125 | 0.99 | P | 0.48 | 0.49 | A | 1 | 1.66E-01 | 0.93 ( 0.84- 1.03) |
| 30019911 | AA\_A\_194\_30019911\_V | 1.0122 | 0.989 | P | 0.52 | 0.51 | A | 1 | 1.66E-01 | 1.07 ( 0.97- 1.19) |
| 30019950 | AA\_A\_207\_30019950\_G | 1.0127 | 0.99 | P | 0.48 | 0.49 | A | 1 | 1.66E-01 | 0.93 ( 0.84- 1.03) |
| 30019950 | AA\_A\_207\_30019950\_S | 1.0125 | 0.989 | P | 0.52 | 0.51 | A | 1 | 1.66E-01 | 1.07 ( 0.97- 1.19) |
| 30019970 | HLA\_A\_01 | 0.9861 | 1 | P | 0.04 | 0.04 | A | 1 | 2.45E-01 | 0.85 ( 0.65- 1.11) |
| 30019970 | HLA\_A\_0101 | 0.9861 | 1 | P | 0.04 | 0.04 | A | 1 | 2.45E-01 | 0.85 ( 0.65- 1.11) |
| 30019970 | HLA\_A\_02 | 0.9978 | 0.989 | P | 0.34 | 0.28 | A | 1 | 3.74E-07 | 1.33 ( 1.19- 1.49) |
| 30019970 | HLA\_A\_0206 | 0.9885 | 0.991 | P | 0.08 | 0.07 | A | 1 | 1.71E-01 | 1.14 ( 0.94- 1.39) |
| 30019970 | HLA\_A\_0207 | 0.904 | 0.903 | P | 0.10 | 0.05 | A | 1 | 2.07E-12 | 2.13 ( 1.72- 2.62) |
| 30019970 | HLA\_A\_03 | 0.9815 | 0.997 | P | 0.04 | 0.04 | A | 1 | 8.44E-01 | 0.97 ( 0.75- 1.27) |
| 30019970 | HLA\_A\_0301 | 0.9617 | 0.977 | P | 0.04 | 0.04 | A | 1 | 8.44E-01 | 0.97 ( 0.75- 1.27) |
| 30019970 | HLA\_A\_11 | 1.0305 | 0.997 | P | 0.18 | 0.15 | A | 1 | 1.06E-03 | 1.25 ( 1.10- 1.44) |
| 30019970 | HLA\_A\_1101 | 1.0292 | 0.994 | P | 0.17 | 0.14 | A | 1 | 3.61E-03 | 1.23 ( 1.07- 1.41) |
| 30019970 | HLA\_A\_1102 | 0.9564 | 0.959 | P | 0.01 | 0.01 | A | 1 | 1.05E-01 | 1.53 ( 0.92- 2.55) |
| 30019970 | HLA\_A\_24 | 0.9998 | 0.987 | P | 0.15 | 0.15 | A | 1 | 7.37E-01 | 1.03 ( 0.89- 1.18) |
| 30019970 | HLA\_A\_2402 | 0.9611 | 0.945 | P | 0.15 | 0.14 | A | 1 | 5.24E-01 | 1.05 ( 0.91- 1.21) |
| 30019970 | HLA\_A\_26 | 0.9833 | 0.983 | P | 0.04 | 0.03 | A | 1 | 1.06E-01 | 1.26 ( 0.95- 1.68) |
| 30019970 | HLA\_A\_2601 | 0.9909 | 0.992 | P | 0.04 | 0.03 | A | 1 | 1.05E-01 | 1.27 ( 0.95- 1.69) |
| 30019970 | HLA\_A\_29 | 0.9791 | 0.992 | P | 0.01 | 0.01 | A | 1 | 5.95E-01 | 1.13 ( 0.73- 1.75) |
| 30019970 | HLA\_A\_30 | 1.0256 | 0.993 | P | 0.07 | 0.11 | A | 1 | 1.24E-09 | 0.57 ( 0.47- 0.68) |
| 30019970 | HLA\_A\_3001 | 1.0256 | 0.993 | P | 0.07 | 0.11 | A | 1 | 1.24E-09 | 0.57 ( 0.47- 0.68) |
| 30019970 | HLA\_A\_31 | 0.9888 | 0.994 | P | 0.03 | 0.05 | A | 1 | 1.90E-02 | 0.73 ( 0.56- 0.95) |
| 30019970 | HLA\_A\_3101 | 0.9915 | 0.998 | P | 0.03 | 0.05 | A | 1 | 1.90E-02 | 0.73 ( 0.56- 0.95) |
| 30019970 | HLA\_A\_32 | 1.0003 | 0.999 | P | 0.01 | 0.02 | A | 1 | 1.47E-02 | 0.61 ( 0.41- 0.91) |
| 30019970 | HLA\_A\_3201 | 1.0003 | 1 | P | 0.01 | 0.02 | A | 1 | 1.47E-02 | 0.61 ( 0.41- 0.91) |
| 30019970 | HLA\_A\_33 | 1.0135 | 0.995 | P | 0.07 | 0.10 | A | 1 | 1.58E-05 | 0.66 ( 0.55- 0.80) |
| 30019970 | HLA\_A\_3303 | 1.0191 | 1 | P | 0.07 | 0.10 | A | 1 | 7.96E-06 | 0.65 ( 0.54- 0.79) |
| 30019970 | HLA\_A\_68 | 0.9802 | 0.994 | P | 0.01 | 0.01 | A | 1 | 4.62E-01 | 0.83 ( 0.50- 1.37) |
| 30019970 | HLA\_A\_6801 | 0.9879 | 0.996 | P | 0.01 | 0.01 | A | 1 | 4.62E-01 | 0.83 ( 0.50- 1.37) |
| 30020064 | AA\_A\_245\_30020064\_A | 0.954 | 0.958 | P | 0.99 | 0.99 | A | 1 | 4.62E-01 | 1.21 ( 0.73- 2.01) |
| 30020064 | AA\_A\_245\_30020064\_V | 0.9879 | 0.996 | P | 0.01 | 0.01 | A | 1 | 4.62E-01 | 0.83 ( 0.50- 1.37) |
| 30020067 | AA\_A\_246\_30020067\_A | 0.9731 | 0.995 | P | 0.83 | 0.79 | A | 1 | 2.70E-05 | 1.33 ( 1.16- 1.52) |
| 30020067 | AA\_A\_246\_30020067\_S | 0.9739 | 0.996 | P | 0.17 | 0.21 | A | 1 | 2.70E-05 | 0.75 ( 0.66- 0.86) |
| 30020088 | AA\_A\_253\_30020088\_E | 1.0136 | 0.992 | P | 0.48 | 0.49 | A | 1 | 1.83E-01 | 0.93 ( 0.84- 1.03) |
| 30020088 | AA\_A\_253\_30020088\_Q | 1.0139 | 0.992 | P | 0.52 | 0.51 | A | 1 | 1.83E-01 | 1.07 ( 0.97- 1.19) |
| 30020259 | AA\_A\_276\_30020259\_L | 1.0057 | 0.996 | P | 0.33 | 0.35 | A | 1 | 8.54E-02 | 0.91 ( 0.82- 1.01) |
| 30020259 | AA\_A\_276\_30020259\_P | 1.0076 | 0.997 | P | 0.67 | 0.65 | A | 1 | 8.54E-02 | 1.1 ( 0.99- 1.22) |
| 30020277 | AA\_A\_282\_30020277\_I | 0.9948 | 0.982 | P | 0.85 | 0.85 | A | 1 | 6.82E-01 | 0.97 ( 0.84- 1.12) |
| 30020277 | AA\_A\_282\_30020277\_V | 1.0015 | 0.988 | P | 0.15 | 0.15 | A | 1 | 6.82E-01 | 1.03 ( 0.89- 1.19) |
| 30020313 | AA\_A\_294\_30020313\_F | 1.0135 | 0.992 | P | 0.52 | 0.51 | A | 1 | 1.83E-01 | 1.07 ( 0.97- 1.19) |
| 30020313 | AA\_A\_294\_30020313\_L | 1.0123 | 0.991 | P | 0.48 | 0.49 | A | 1 | 1.83E-01 | 0.93 ( 0.84- 1.03) |
| 30020322 | AA\_A\_297\_30020322\_M | 1.0003 | 0.999 | P | 0.01 | 0.02 | A | 1 | 1.47E-02 | 0.61 ( 0.41- 0.91) |
| 30020322 | AA\_A\_297\_30020322\_V | 0.9796 | 0.977 | P | 0.99 | 0.98 | A | 1 | 1.47E-02 | 1.64 ( 1.10- 2.43) |
| 30020325 | AA\_A\_298\_30020325\_F | 0.9744 | 0.998 | P | 0.13 | 0.18 | A | 1 | 7.17E-08 | 0.67 ( 0.58- 0.78) |
| 30020325 | AA\_A\_298\_30020325\_I | 0.9716 | 0.995 | P | 0.87 | 0.82 | A | 1 | 7.17E-08 | 1.49 ( 1.29- 1.72) |
| 30020328 | AA\_A\_299\_30020328\_A | 0.9744 | 0.996 | P | 0.17 | 0.21 | A | 1 | 2.70E-05 | 0.75 ( 0.66- 0.86) |
| 30020328 | AA\_A\_299\_30020328\_T | 0.9721 | 0.994 | P | 0.83 | 0.79 | A | 1 | 2.70E-05 | 1.33 ( 1.16- 1.52) |
| 30020352 | AA\_A\_307\_30020352\_M | 0.9715 | 0.995 | P | 0.87 | 0.82 | A | 1 | 7.17E-08 | 1.49 ( 1.29- 1.72) |
| 30020352 | AA\_A\_307\_30020352\_R | 0.9744 | 0.998 | P | 0.13 | 0.18 | A | 1 | 7.17E-08 | 0.67 ( 0.58- 0.78) |
| 30020364 | AA\_A\_311\_30020364\_K | 0.9982 | 0.985 | P | 0.85 | 0.85 | A | 1 | 6.82E-01 | 0.97 ( 0.84- 1.12) |
| 30020364 | AA\_A\_311\_30020364\_N | 1.0001 | 0.987 | P | 0.15 | 0.15 | A | 1 | 6.82E-01 | 1.03 ( 0.89- 1.19) |
| 30020836 | AA\_A\_321\_30020836\_S | 1.0073 | 0.997 | P | 0.67 | 0.65 | A | 1 | 8.54E-02 | 1.1 ( 0.99- 1.22) |
| 30020836 | AA\_A\_321\_30020836\_T | 1.0057 | 0.996 | P | 0.33 | 0.35 | A | 1 | 8.54E-02 | 0.91 ( 0.82- 1.01) |
| 30021017 | AA\_A\_334\_30021017\_M | 0.9745 | 0.996 | P | 0.17 | 0.21 | A | 1 | 2.70E-05 | 0.75 ( 0.66- 0.86) |
| 30021017 | AA\_A\_334\_30021017\_V | 0.9721 | 0.994 | P | 0.83 | 0.79 | A | 1 | 2.70E-05 | 1.33 ( 1.16- 1.52) |
| 31345102 | AA\_C\_339\_31345102\_A | 0.9639 | 0.978 | P | 0.86 | 0.83 | A | 1 | 7.64E-03 | 1.22 ( 1.05- 1.40) |
| 31345102 | AA\_C\_339\_31345102\_T | 0.9702 | 0.982 | P | 0.14 | 0.17 | A | 1 | 1.04E-02 | 0.83 ( 0.72- 0.96) |
| 31345141 | AA\_C\_326\_31345141\_C | 0.9698 | 0.982 | P | 0.14 | 0.17 | A | 1 | 9.37E-03 | 0.83 ( 0.72- 0.95) |
| 31345141 | AA\_C\_326\_31345141\_S | 0.9655 | 0.979 | P | 0.86 | 0.83 | A | 1 | 7.65E-03 | 1.22 ( 1.05- 1.40) |
| 31345745 | AA\_C\_307\_31345745\_M | 0.9692 | 0.981 | P | 0.14 | 0.17 | A | 1 | 9.37E-03 | 0.83 ( 0.72- 0.95) |
| 31345745 | AA\_C\_307\_31345745\_V | 0.9645 | 0.978 | P | 0.86 | 0.83 | A | 1 | 6.18E-03 | 1.22 ( 1.06- 1.41) |
| 31345748 | AA\_C\_306\_31345748\_A | 0.9699 | 0.982 | P | 0.14 | 0.17 | A | 1 | 9.37E-03 | 0.83 ( 0.72- 0.95) |
| 31345748 | AA\_C\_306\_31345748\_V | 0.9654 | 0.979 | P | 0.86 | 0.83 | A | 1 | 7.65E-03 | 1.22 ( 1.05- 1.40) |
| 31345751 | AA\_C\_305\_31345751\_A | 0.9655 | 0.979 | P | 0.86 | 0.83 | A | 1 | 7.65E-03 | 1.22 ( 1.05- 1.40) |
| 31345751 | AA\_C\_305\_31345751\_T | 0.9704 | 0.982 | P | 0.14 | 0.17 | A | 1 | 9.37E-03 | 0.83 ( 0.72- 0.95) |
| 31345754 | AA\_C\_304\_31345754\_M | 0.9963 | 0.987 | P | 0.32 | 0.38 | A | 1 | 5.31E-06 | 0.78 ( 0.70- 0.87) |
| 31345754 | AA\_C\_304\_31345754\_V | 0.9974 | 0.988 | P | 0.68 | 0.62 | A | 1 | 4.26E-06 | 1.29 ( 1.16- 1.43) |
| 31345757 | AA\_C\_303\_31345757\_M | 1.0031 | 0.997 | P | 0.05 | 0.06 | A | 1 | 1.41E-01 | 0.84 ( 0.67- 1.06) |
| 31345757 | AA\_C\_303\_31345757\_V | 0.9807 | 0.968 | P | 0.95 | 0.94 | A | 1 | 1.01E-01 | 1.21 ( 0.96- 1.52) |
| 31345781 | AA\_C\_295\_31345781\_A | 0.9651 | 0.979 | P | 0.86 | 0.83 | A | 1 | 7.65E-03 | 1.22 ( 1.05- 1.40) |
| 31345781 | AA\_C\_295\_31345781\_V | 0.9696 | 0.982 | P | 0.14 | 0.17 | A | 1 | 9.37E-03 | 0.83 ( 0.72- 0.95) |
| 31345811 | AA\_C\_285\_31345811\_M | 0.9703 | 0.982 | P | 0.14 | 0.17 | A | 1 | 9.37E-03 | 0.83 ( 0.72- 0.95) |
| 31345811 | AA\_C\_285\_31345811\_V | 0.9658 | 0.979 | P | 0.86 | 0.83 | A | 1 | 7.65E-03 | 1.22 ( 1.05- 1.40) |
| 31345841 | AA\_C\_275\_31345841\_E | 0.9814 | 0.984 | P | 0.85 | 0.83 | A | 1 | 1.88E-01 | 1.1 ( 0.96- 1.26) |
| 31345841 | AA\_C\_275\_31345841\_G | 0.9794 | 0.997 | P | 0.10 | 0.11 | A | 1 | 5.22E-01 | 0.95 ( 0.80- 1.12) |
| 31345841 | AA\_C\_275\_31345841\_K | 0.9962 | 0.997 | P | 0.05 | 0.06 | A | 1 | 2.52E-01 | 0.88 ( 0.70- 1.10) |
| 31345971 | AA\_C\_273\_31345971\_R | 0.9645 | 0.978 | P | 0.86 | 0.83 | A | 1 | 7.65E-03 | 1.22 ( 1.05- 1.40) |
| 31345971 | AA\_C\_273\_31345971\_S | 0.9695 | 0.982 | P | 0.14 | 0.17 | A | 1 | 9.37E-03 | 0.83 ( 0.72- 0.95) |
| 31345989 | AA\_C\_267\_31345989\_P | 0.9644 | 0.978 | P | 0.86 | 0.83 | A | 1 | 7.65E-03 | 1.22 ( 1.05- 1.40) |
| 31345989 | AA\_C\_267\_31345989\_Q | 0.9695 | 0.981 | P | 0.14 | 0.17 | A | 1 | 9.37E-03 | 0.83 ( 0.72- 0.95) |
| 31346007 | AA\_C\_261\_31346007\_M | 0.9696 | 0.982 | P | 0.14 | 0.17 | A | 1 | 9.37E-03 | 0.83 ( 0.72- 0.95) |
| 31346007 | AA\_C\_261\_31346007\_V | 0.9645 | 0.978 | P | 0.86 | 0.83 | A | 1 | 7.65E-03 | 1.22 ( 1.05- 1.40) |
| 31346031 | AA\_C\_253\_31346031\_E | 0.9639 | 0.978 | P | 0.86 | 0.83 | A | 1 | 7.65E-03 | 1.22 ( 1.05- 1.40) |
| 31346031 | AA\_C\_253\_31346031\_Q | 0.9695 | 0.982 | P | 0.14 | 0.17 | A | 1 | 9.37E-03 | 0.83 ( 0.72- 0.95) |
| 31346046 | AA\_C\_248\_31346046\_M | 1.0191 | 0.995 | P | 0.18 | 0.11 | A | 1 | 5.40E-15 | 1.82 ( 1.56- 2.11) |
| 31346046 | AA\_C\_248\_31346046\_V | 1.0113 | 0.984 | P | 0.82 | 0.89 | A | 1 | 1.08E-14 | 0.56 ( 0.48- 0.65) |
| 31346133 | AA\_C\_219\_31346133\_R | 1.0503 | 0.992 | P | 0.46 | 0.54 | A | 1 | 1.35E-09 | 0.73 ( 0.66- 0.81) |
| 31346133 | AA\_C\_219\_31346133\_W | 1.0541 | 0.998 | P | 0.54 | 0.46 | A | 1 | 1.02E-09 | 1.37 ( 1.24- 1.51) |
| 31346171 | HLA\_C\_01 | 1.0182 | 0.994 | P | 0.18 | 0.11 | A | 1 | 5.40E-15 | 1.82 ( 1.56- 2.11) |
| 31346171 | HLA\_C\_0102 | 1.0193 | 0.995 | P | 0.18 | 0.11 | A | 1 | 5.40E-15 | 1.82 ( 1.56- 2.11) |
| 31346171 | HLA\_C\_03 | 1.002 | 0.997 | P | 0.24 | 0.22 | A | 1 | 1.43E-01 | 1.1 ( 0.97- 1.24) |
| 31346171 | HLA\_C\_0302 | 0.9941 | 0.996 | P | 0.04 | 0.05 | A | 1 | 5.81E-02 | 0.79 ( 0.62- 1.01) |
| 31346171 | HLA\_C\_0303 | 0.9709 | 0.986 | P | 0.10 | 0.09 | A | 1 | 7.89E-02 | 1.17 ( 0.98- 1.40) |
| 31346171 | HLA\_C\_0304 | 0.972 | 0.979 | P | 0.09 | 0.08 | A | 1 | 7.09E-02 | 1.18 ( 0.99- 1.42) |
| 31346171 | HLA\_C\_04 | 0.9975 | 0.998 | P | 0.05 | 0.06 | A | 1 | 2.52E-01 | 0.88 ( 0.70- 1.10) |
| 31346171 | HLA\_C\_0401 | 1.0047 | 0.999 | P | 0.05 | 0.06 | A | 1 | 1.41E-01 | 0.84 ( 0.67- 1.06) |
| 31346171 | HLA\_C\_06 | 1.0311 | 0.995 | P | 0.09 | 0.15 | A | 1 | 6.02E-13 | 0.55 ( 0.47- 0.65) |
| 31346171 | HLA\_C\_0602 | 1.0311 | 0.995 | P | 0.09 | 0.15 | A | 1 | 6.02E-13 | 0.55 ( 0.47- 0.65) |
| 31346171 | HLA\_C\_07 | 0.9649 | 0.976 | P | 0.14 | 0.17 | A | 1 | 9.37E-03 | 0.83 ( 0.72- 0.95) |
| 31346171 | HLA\_C\_0701 | 0.8906 | 0.876 | P | 0.01 | 0.02 | A | 1 | 2.88E-03 | 0.54 ( 0.36- 0.81) |
| 31346171 | HLA\_C\_0702 | 0.972 | 0.976 | P | 0.12 | 0.13 | A | 1 | 1.38E-01 | 0.89 ( 0.76- 1.04) |
| 31346171 | HLA\_C\_08 | 0.9764 | 0.994 | P | 0.10 | 0.11 | A | 1 | 5.22E-01 | 0.95 ( 0.80- 1.12) |
| 31346171 | HLA\_C\_0801 | 0.9382 | 0.954 | P | 0.10 | 0.11 | A | 1 | 5.22E-01 | 0.95 ( 0.80- 1.12) |
| 31346171 | HLA\_C\_12 | 0.9436 | 0.938 | P | 0.08 | 0.07 | A | 1 | 3.15E-01 | 1.11 ( 0.91- 1.35) |
| 31346171 | HLA\_C\_1202 | 1.0295 | 0.997 | P | 0.04 | 0.03 | A | 1 | 6.97E-01 | 1.06 ( 0.80- 1.39) |
| 31346171 | HLA\_C\_1203 | 0.9545 | 0.933 | P | 0.04 | 0.04 | A | 1 | 3.27E-01 | 1.14 ( 0.88- 1.49) |
| 31346171 | HLA\_C\_14 | 1.0435 | 0.999 | P | 0.07 | 0.07 | A | 1 | 9.00E-01 | 0.99 ( 0.81- 1.21) |
| 31346171 | HLA\_C\_1402 | 1.048 | 0.999 | P | 0.06 | 0.04 | A | 1 | 8.52E-03 | 1.37 ( 1.08- 1.73) |
| 31346171 | HLA\_C\_1403 | 0.9917 | 0.99 | P | 0.01 | 0.03 | A | 1 | 1.81E-05 | 0.4 ( 0.27- 0.61) |
| 31346171 | HLA\_C\_15 | 0.8955 | 0.835 | P | 0.04 | 0.03 | A | 1 | 4.11E-01 | 1.12 ( 0.85- 1.49) |
| 31346171 | HLA\_C\_1502 | 0.983 | 0.986 | P | 0.04 | 0.03 | A | 1 | 4.11E-01 | 1.12 ( 0.85- 1.49) |
| 31346208 | AA\_C\_194\_31346208\_L | 0.9701 | 0.982 | P | 0.14 | 0.17 | A | 1 | 9.37E-03 | 0.83 ( 0.72- 0.95) |
| 31346208 | AA\_C\_194\_31346208\_V | 0.9566 | 0.963 | P | 0.86 | 0.83 | A | 1 | 9.37E-03 | 1.21 ( 1.05- 1.40) |
| 31346238 | AA\_C\_184\_31346238\_H | 0.9567 | 0.963 | P | 0.86 | 0.83 | A | 1 | 9.37E-03 | 1.21 ( 1.05- 1.40) |
| 31346238 | AA\_C\_184\_31346238\_P | 0.9705 | 0.982 | P | 0.14 | 0.17 | A | 1 | 9.37E-03 | 0.83 ( 0.72- 0.95) |
| 31346846 | AA\_C\_177\_31346846 | 0.9938 | 0.994 | K | 0.11 | 0.12 | E | 1 | 4.56E-01 | 0.94 ( 0.80- 1.11) |
| 31346858 | AA\_C\_173\_31346858 | 1.001 | 0.997 | K | 0.24 | 0.22 | E | 1 | 1.43E-01 | 1.1 ( 0.97- 1.24) |
| 31346888 | AA\_C\_163\_31346888\_L | 1.0019 | 0.997 | P | 0.24 | 0.22 | A | 1 | 1.43E-01 | 1.1 ( 0.97- 1.24) |
| 31346888 | AA\_C\_163\_31346888\_T | 0.9972 | 0.993 | P | 0.76 | 0.78 | A | 1 | 1.43E-01 | 0.91 ( 0.81- 1.03) |
| 31346909 | AA\_C\_156\_31346909\_L | 0.9774 | 0.976 | P | 0.52 | 0.53 | A | 1 | 5.02E-01 | 0.97 ( 0.87- 1.07) |
| 31346909 | AA\_C\_156\_31346909\_R | 1.0165 | 0.983 | P | 0.30 | 0.24 | A | 1 | 2.10E-08 | 1.39 ( 1.24- 1.56) |
| 31346909 | AA\_C\_156\_31346909\_W | 1.0002 | 0.983 | P | 0.17 | 0.22 | A | 1 | 7.37E-08 | 0.7 ( 0.61- 0.80) |
| 31346921 | AA\_C\_152\_31346921\_A | 0.9733 | 0.981 | P | 0.14 | 0.17 | A | 1 | 1.17E-02 | 0.83 ( 0.72- 0.96) |
| 31346921 | AA\_C\_152\_31346921\_E | 1.0239 | 0.988 | P | 0.76 | 0.73 | A | 1 | 1.35E-02 | 1.16 ( 1.03- 1.30) |
| 31346921 | AA\_C\_152\_31346921\_T | 0.981 | 0.998 | P | 0.10 | 0.11 | A | 1 | 5.22E-01 | 0.95 ( 0.80- 1.12) |
| 31346936 | AA\_C\_147\_31346936 | 0.9707 | 0.982 | L | 0.14 | 0.16 | W | 1 | 1.13E-02 | 0.83 ( 0.72- 0.96) |
| 31347029 | AA\_C\_116\_31347029\_F | 0.9942 | 0.986 | P | 0.17 | 0.19 | A | 1 | 1.73E-01 | 0.91 ( 0.80- 1.04) |
| 31347029 | AA\_C\_116\_31347029\_L | 0.9874 | 0.991 | P | 0.04 | 0.03 | A | 1 | 4.11E-01 | 1.12 ( 0.85- 1.49) |
| 31347029 | AA\_C\_116\_31347029\_S | 0.9915 | 0.992 | P | 0.41 | 0.50 | A | 1 | 4.10E-12 | 0.69 ( 0.62- 0.77) |
| 31347029 | AA\_C\_116\_31347029\_Y | 1.027 | 0.997 | P | 0.38 | 0.28 | A | 1 | 1.15E-15 | 1.57 ( 1.41- 1.75) |
| 31347035 | AA\_C\_114\_31347035 | 0.9893 | 0.994 | N | 0.16 | 0.17 | D | 1 | 2.57E-01 | 0.92 ( 0.80- 1.06) |
| 31347038 | AA\_C\_113\_31347038 | 0.9573 | 0.964 | H | 0.05 | 0.05 | Y | 1 | 6.10E-01 | 1.07 ( 0.84- 1.36) |
| 31347068 | AA\_C\_103\_31347068 | 1.0011 | 0.996 | V | 0.24 | 0.22 | L | 1 | 1.43E-01 | 1.1 ( 0.97- 1.24) |
| 31347080 | AA\_C\_99\_31347080\_C | 1.0209 | 0.998 | P | 0.19 | 0.11 | A | 1 | 4.67E-15 | 1.81 ( 1.56- 2.11) |
| 31347080 | AA\_C\_99\_31347080\_F | 1.0365 | 1 | P | 0.12 | 0.13 | A | 1 | 3.79E-01 | 0.93 ( 0.80- 1.09) |
| 31347080 | AA\_C\_99\_31347080\_S | 0.9722 | 0.976 | P | 0.12 | 0.13 | A | 1 | 1.38E-01 | 0.89 ( 0.76- 1.04) |
| 31347080 | AA\_C\_99\_31347080\_Y | 0.9575 | 0.988 | P | 0.57 | 0.63 | A | 1 | 2.02E-05 | 0.79 ( 0.71- 0.88) |
| 31347086 | AA\_C\_97\_31347086 | 0.9902 | 0.988 | W | 0.38 | 0.37 | R | 1 | 2.31E-01 | 1.07 ( 0.96- 1.19) |
| 31347092 | AA\_C\_95\_31347092\_I | 0.9719 | 0.987 | P | 0.24 | 0.21 | A | 1 | 7.64E-03 | 1.18 ( 1.05- 1.34) |
| 31347092 | AA\_C\_95\_31347092\_L | 0.9805 | 0.988 | P | 0.75 | 0.78 | A | 1 | 1.15E-02 | 0.86 ( 0.76- 0.97) |
| 31347095 | AA\_C\_94\_31347095 | 0.9817 | 0.989 | I | 0.28 | 0.27 | T | 1 | 1.10E-01 | 1.1 ( 0.98- 1.23) |
| 31347104 | AA\_C\_91\_31347104 | 0.9703 | 0.986 | R | 0.10 | 0.09 | G | 1 | 7.89E-02 | 1.17 ( 0.98- 1.40) |
| 31347357 | AA\_C\_90\_31347357 | 1.0121 | 0.991 | D | 0.28 | 0.37 | A | 1 | 7.10E-14 | 0.66 ( 0.59- 0.73) |
| 31347387 | AA\_C\_80\_31347387 | 1.0086 | 0.983 | K | 0.19 | 0.26 | N | 1 | 1.59E-09 | 0.68 ( 0.60- 0.77) |
| 31347396 | AA\_C\_77\_31347396 | 1.0086 | 0.983 | N | 0.19 | 0.26 | S | 1 | 1.59E-09 | 0.68 ( 0.60- 0.77) |
| 31347408 | AA\_C\_73\_31347408 | 0.9831 | 0.969 | T | 0.64 | 0.55 | A | 1 | 1.35E-11 | 1.44 ( 1.30- 1.60) |
| 31347429 | AA\_C\_66\_31347429 | 0.9534 | 0.954 | N | 0.06 | 0.07 | K | 1 | 2.03E-01 | 0.87 ( 0.71- 1.08) |
| 31347480 | AA\_C\_49\_31347480 | 1.0035 | 0.998 | E | 0.05 | 0.06 | A | 1 | 1.41E-01 | 0.84 ( 0.67- 1.06) |
| 31347522 | AA\_C\_35\_31347522 | 0.9772 | 0.993 | Q | 0.10 | 0.11 | R | 1 | 4.95E-01 | 0.94 ( 0.80- 1.12) |
| 31347555 | AA\_C\_24\_31347555 | 0.9774 | 0.992 | S | 0.41 | 0.43 | A | 1 | 3.14E-01 | 0.95 ( 0.85- 1.05) |
| 31347564 | AA\_C\_21\_31347564 | 0.9744 | 0.958 | H | 0.30 | 0.29 | R | 1 | 7.06E-01 | 1.02 ( 0.91- 1.14) |
| 31347585 | AA\_C\_14\_31347585 | 1.0053 | 0.999 | W | 0.05 | 0.06 | R | 1 | 1.41E-01 | 0.84 ( 0.67- 1.06) |
| 31347594 | AA\_C\_11\_31347594 | 1.0272 | 0.999 | S | 0.30 | 0.23 | A | 1 | 3.00E-08 | 1.39 ( 1.24- 1.56) |
| 31347600 | AA\_C\_9\_31347600\_D | 1.0205 | 0.994 | P | 0.23 | 0.32 | A | 1 | 1.99E-13 | 0.65 ( 0.58- 0.73) |
| 31347600 | AA\_C\_9\_31347600\_F | 1.0211 | 0.998 | P | 0.19 | 0.11 | A | 1 | 4.67E-15 | 1.81 ( 1.56- 2.11) |
| 31347600 | AA\_C\_9\_31347600\_S | 1.0436 | 0.999 | P | 0.12 | 0.12 | A | 1 | 2.96E-01 | 0.92 ( 0.79- 1.08) |
| 31347600 | AA\_C\_9\_31347600\_Y | 0.9557 | 0.994 | P | 0.47 | 0.45 | A | 1 | 8.54E-02 | 1.1 ( 0.99- 1.22) |
| 31347609 | AA\_C\_6\_31347609 | 1.021 | 0.998 | K | 0.19 | 0.11 | R | 1 | 4.67E-15 | 1.81 ( 1.56- 2.11) |
| 31347624 | AA\_C\_1\_31347624\_C | 0.9914 | 0.988 | P | 0.71 | 0.72 | A | 1 | 4.01E-01 | 0.95 ( 0.85- 1.07) |
| 31347624 | AA\_C\_1\_31347624\_G | 1.0013 | 0.999 | P | 0.29 | 0.28 | A | 1 | 3.86E-01 | 1.05 ( 0.94- 1.18) |
| 31347781 | AA\_C\_-9\_31347781\_A | 0.9711 | 0.982 | P | 0.86 | 0.84 | A | 1 | 9.10E-03 | 1.21 ( 1.05- 1.40) |
| 31347781 | AA\_C\_-9\_31347781\_G | 0.9867 | 1 | P | 0.14 | 0.16 | A | 1 | 9.10E-03 | 0.83 ( 0.71- 0.95) |
| 31347799 | AA\_C\_-15\_31347799\_I | 0.9832 | 0.982 | P | 0.81 | 0.79 | A | 1 | 4.21E-02 | 1.14 ( 1.01- 1.30) |
| 31347799 | AA\_C\_-15\_31347799\_L | 0.9859 | 0.986 | P | 0.19 | 0.21 | A | 1 | 4.21E-02 | 0.88 ( 0.77- 1.00) |
| 31347805 | AA\_C\_-17\_31347805\_A | 0.9868 | 1 | P | 0.14 | 0.16 | A | 1 | 9.10E-03 | 0.83 ( 0.71- 0.95) |
| 31347805 | AA\_C\_-17\_31347805\_T | 0.9866 | 0.999 | P | 0.86 | 0.84 | A | 1 | 9.10E-03 | 1.21 ( 1.05- 1.40) |
| 31430282 | AA\_B\_325\_31430282\_C | 1.0068 | 0.986 | P | 0.38 | 0.46 | A | 1 | 4.12E-11 | 0.7 ( 0.63- 0.78) |
| 31430282 | AA\_B\_325\_31430282\_S | 1.0066 | 0.986 | P | 0.62 | 0.54 | A | 1 | 4.85E-11 | 1.42 ( 1.28- 1.58) |
| 31430889 | AA\_B\_305\_31430889\_A | 0.9928 | 0.987 | P | 0.43 | 0.51 | A | 1 | 8.38E-11 | 0.71 ( 0.64- 0.79) |
| 31430889 | AA\_B\_305\_31430889\_T | 0.9923 | 0.987 | P | 0.57 | 0.49 | A | 1 | 9.81E-11 | 1.41 ( 1.27- 1.57) |
| 31430958 | AA\_B\_282\_31430958\_I | 0.9909 | 0.987 | P | 0.58 | 0.50 | A | 1 | 9.47E-11 | 1.41 ( 1.27- 1.57) |
| 31430958 | AA\_B\_282\_31430958\_V | 0.991 | 0.987 | P | 0.42 | 0.50 | A | 1 | 8.09E-11 | 0.71 ( 0.64- 0.79) |
| 31431162 | AA\_B\_245\_31431162\_A | 0.9765 | 0.961 | P | 0.97 | 0.96 | A | 1 | 2.34E-01 | 1.19 ( 0.89- 1.59) |
| 31431162 | AA\_B\_245\_31431162\_T | 0.9816 | 0.968 | P | 0.03 | 0.04 | A | 1 | 2.64E-01 | 0.85 ( 0.63- 1.13) |
| 31431264 | AA\_B\_211\_31431264\_A | 0.9437 | 0.94 | P | 0.98 | 0.98 | A | 1 | 1.74E-01 | 1.28 ( 0.90- 1.83) |
| 31431264 | AA\_B\_211\_31431264\_G | 0.9673 | 0.962 | P | 0.02 | 0.02 | A | 1 | 1.46E-01 | 0.77 ( 0.54- 1.10) |
| 31431272 | HLA\_B\_07 | 0.9843 | 0.995 | P | 0.03 | 0.04 | A | 1 | 1.01E-02 | 0.7 ( 0.53- 0.92) |
| 31431272 | HLA\_B\_0702 | 0.9931 | 0.993 | P | 0.02 | 0.03 | A | 1 | 2.83E-03 | 0.61 ( 0.44- 0.84) |
| 31431272 | HLA\_B\_0705 | 0.9767 | 0.986 | P | 0.01 | 0.01 | A | 1 | 8.77E-01 | 0.96 ( 0.59- 1.57) |
| 31431272 | HLA\_B\_08 | 1.0297 | 0.989 | P | 0.01 | 0.01 | A | 1 | 8.11E-01 | 0.95 ( 0.61- 1.47) |
| 31431272 | HLA\_B\_0801 | 1.0297 | 0.989 | P | 0.01 | 0.01 | A | 1 | 8.11E-01 | 0.95 ( 0.61- 1.47) |
| 31431272 | HLA\_B\_13 | 1.0271 | 0.988 | P | 0.10 | 0.15 | A | 1 | 4.68E-08 | 0.65 ( 0.56- 0.76) |
| 31431272 | HLA\_B\_1301 | 0.9638 | 0.993 | P | 0.04 | 0.03 | A | 1 | 6.98E-02 | 1.29 ( 0.98- 1.69) |
| 31431272 | HLA\_B\_1302 | 1.0387 | 0.984 | P | 0.06 | 0.12 | A | 1 | 9.96E-14 | 0.49 ( 0.41- 0.59) |
| 31431272 | HLA\_B\_15 | 0.9496 | 0.917 | P | 0.12 | 0.13 | A | 1 | 1.94E-01 | 0.9 ( 0.77- 1.05) |
| 31431272 | HLA\_B\_1501 | 0.9199 | 0.886 | P | 0.08 | 0.09 | A | 1 | 1.97E-01 | 0.88 ( 0.73- 1.07) |
| 31431272 | HLA\_B\_1502 | 0.9183 | 0.898 | P | 0.02 | 0.02 | A | 1 | 7.63E-01 | 0.94 ( 0.63- 1.40) |
| 31431272 | HLA\_B\_1518 | 0.9912 | 0.968 | P | 0.02 | 0.02 | A | 1 | 3.57E-01 | 0.84 ( 0.58- 1.22) |
| 31431272 | HLA\_B\_27 | 0.9583 | 0.954 | P | 0.02 | 0.02 | A | 1 | 1.46E-01 | 0.77 ( 0.54- 1.10) |
| 31431272 | HLA\_B\_2706 | 0.991 | 0.985 | P | 0.01 | 0.02 | A | 1 | 1.99E-01 | 0.77 ( 0.52- 1.14) |
| 31431272 | HLA\_B\_35 | 0.9727 | 0.971 | P | 0.06 | 0.04 | A | 1 | 4.52E-02 | 1.27 ( 1.01- 1.61) |
| 31431272 | HLA\_B\_3501 | 0.9526 | 0.918 | P | 0.04 | 0.03 | A | 1 | 1.50E-01 | 1.22 ( 0.93- 1.61) |
| 31431272 | HLA\_B\_3503 | 0.8532 | 0.802 | P | 0.01 | 0.01 | A | 1 | 2.38E-01 | 1.34 ( 0.83- 2.17) |
| 31431272 | HLA\_B\_37 | 0.9631 | 0.973 | P | 0.01 | 0.01 | A | 1 | 2.43E-01 | 0.74 ( 0.45- 1.23) |
| 31431272 | HLA\_B\_3701 | 0.964 | 0.974 | P | 0.01 | 0.01 | A | 1 | 2.43E-01 | 0.74 ( 0.45- 1.23) |
| 31431272 | HLA\_B\_38 | 0.9207 | 0.915 | P | 0.03 | 0.03 | A | 1 | 3.26E-01 | 1.17 ( 0.86- 1.60) |
| 31431272 | HLA\_B\_3802 | 0.924 | 0.919 | P | 0.03 | 0.03 | A | 1 | 3.65E-01 | 1.16 ( 0.85- 1.58) |
| 31431272 | HLA\_B\_39 | 0.8923 | 0.883 | P | 0.01 | 0.01 | A | 1 | 6.19E-01 | 0.89 ( 0.55- 1.43) |
| 31431272 | HLA\_B\_3901 | 0.8932 | 0.886 | P | 0.01 | 0.01 | A | 1 | 6.19E-01 | 0.89 ( 0.55- 1.43) |
| 31431272 | HLA\_B\_40 | 0.98 | 0.981 | P | 0.15 | 0.13 | A | 1 | 2.84E-02 | 1.18 ( 1.02- 1.37) |
| 31431272 | HLA\_B\_4001 | 0.9844 | 0.98 | P | 0.08 | 0.06 | A | 1 | 6.80E-02 | 1.21 ( 0.99- 1.47) |
| 31431272 | HLA\_B\_4006 | 0.8928 | 0.862 | P | 0.05 | 0.04 | A | 1 | 1.10E-01 | 1.21 ( 0.96- 1.54) |
| 31431272 | HLA\_B\_44 | 0.9948 | 0.994 | P | 0.02 | 0.05 | A | 1 | 1.76E-09 | 0.4 ( 0.30- 0.54) |
| 31431272 | HLA\_B\_4403 | 0.9929 | 0.994 | P | 0.02 | 0.05 | A | 1 | 1.76E-09 | 0.4 ( 0.30- 0.54) |
| 31431272 | HLA\_B\_46 | 0.948 | 0.923 | P | 0.14 | 0.07 | A | 1 | 8.78E-21 | 2.39 ( 1.99- 2.86) |
| 31431272 | HLA\_B\_4601 | 0.9442 | 0.92 | P | 0.14 | 0.07 | A | 1 | 8.78E-21 | 2.39 ( 1.99- 2.86) |
| 31431272 | HLA\_B\_48 | 0.9765 | 0.964 | P | 0.03 | 0.04 | A | 1 | 2.64E-01 | 0.85 ( 0.63- 1.13) |
| 31431272 | HLA\_B\_4801 | 0.9791 | 0.972 | P | 0.03 | 0.04 | A | 1 | 2.64E-01 | 0.85 ( 0.63- 1.13) |
| 31431272 | HLA\_B\_51 | 0.9913 | 0.962 | P | 0.09 | 0.08 | A | 1 | 1.92E-01 | 1.13 ( 0.94- 1.35) |
| 31431272 | HLA\_B\_5101 | 0.9631 | 0.932 | P | 0.09 | 0.08 | A | 1 | 1.75E-01 | 1.13 ( 0.95- 1.35) |
| 31431272 | HLA\_B\_52 | 0.9762 | 0.945 | P | 0.04 | 0.03 | A | 1 | 6.18E-01 | 1.07 ( 0.82- 1.41) |
| 31431272 | HLA\_B\_5201 | 0.9762 | 0.945 | P | 0.04 | 0.03 | A | 1 | 6.18E-01 | 1.07 ( 0.82- 1.41) |
| 31431272 | HLA\_B\_54 | 0.9545 | 0.921 | P | 0.05 | 0.04 | A | 1 | 1.01E-01 | 1.24 ( 0.96- 1.59) |
| 31431272 | HLA\_B\_5401 | 0.9526 | 0.919 | P | 0.05 | 0.04 | A | 1 | 1.01E-01 | 1.24 ( 0.96- 1.59) |
| 31431272 | HLA\_B\_57 | 0.9884 | 0.968 | P | 0.01 | 0.01 | A | 1 | 3.08E-02 | 0.56 ( 0.34- 0.95) |
| 31431272 | HLA\_B\_5701 | 0.9966 | 0.973 | P | 0.01 | 0.01 | A | 1 | 3.08E-02 | 0.56 ( 0.34- 0.95) |
| 31431272 | HLA\_B\_58 | 0.9967 | 0.991 | P | 0.04 | 0.05 | A | 1 | 9.23E-02 | 0.81 ( 0.64- 1.04) |
| 31431272 | HLA\_B\_5801 | 0.9963 | 0.99 | P | 0.04 | 0.05 | A | 1 | 9.23E-02 | 0.81 ( 0.64- 1.04) |
| 31431272 | HLA\_B\_67 | 0.8911 | 0.872 | P | 0.01 | 0.01 | A | 1 | 6.14E-01 | 0.88 ( 0.54- 1.44) |
| 31431272 | HLA\_B\_6701 | 0.8852 | 0.871 | P | 0.01 | 0.01 | A | 1 | 6.14E-01 | 0.88 ( 0.54- 1.44) |
| 31431300 | AA\_B\_199\_31431300\_A | 0.9886 | 0.989 | P | 0.98 | 0.95 | A | 1 | 1.76E-09 | 2.49 ( 1.85- 3.36) |
| 31431300 | AA\_B\_199\_31431300\_V | 0.9957 | 0.995 | P | 0.02 | 0.05 | A | 1 | 1.76E-09 | 0.4 ( 0.30- 0.54) |
| 31431315 | AA\_B\_194\_31431315\_I | 1.0164 | 0.988 | P | 0.77 | 0.79 | A | 1 | 2.06E-01 | 0.92 ( 0.82- 1.04) |
| 31431315 | AA\_B\_194\_31431315\_V | 1.0168 | 0.988 | P | 0.23 | 0.21 | A | 1 | 2.06E-01 | 1.08 ( 0.96- 1.22) |
| 31431931 | AA\_B\_180\_31431931 | 1.0089 | 0.987 | E | 0.15 | 0.16 | Q | 1 | 5.89E-01 | 0.96 ( 0.84- 1.11) |
| 31431937 | AA\_B\_178\_31431937 | 1.0013 | 0.985 | K | 0.14 | 0.14 | T | 1 | 6.04E-01 | 0.96 ( 0.83- 1.11) |
| 31431940 | AA\_B\_177\_31431940 | 1.0083 | 0.987 | D | 0.15 | 0.16 | E | 1 | 5.89E-01 | 0.96 ( 0.84- 1.11) |
| 31431958 | AA\_B\_171\_31431958 | 0.9941 | 0.954 | H | 0.13 | 0.12 | Y | 1 | 2.04E-01 | 1.1 ( 0.95- 1.28) |
| 31431970 | AA\_B\_167\_31431970\_S | 0.9875 | 0.988 | P | 0.02 | 0.05 | A | 1 | 2.41E-09 | 0.4 ( 0.30- 0.54) |
| 31431970 | AA\_B\_167\_31431970\_W | 0.9872 | 0.986 | P | 0.98 | 0.95 | A | 1 | 2.41E-09 | 2.48 ( 1.84- 3.33) |
| 31431982 | AA\_B\_163\_31431982\_E | 0.9949 | 0.988 | P | 0.33 | 0.39 | A | 1 | 7.21E-05 | 0.81 ( 0.72- 0.90) |
| 31431982 | AA\_B\_163\_31431982\_L | 0.9633 | 0.956 | P | 0.52 | 0.48 | A | 1 | 4.05E-04 | 1.21 ( 1.09- 1.34) |
| 31431982 | AA\_B\_163\_31431982\_T | 0.9337 | 0.915 | P | 0.14 | 0.14 | A | 1 | 6.61E-01 | 1.03 ( 0.89- 1.20) |
| 31431997 | AA\_B\_158\_31431997 | 0.9538 | 0.96 | T | 0.05 | 0.05 | A | 1 | 7.10E-01 | 1.05 ( 0.83- 1.32) |
| 31432003 | AA\_B\_156\_31432003\_D | 1.0168 | 0.983 | P | 0.02 | 0.02 | A | 1 | 4.30E-01 | 0.87 ( 0.63- 1.22) |
| 31432003 | AA\_B\_156\_31432003\_L | 0.9704 | 0.984 | P | 0.73 | 0.78 | A | 1 | 2.35E-06 | 0.75 ( 0.66- 0.84) |
| 31432003 | AA\_B\_156\_31432003\_R | 0.9814 | 0.993 | P | 0.03 | 0.04 | A | 1 | 1.48E-02 | 0.71 ( 0.54- 0.94) |
| 31432003 | AA\_B\_156\_31432003\_W | 0.9861 | 0.981 | P | 0.22 | 0.15 | A | 1 | 2.60E-11 | 1.58 ( 1.38- 1.81) |
| 31432015 | AA\_B\_152\_31432015 | 0.958 | 0.97 | E | 0.45 | 0.38 | V | 1 | 5.55E-07 | 1.31 ( 1.18- 1.46) |
| 31432030 | AA\_B\_147\_31432030 | 0.9978 | 0.992 | L | 0.11 | 0.10 | W | 1 | 3.52E-01 | 1.08 ( 0.92- 1.28) |
| 31432036 | AA\_B\_145\_31432036 | 1.023 | 0.985 | L | 0.10 | 0.15 | R | 1 | 7.36E-08 | 0.65 ( 0.56- 0.76) |
| 31432042 | AA\_B\_143\_31432042 | 0.9979 | 0.992 | S | 0.11 | 0.10 | T | 1 | 3.52E-01 | 1.08 ( 0.92- 1.28) |
| 31432078 | AA\_B\_131\_31432078 | 0.9994 | 0.988 | R | 0.23 | 0.22 | S | 1 | 8.14E-01 | 1.02 ( 0.90- 1.15) |
| 31432123 | AA\_B\_116\_31432123\_D | 1.0022 | 0.981 | P | 0.03 | 0.06 | A | 1 | 6.03E-09 | 0.44 ( 0.33- 0.58) |
| 31432123 | AA\_B\_116\_31432123\_F | 0.9442 | 0.945 | P | 0.07 | 0.07 | A | 1 | 6.58E-01 | 1.05 ( 0.86- 1.28) |
| 31432123 | AA\_B\_116\_31432123\_L | 0.9981 | 0.98 | P | 0.18 | 0.22 | A | 1 | 2.76E-04 | 0.79 ( 0.69- 0.90) |
| 31432123 | AA\_B\_116\_31432123\_S | 0.9785 | 0.976 | P | 0.35 | 0.29 | A | 1 | 5.45E-06 | 1.29 ( 1.16- 1.45) |
| 31432123 | AA\_B\_116\_31432123\_Y | 0.9945 | 0.984 | P | 0.37 | 0.36 | A | 1 | 3.81E-01 | 1.05 ( 0.94- 1.17) |
| 31432129 | AA\_B\_114\_31432129\_D | 0.9502 | 0.985 | P | 0.42 | 0.41 | A | 1 | 3.28E-01 | 1.05 ( 0.95- 1.17) |
| 31432129 | AA\_B\_114\_31432129\_N | 0.9498 | 0.983 | P | 0.58 | 0.59 | A | 1 | 3.57E-01 | 0.95 ( 0.86- 1.06) |
| 31432132 | AA\_B\_113\_31432132 | 0.9605 | 0.975 | Y | 0.08 | 0.11 | H | 1 | 4.71E-06 | 0.66 ( 0.55- 0.79) |
| 31432162 | AA\_B\_103\_31432162 | 1.0092 | 0.982 | L | 0.27 | 0.31 | V | 1 | 2.18E-03 | 0.84 ( 0.75- 0.94) |
| 31432174 | AA\_B\_99\_31432174\_S | 0.9738 | 0.98 | P | 0.01 | 0.01 | A | 1 | 2.93E-01 | 0.76 ( 0.46- 1.27) |
| 31432174 | AA\_B\_99\_31432174\_Y | 0.9728 | 0.979 | P | 0.99 | 0.99 | A | 1 | 2.93E-01 | 1.31 ( 0.79- 2.19) |
| 31432180 | AA\_B\_97\_31432180\_N | 0.9641 | 0.958 | P | 0.02 | 0.02 | A | 1 | 1.95E-01 | 0.79 ( 0.55- 1.13) |
| 31432180 | AA\_B\_97\_31432180\_R | 1.0134 | 0.984 | P | 0.57 | 0.51 | A | 1 | 1.04E-05 | 1.26 ( 1.14- 1.39) |
| 31432180 | AA\_B\_97\_31432180\_S | 0.927 | 0.923 | P | 0.10 | 0.12 | A | 1 | 1.37E-02 | 0.81 ( 0.68- 0.96) |
| 31432180 | AA\_B\_97\_31432180\_T | 0.977 | 0.956 | P | 0.31 | 0.34 | A | 1 | 2.22E-02 | 0.88 ( 0.79- 0.98) |
| 31432180 | AA\_B\_97\_31432180\_V | 1.0179 | 0.994 | P | 0.01 | 0.01 | A | 1 | 3.99E-02 | 0.58 ( 0.34- 0.98) |
| 31432186 | AA\_B\_95\_31432186\_I | 0.9894 | 0.984 | P | 0.20 | 0.22 | A | 1 | 1.09E-02 | 0.85 ( 0.75- 0.96) |
| 31432186 | AA\_B\_95\_31432186\_L | 0.9683 | 0.961 | P | 0.48 | 0.43 | A | 1 | 5.16E-05 | 1.24 ( 1.12- 1.37) |
| 31432186 | AA\_B\_95\_31432186\_W | 0.976 | 0.956 | P | 0.32 | 0.35 | A | 1 | 3.90E-02 | 0.89 ( 0.80- 0.99) |
| 31432189 | AA\_B\_94\_31432189 | 0.9882 | 0.984 | I | 0.19 | 0.21 | T | 1 | 1.98E-02 | 0.86 ( 0.76- 0.98) |
| 31432467 | AA\_B\_83\_31432467 | 1.0071 | 0.978 | R | 0.37 | 0.45 | G | 1 | 4.23E-11 | 0.7 ( 0.63- 0.78) |
| 31432470 | AA\_B\_82\_31432470 | 1.0071 | 0.978 | L | 0.37 | 0.45 | R | 1 | 4.23E-11 | 0.7 ( 0.63- 0.78) |
| 31432473 | AA\_B\_81\_31432473 | 1.0036 | 0.979 | A | 0.34 | 0.42 | L | 1 | 9.65E-10 | 0.72 ( 0.65- 0.80) |
| 31432476 | AA\_B\_80\_31432476\_I | 1.018 | 0.983 | P | 0.18 | 0.19 | A | 1 | 6.90E-01 | 0.97 ( 0.86- 1.11) |
| 31432476 | AA\_B\_80\_31432476\_N | 1.0069 | 0.978 | P | 0.63 | 0.55 | A | 1 | 4.23E-11 | 1.42 ( 1.28- 1.58) |
| 31432476 | AA\_B\_80\_31432476\_T | 0.9916 | 0.977 | P | 0.18 | 0.27 | A | 1 | 1.03E-13 | 0.62 ( 0.55- 0.70) |
| 31432485 | AA\_B\_77\_31432485\_D | 0.9565 | 0.964 | P | 0.01 | 0.01 | A | 1 | 2.93E-01 | 0.76 ( 0.46- 1.27) |
| 31432485 | AA\_B\_77\_31432485\_N | 1.0036 | 0.98 | P | 0.34 | 0.42 | A | 1 | 9.65E-10 | 0.72 ( 0.65- 0.80) |
| 31432485 | AA\_B\_77\_31432485\_S | 1.008 | 0.98 | P | 0.65 | 0.57 | A | 1 | 3.27E-10 | 1.4 ( 1.26- 1.56) |
| 31432488 | **AA\_B\_76\_31432488** | 0.9471 | 0.923 | V | 0.14 | 0.06 | E | 1 | 5.81E-21 | 2.4 ( 2.00- 2.88) |
| 31432494 | AA\_B\_74\_31432494 | 0.9579 | 0.943 | D | 0.29 | 0.22 | Y | 1 | 5.27E-09 | 1.42 ( 1.26- 1.60) |
| 31432503 | AA\_B\_71\_31432503 | 0.9681 | 0.952 | A | 0.32 | 0.27 | T | 1 | 1.37E-05 | 1.29 ( 1.15- 1.44) |
| 31432506 | AA\_B\_70\_31432506\_K | 0.9701 | 0.97 | P | 0.02 | 0.03 | A | 1 | 7.47E-02 | 0.73 ( 0.51- 1.03) |
| 31432506 | AA\_B\_70\_31432506\_N | 0.9672 | 0.951 | P | 0.68 | 0.73 | A | 1 | 1.37E-05 | 0.78 ( 0.69- 0.87) |
| 31432506 | AA\_B\_70\_31432506\_Q | 0.9657 | 0.946 | P | 0.25 | 0.18 | A | 1 | 1.11E-11 | 1.56 ( 1.37- 1.77) |
| 31432506 | AA\_B\_70\_31432506\_S | 1.0043 | 0.995 | P | 0.05 | 0.07 | A | 1 | 1.72E-02 | 0.76 ( 0.61- 0.95) |
| 31432509 | AA\_B\_69\_31432509\_A | 0.9841 | 0.981 | P | 0.18 | 0.20 | A | 1 | 1.47E-02 | 0.85 ( 0.74- 0.97) |
| 31432509 | AA\_B\_69\_31432509\_R | 0.9478 | 0.923 | P | 0.14 | 0.06 | A | 1 | 5.81E-21 | 2.4 ( 2.00- 2.88) |
| 31432509 | AA\_B\_69\_31432509\_T | 0.9685 | 0.953 | P | 0.68 | 0.73 | A | 1 | 1.37E-05 | 0.78 ( 0.69- 0.87) |
| 31432515 | AA\_B\_67\_31432515\_C | 0.9639 | 0.96 | P | 0.08 | 0.08 | A | 1 | 5.37E-01 | 0.94 ( 0.78- 1.14) |
| 31432515 | AA\_B\_67\_31432515\_F | 1.0185 | 0.977 | P | 0.16 | 0.14 | A | 1 | 4.09E-02 | 1.16 ( 1.01- 1.33) |
| 31432515 | AA\_B\_67\_31432515\_M | 1.0041 | 0.994 | P | 0.05 | 0.07 | A | 1 | 1.72E-02 | 0.76 ( 0.61- 0.95) |
| 31432515 | AA\_B\_67\_31432515\_S | 0.9636 | 0.955 | P | 0.46 | 0.54 | A | 1 | 1.66E-08 | 0.74 ( 0.67- 0.82) |
| 31432515 | AA\_B\_67\_31432515\_Y | 0.9648 | 0.946 | P | 0.25 | 0.18 | A | 1 | 1.11E-11 | 1.56 ( 1.37- 1.77) |
| 31432518 | AA\_B\_66\_31432518\_I | 0.9767 | 0.947 | P | 0.81 | 0.87 | A | 1 | 1.79E-10 | 0.63 ( 0.55- 0.73) |
| 31432518 | AA\_B\_66\_31432518\_K | 0.9482 | 0.924 | P | 0.14 | 0.06 | A | 1 | 5.81E-21 | 2.4 ( 2.00- 2.88) |
| 31432518 | AA\_B\_66\_31432518\_N | 1.0042 | 0.994 | P | 0.05 | 0.07 | A | 1 | 1.72E-02 | 0.76 ( 0.61- 0.95) |
| 31432521 | AA\_B\_65\_31432521 | 1.0031 | 0.994 | R | 0.05 | 0.07 | Q | 1 | 1.72E-02 | 0.76 ( 0.61- 0.95) |
| 31432527 | AA\_B\_63\_31432527 | 0.9978 | 0.968 | N | 0.35 | 0.33 | E | 1 | 2.12E-01 | 1.07 ( 0.96- 1.19) |
| 31432530 | AA\_B\_62\_31432530 | 1.0032 | 0.994 | G | 0.05 | 0.07 | R | 1 | 1.72E-02 | 0.76 ( 0.61- 0.95) |
| 31432560 | AA\_B\_52\_31432560 | 0.9566 | 0.923 | V | 0.05 | 0.04 | I | 1 | 8.76E-02 | 1.25 ( 0.97- 1.61) |
| 31432578 | AA\_B\_46\_31432578 | 1.0232 | 0.989 | A | 0.35 | 0.34 | E | 1 | 2.80E-01 | 1.06 ( 0.95- 1.18) |
| 31432581 | AA\_B\_45\_31432581\_E | 1.0058 | 0.971 | P | 0.18 | 0.20 | A | 1 | 3.08E-02 | 0.87 ( 0.76- 0.99) |
| 31432581 | AA\_B\_45\_31432581\_G | 0.9569 | 0.923 | P | 0.05 | 0.04 | A | 1 | 8.76E-02 | 1.25 ( 0.97- 1.61) |
| 31432581 | AA\_B\_45\_31432581\_K | 0.9867 | 0.989 | P | 0.18 | 0.19 | A | 1 | 4.23E-01 | 0.95 ( 0.83- 1.08) |
| 31432581 | AA\_B\_45\_31432581\_M | 1.0232 | 0.989 | P | 0.35 | 0.34 | A | 1 | 2.80E-01 | 1.06 ( 0.95- 1.18) |
| 31432581 | AA\_B\_45\_31432581\_T | 1.0345 | 0.991 | P | 0.24 | 0.23 | A | 1 | 4.86E-01 | 1.04 ( 0.93- 1.17) |
| 31432593 | AA\_B\_41\_31432593 | 1.0015 | 0.991 | T | 0.28 | 0.34 | A | 1 | 3.23E-06 | 0.77 ( 0.69- 0.86) |
| 31432620 | AA\_B\_32\_31432620 | 0.9895 | 0.992 | L | 0.20 | 0.21 | Q | 1 | 1.56E-01 | 0.91 ( 0.80- 1.04) |
| 31432644 | AA\_B\_24\_31432644\_A | 1.0018 | 0.993 | P | 0.54 | 0.46 | A | 1 | 9.48E-11 | 1.41 ( 1.27- 1.56) |
| 31432644 | AA\_B\_24\_31432644\_S | 1.0158 | 0.994 | P | 0.15 | 0.18 | A | 1 | 2.90E-02 | 0.86 ( 0.75- 0.98) |
| 31432644 | AA\_B\_24\_31432644\_T | 1.0008 | 0.993 | P | 0.30 | 0.37 | A | 1 | 2.85E-07 | 0.75 ( 0.67- 0.84) |
| 31432680 | AA\_B\_12\_31432680 | 1.0006 | 0.995 | V | 0.22 | 0.23 | M | 1 | 1.19E-01 | 0.91 ( 0.80- 1.03) |
| 31432683 | AA\_B\_11\_31432683 | 1.0005 | 0.995 | S | 0.22 | 0.23 | A | 1 | 1.19E-01 | 0.91 ( 0.80- 1.03) |
| 31432689 | AA\_B\_9\_31432689\_D | 1.0403 | 1 | P | 0.01 | 0.01 | A | 1 | 8.99E-01 | 0.97 ( 0.62- 1.52) |
| 31432689 | AA\_B\_9\_31432689\_H | 0.9881 | 0.991 | P | 0.19 | 0.18 | A | 1 | 3.40E-01 | 1.07 ( 0.93- 1.22) |
| 31432689 | AA\_B\_9\_31432689\_Y | 0.9935 | 0.991 | P | 0.80 | 0.81 | A | 1 | 3.72E-01 | 0.94 ( 0.83- 1.07) |
| 31432865 | AA\_B\_-8\_31432865\_L | 1.0136 | 0.992 | P | 0.53 | 0.46 | A | 1 | 6.11E-09 | 1.36 ( 1.22- 1.50) |
| 31432865 | AA\_B\_-8\_31432865\_V | 1.0121 | 0.99 | P | 0.47 | 0.54 | A | 1 | 7.01E-09 | 0.74 ( 0.67- 0.82) |
| 31432871 | AA\_B\_-10\_31432871\_A | 1.0011 | 0.993 | P | 0.21 | 0.21 | A | 1 | 8.62E-01 | 1.01 ( 0.89- 1.15) |
| 31432871 | AA\_B\_-10\_31432871\_G | 0.9989 | 0.991 | P | 0.79 | 0.79 | A | 1 | 8.87E-01 | 0.99 ( 0.87- 1.12) |
| 31432874 | AA\_B\_-11\_31432874\_S | 1.0038 | 0.992 | P | 0.47 | 0.40 | A | 1 | 2.65E-07 | 1.31 ( 1.18- 1.46) |
| 31432874 | AA\_B\_-11\_31432874\_W | 1.0022 | 0.991 | P | 0.53 | 0.60 | A | 1 | 3.00E-07 | 0.76 ( 0.69- 0.85) |
| 31432889 | AA\_B\_-16\_31432889\_L | 1.0108 | 0.995 | P | 0.30 | 0.37 | A | 1 | 3.28E-09 | 0.72 ( 0.64- 0.80) |
| 31432889 | AA\_B\_-16\_31432889\_V | 1.0105 | 0.994 | P | 0.71 | 0.63 | A | 1 | 2.86E-09 | 1.39 ( 1.25- 1.55) |
| 31432904 | AA\_B\_-21\_31432904\_M | 0.987 | 0.994 | P | 0.13 | 0.14 | A | 1 | 1.41E-01 | 0.89 ( 0.77- 1.04) |
| 31432904 | AA\_B\_-21\_31432904\_T | 0.9848 | 0.992 | P | 0.87 | 0.86 | A | 1 | 1.31E-01 | 1.12 ( 0.97- 1.31) |
| 31432910 | AA\_B\_-23\_31432910\_L | 0.9855 | 0.992 | P | 0.13 | 0.14 | A | 1 | 1.41E-01 | 0.89 ( 0.77- 1.04) |
| 31432910 | AA\_B\_-23\_31432910\_R | 0.9841 | 0.991 | P | 0.87 | 0.86 | A | 1 | 1.31E-01 | 1.12 ( 0.97- 1.31) |
| 32656004 | AA\_DRB1\_233\_32656004\_R | 0.9993 | 0.986 | P | 0.28 | 0.32 | A | 1 | 3.43E-03 | 0.85 ( 0.76- 0.95) |
| 32656004 | AA\_DRB1\_233\_32656004\_T | 1.0087 | 0.995 | P | 0.72 | 0.68 | A | 1 | 3.15E-03 | 1.18 ( 1.06- 1.32) |
| 32656611 | AA\_DRB1\_189\_32656611\_R | 0.9696 | 0.96 | P | 0.92 | 0.95 | A | 1 | 1.51E-05 | 0.63 ( 0.51- 0.78) |
| 32656611 | AA\_DRB1\_189\_32656611\_S | 1.0012 | 0.992 | P | 0.08 | 0.05 | A | 1 | 1.20E-05 | 1.59 ( 1.29- 1.96) |
| 32657335 | AA\_DRB1\_181\_32657335\_M | 1.0279 | 0.994 | P | 0.23 | 0.28 | A | 1 | 2.85E-05 | 0.78 ( 0.69- 0.88) |
| 32657335 | AA\_DRB1\_181\_32657335\_T | 1.0224 | 0.989 | P | 0.77 | 0.72 | A | 1 | 2.57E-05 | 1.29 ( 1.14- 1.44) |
| 32657338 | AA\_DRB1\_180\_32657338\_L | 0.9806 | 0.989 | P | 0.12 | 0.11 | A | 1 | 2.61E-01 | 1.1 ( 0.93- 1.29) |
| 32657338 | AA\_DRB1\_180\_32657338\_V | 0.9689 | 0.978 | P | 0.88 | 0.89 | A | 1 | 2.78E-01 | 0.92 ( 0.78- 1.07) |
| 32657380 | AA\_DRB1\_166\_32657380\_R | 0.8804 | 0.877 | P | 0.99 | 0.99 | A | 1 | 7.82E-03 | 2.2 ( 1.23- 3.92) |
| 32657431 | AA\_DRB1\_149\_32657431\_H | 0.9958 | 0.993 | P | 0.37 | 0.37 | A | 1 | 6.28E-01 | 0.97 ( 0.88- 1.08) |
| 32657431 | AA\_DRB1\_149\_32657431\_Q | 1.0004 | 0.997 | P | 0.63 | 0.63 | A | 1 | 6.28E-01 | 1.03 ( 0.92- 1.14) |
| 32657452 | AA\_DRB1\_142\_32657452\_M | 0.969 | 0.995 | P | 0.26 | 0.21 | A | 1 | 1.87E-06 | 1.35 ( 1.19- 1.53) |
| 32657452 | AA\_DRB1\_142\_32657452\_V | 0.9642 | 0.989 | P | 0.74 | 0.79 | A | 1 | 1.87E-06 | 0.74 ( 0.65- 0.84) |
| 32657458 | AA\_DRB1\_140\_32657458\_A | 0.9755 | 0.993 | P | 0.51 | 0.50 | A | 1 | 8.45E-01 | 1.01 ( 0.91- 1.12) |
| 32657458 | AA\_DRB1\_140\_32657458\_T | 0.9724 | 0.99 | P | 0.49 | 0.50 | A | 1 | 8.45E-01 | 0.99 ( 0.89- 1.10) |
| 32657479 | AA\_DRB1\_133\_32657479\_L | 0.9683 | 0.994 | P | 0.26 | 0.21 | A | 1 | 1.87E-06 | 1.35 ( 1.19- 1.53) |
| 32657479 | AA\_DRB1\_133\_32657479\_R | 0.9645 | 0.99 | P | 0.74 | 0.79 | A | 1 | 1.87E-06 | 0.74 ( 0.65- 0.84) |
| 32657518 | AA\_DRB1\_120\_32657518\_N | 0.9765 | 0.989 | P | 0.13 | 0.12 | A | 1 | 7.32E-01 | 1.03 ( 0.88- 1.20) |
| 32657518 | AA\_DRB1\_120\_32657518\_S | 0.9698 | 0.982 | P | 0.87 | 0.88 | A | 1 | 7.32E-01 | 0.97 ( 0.83- 1.14) |
| 32657566 | AA\_DRB1\_104\_32657566\_A | 0.9983 | 0.998 | P | 0.34 | 0.38 | A | 1 | 9.85E-03 | 0.87 ( 0.78- 0.97) |
| 32657566 | AA\_DRB1\_104\_32657566\_S | 0.9942 | 0.995 | P | 0.66 | 0.62 | A | 1 | 9.85E-03 | 1.15 ( 1.04- 1.28) |
| 32657584 | AA\_DRB1\_98\_32657584\_E | 0.9979 | 0.998 | P | 0.34 | 0.38 | A | 1 | 9.85E-03 | 0.87 ( 0.78- 0.97) |
| 32657584 | AA\_DRB1\_98\_32657584\_K | 0.9942 | 0.995 | P | 0.66 | 0.62 | A | 1 | 9.85E-03 | 1.15 ( 1.04- 1.28) |
| 32657590 | AA\_DRB1\_96\_32657590\_E | 0.9948 | 0.991 | P | 0.02 | 0.03 | A | 1 | 5.38E-02 | 0.73 ( 0.53- 1.01) |
| 32657590 | AA\_DRB1\_96\_32657590\_H | 1.0103 | 0.989 | P | 0.59 | 0.64 | A | 1 | 2.23E-04 | 0.82 ( 0.74- 0.91) |
| 32657590 | AA\_DRB1\_96\_32657590\_Q | 0.9653 | 0.994 | P | 0.27 | 0.22 | A | 1 | 3.07E-05 | 1.3 ( 1.15- 1.47) |
| 32657590 | AA\_DRB1\_96\_32657590\_Y | 0.9804 | 0.989 | P | 0.12 | 0.11 | A | 1 | 2.61E-01 | 1.1 ( 0.93- 1.29) |
| 32659890 | AA\_DRB1\_86\_32659890 | 0.8732 | 0.903 | V | 0.40 | 0.39 | G | 1 | 6.92E-01 | 1.02 ( 0.92- 1.14) |
| 32659893 | AA\_DRB1\_85\_32659893 | 0.8986 | 0.885 | A | 0.09 | 0.10 | V | 1 | 2.61E-01 | 0.9 ( 0.76- 1.08) |
| 32659914 | AA\_DRB1\_78\_32659914 | 1.0267 | 0.993 | V | 0.22 | 0.27 | Y | 1 | 2.63E-04 | 0.8 ( 0.71- 0.90) |
| 32659917 | AA\_DRB1\_77\_32659917 | 0.9739 | 0.993 | N | 0.05 | 0.04 | T | 1 | 1.47E-01 | 1.21 ( 0.94- 1.56) |
| 32659926 | AA\_DRB1\_74\_32659926\_A | 0.9714 | 0.968 | P | 0.57 | 0.56 | A | 1 | 2.00E-01 | 1.07 ( 0.96- 1.19) |
| 32659926 | AA\_DRB1\_74\_32659926\_E | 0.9879 | 0.955 | P | 0.23 | 0.20 | A | 1 | 1.16E-02 | 1.17 ( 1.04- 1.33) |
| 32659926 | AA\_DRB1\_74\_32659926\_L | 0.9945 | 0.984 | P | 0.08 | 0.05 | A | 1 | 7.66E-06 | 1.61 ( 1.31- 1.98) |
| 32659926 | AA\_DRB1\_74\_32659926\_Q | 1.0366 | 0.992 | P | 0.07 | 0.15 | A | 1 | 3.14E-21 | 0.43 ( 0.36- 0.51) |
| 32659926 | AA\_DRB1\_74\_32659926\_R | 0.9726 | 0.992 | P | 0.05 | 0.04 | A | 1 | 1.47E-01 | 1.21 ( 0.94- 1.56) |
| 32659929 | AA\_DRB1\_73\_32659929 | 1.0248 | 0.994 | G | 0.12 | 0.19 | A | 1 | 2.78E-14 | 0.57 ( 0.49- 0.66) |
| 32659935 | AA\_DRB1\_71\_32659935\_A | 0.9346 | 0.986 | P | 0.22 | 0.19 | A | 1 | 2.64E-03 | 1.22 ( 1.07- 1.39) |
| 32659935 | AA\_DRB1\_71\_32659935\_E | 1.0229 | 0.996 | P | 0.05 | 0.07 | A | 1 | 9.92E-05 | 0.65 ( 0.52- 0.81) |
| 32659935 | AA\_DRB1\_71\_32659935\_K | 0.9936 | 0.98 | P | 0.06 | 0.06 | A | 1 | 2.80E-01 | 1.13 ( 0.91- 1.40) |
| 32659935 | AA\_DRB1\_71\_32659935\_R | 0.9819 | 0.985 | P | 0.67 | 0.68 | A | 1 | 2.84E-01 | 0.94 ( 0.84- 1.05) |
| 32659938 | AA\_DRB1\_70\_32659938\_D | 0.9604 | 0.958 | P | 0.39 | 0.46 | A | 1 | 1.62E-07 | 0.76 ( 0.68- 0.84) |
| 32659938 | AA\_DRB1\_70\_32659938\_Q | 1.0069 | 0.983 | P | 0.41 | 0.37 | A | 1 | 1.49E-03 | 1.18 ( 1.07- 1.31) |
| 32659938 | AA\_DRB1\_70\_32659938\_R | 1.0315 | 0.981 | P | 0.20 | 0.17 | A | 1 | 1.00E-02 | 1.19 ( 1.04- 1.35) |
| 32659947 | AA\_DRB1\_67\_32659947\_F | 0.9772 | 0.929 | P | 0.26 | 0.25 | A | 1 | 4.91E-01 | 1.04 ( 0.93- 1.17) |
| 32659947 | AA\_DRB1\_67\_32659947\_I | 0.956 | 0.944 | P | 0.47 | 0.50 | A | 1 | 3.68E-02 | 0.9 ( 0.81- 0.99) |
| 32659947 | AA\_DRB1\_67\_32659947\_L | 0.9822 | 0.97 | P | 0.27 | 0.25 | A | 1 | 1.07E-01 | 1.1 ( 0.98- 1.24) |
| 32659968 | AA\_DRB1\_60\_32659968\_H | 0.8909 | 0.867 | P | 0.03 | 0.03 | A | 1 | 3.38E-01 | 0.87 ( 0.65- 1.16) |
| 32659968 | AA\_DRB1\_60\_32659968\_S | 1.0014 | 0.952 | P | 0.31 | 0.36 | A | 1 | 4.86E-05 | 0.8 ( 0.72- 0.89) |
| 32659968 | AA\_DRB1\_60\_32659968\_Y | 0.9962 | 0.941 | P | 0.66 | 0.60 | A | 1 | 1.79E-05 | 1.26 ( 1.13- 1.40) |
| 32659974 | AA\_DRB1\_58\_32659974 | 0.8795 | 0.807 | E | 0.06 | 0.06 | A | 1 | 3.36E-01 | 0.9 ( 0.73- 1.12) |
| 32659977 | AA\_DRB1\_57\_32659977\_A | 0.8898 | 0.865 | P | 0.03 | 0.03 | A | 1 | 3.38E-01 | 0.87 ( 0.65- 1.16) |
| 32659977 | AA\_DRB1\_57\_32659977\_D | 0.9544 | 0.942 | P | 0.51 | 0.51 | A | 1 | 5.79E-01 | 1.03 ( 0.93- 1.14) |
| 32659977 | AA\_DRB1\_57\_32659977\_S | 0.9901 | 0.978 | P | 0.14 | 0.10 | A | 1 | 2.64E-08 | 1.58 ( 1.34- 1.85) |
| 32659977 | AA\_DRB1\_57\_32659977\_V | 1.0014 | 0.952 | P | 0.31 | 0.36 | A | 1 | 4.86E-05 | 0.8 ( 0.72- 0.89) |
| 32660007 | AA\_DRB1\_47\_32660007 | 0.9777 | 0.976 | F | 0.46 | 0.46 | Y | 1 | 8.99E-01 | 0.99 ( 0.90- 1.10) |
| 32660034 | AA\_DRB1\_38\_32660034\_L | 0.8946 | 0.881 | P | 0.09 | 0.10 | A | 1 | 1.93E-01 | 0.89 ( 0.75- 1.06) |
| 32660034 | AA\_DRB1\_38\_32660034\_V | 0.9057 | 0.89 | P | 0.90 | 0.89 | A | 1 | 3.98E-02 | 1.19 ( 1.01- 1.41) |
| 32660037 | AA\_DRB1\_37\_32660037\_F | 1.0193 | 0.982 | P | 0.11 | 0.20 | A | 1 | 1.43E-19 | 0.5 ( 0.43- 0.58) |
| 32660037 | AA\_DRB1\_37\_32660037\_L | 0.8946 | 0.881 | P | 0.09 | 0.10 | A | 1 | 1.93E-01 | 0.89 ( 0.75- 1.06) |
| 32660037 | AA\_DRB1\_37\_32660037\_N | 0.9867 | 0.992 | P | 0.25 | 0.23 | A | 1 | 4.25E-02 | 1.13 ( 1.00- 1.28) |
| 32660037 | AA\_DRB1\_37\_32660037\_S | 0.9675 | 0.985 | P | 0.30 | 0.26 | A | 1 | 2.77E-04 | 1.24 ( 1.10- 1.39) |
| 32660037 | AA\_DRB1\_37\_32660037\_Y | 0.9402 | 0.924 | P | 0.25 | 0.22 | A | 1 | 4.11E-03 | 1.19 ( 1.06- 1.35) |
| 32660042 | HLA\_DRB1\_01 | 0.9939 | 0.991 | P | 0.02 | 0.03 | A | 1 | 5.25E-02 | 0.73 ( 0.53- 1.00) |
| 32660042 | HLA\_DRB1\_0101 | 0.9936 | 0.991 | P | 0.02 | 0.03 | A | 1 | 5.25E-02 | 0.73 ( 0.53- 1.00) |
| 32660042 | HLA\_DRB1\_03 | 0.9713 | 0.991 | P | 0.05 | 0.04 | A | 1 | 1.64E-01 | 1.2 ( 0.93- 1.54) |
| 32660042 | HLA\_DRB1\_0301 | 0.9732 | 0.993 | P | 0.05 | 0.04 | A | 1 | 1.64E-01 | 1.2 ( 0.93- 1.54) |
| 32660042 | HLA\_DRB1\_04 | 0.9783 | 0.984 | P | 0.12 | 0.11 | A | 1 | 2.26E-01 | 1.11 ( 0.94- 1.30) |
| 32660042 | HLA\_DRB1\_0401 | 0.9731 | 0.942 | P | 0.02 | 0.02 | A | 1 | 7.16E-01 | 0.93 ( 0.63- 1.38) |
| 32660042 | HLA\_DRB1\_0405 | 0.9633 | 0.98 | P | 0.06 | 0.05 | A | 1 | 7.99E-03 | 1.36 ( 1.08- 1.70) |
| 32660042 | HLA\_DRB1\_0406 | 0.8918 | 0.876 | P | 0.02 | 0.02 | A | 1 | 4.71E-01 | 0.87 ( 0.60- 1.26) |
| 32660042 | HLA\_DRB1\_07 | 1.038 | 0.996 | P | 0.07 | 0.15 | A | 1 | 2.49E-21 | 0.43 ( 0.36- 0.51) |
| 32660042 | HLA\_DRB1\_0701 | 1.038 | 0.996 | P | 0.07 | 0.15 | A | 1 | 2.49E-21 | 0.43 ( 0.36- 0.51) |
| 32660042 | HLA\_DRB1\_08 | 0.9865 | 0.975 | P | 0.08 | 0.05 | A | 1 | 7.87E-06 | 1.6 ( 1.30- 1.97) |
| 32660042 | HLA\_DRB1\_0803 | 0.9979 | 0.987 | P | 0.08 | 0.05 | A | 1 | 1.81E-06 | 1.72 ( 1.38- 2.14) |
| 32660042 | HLA\_DRB1\_09 | 1.0237 | 0.99 | P | 0.15 | 0.11 | A | 1 | 1.44E-05 | 1.39 ( 1.20- 1.62) |
| 32660042 | HLA\_DRB1\_0901 | 1.0251 | 0.992 | P | 0.15 | 0.11 | A | 1 | 1.44E-05 | 1.39 ( 1.20- 1.62) |
| 32660042 | HLA\_DRB1\_11 | 0.8802 | 0.808 | P | 0.06 | 0.06 | A | 1 | 3.36E-01 | 0.9 ( 0.73- 1.12) |
| 32660042 | HLA\_DRB1\_1101 | 0.8793 | 0.807 | P | 0.06 | 0.06 | A | 1 | 3.36E-01 | 0.9 ( 0.73- 1.12) |
| 32660042 | HLA\_DRB1\_12 | 0.8969 | 0.881 | P | 0.09 | 0.10 | A | 1 | 1.93E-01 | 0.89 ( 0.75- 1.06) |
| 32660042 | HLA\_DRB1\_1202 | 0.9838 | 0.965 | P | 0.04 | 0.07 | A | 1 | 2.76E-05 | 0.61 ( 0.48- 0.77) |
| 32660042 | HLA\_DRB1\_13 | 0.997 | 0.964 | P | 0.05 | 0.08 | A | 1 | 7.59E-04 | 0.7 ( 0.57- 0.86) |
| 32660042 | HLA\_DRB1\_1301 | 1.0088 | 0.988 | P | 0.02 | 0.02 | A | 1 | 3.02E-01 | 0.82 ( 0.56- 1.20) |
| 32660042 | HLA\_DRB1\_1302 | 1.0037 | 0.994 | P | 0.03 | 0.05 | A | 1 | 7.68E-05 | 0.59 ( 0.45- 0.76) |
| 32660042 | HLA\_DRB1\_14 | 0.9608 | 0.95 | P | 0.04 | 0.04 | A | 1 | 2.30E-01 | 0.85 ( 0.66- 1.11) |
| 32660042 | HLA\_DRB1\_15 | 0.9348 | 0.986 | P | 0.22 | 0.19 | A | 1 | 2.36E-03 | 1.23 ( 1.08- 1.40) |
| 32660042 | HLA\_DRB1\_1501 | 0.8905 | 0.929 | P | 0.16 | 0.14 | A | 1 | 2.61E-02 | 1.18 ( 1.02- 1.37) |
| 32660042 | HLA\_DRB1\_1502 | 0.9035 | 0.854 | P | 0.06 | 0.05 | A | 1 | 6.71E-02 | 1.23 ( 0.99- 1.54) |
| 32660042 | HLA\_DRB1\_16 | 0.9384 | 0.922 | P | 0.04 | 0.02 | A | 1 | 1.09E-06 | 2.32 ( 1.65- 3.25) |
| 32660042 | HLA\_DRB1\_1602 | 0.9384 | 0.922 | P | 0.04 | 0.02 | A | 1 | 1.09E-06 | 2.32 ( 1.65- 3.25) |
| 32660049 | AA\_DRB1\_33\_32660049 | 0.9871 | 0.998 | H | 0.12 | 0.11 | N | 1 | 2.41E-01 | 1.1 ( 0.94- 1.30) |
| 32660052 | AA\_DRB1\_32\_32660052 | 0.952 | 0.935 | H | 0.23 | 0.27 | Y | 1 | 4.87E-04 | 0.81 ( 0.72- 0.91) |
| 32660055 | AA\_DRB1\_31\_32660055\_F | 1.0188 | 0.993 | P | 0.82 | 0.84 | A | 1 | 1.07E-02 | 0.84 ( 0.73- 0.96) |
| 32660055 | AA\_DRB1\_31\_32660055\_I | 1.0237 | 0.992 | P | 0.18 | 0.14 | A | 1 | 1.13E-03 | 1.26 ( 1.10- 1.45) |
| 32660058 | AA\_DRB1\_30\_32660058\_C | 0.9945 | 0.992 | P | 0.02 | 0.03 | A | 1 | 6.13E-02 | 0.74 ( 0.53- 1.02) |
| 32660058 | AA\_DRB1\_30\_32660058\_G | 1.0252 | 0.991 | P | 0.15 | 0.11 | A | 1 | 1.23E-05 | 1.4 ( 1.20- 1.62) |
| 32660058 | AA\_DRB1\_30\_32660058\_H | 0.8919 | 0.877 | P | 0.09 | 0.10 | A | 1 | 1.62E-01 | 0.88 ( 0.74- 1.05) |
| 32660058 | AA\_DRB1\_30\_32660058\_L | 1.0385 | 0.997 | P | 0.07 | 0.15 | A | 1 | 1.93E-21 | 0.43 ( 0.36- 0.51) |
| 32660058 | AA\_DRB1\_30\_32660058\_Y | 1.0059 | 0.954 | P | 0.66 | 0.59 | A | 1 | 2.23E-07 | 1.32 ( 1.19- 1.46) |
| 32660064 | AA\_DRB1\_28\_32660064\_D | 0.9997 | 0.954 | P | 0.64 | 0.59 | A | 1 | 8.39E-06 | 1.27 ( 1.14- 1.41) |
| 32660064 | AA\_DRB1\_28\_32660064\_E | 1.0017 | 0.944 | P | 0.19 | 0.29 | A | 1 | 4.26E-20 | 0.56 ( 0.50- 0.64) |
| 32660064 | AA\_DRB1\_28\_32660064\_H | 1.0238 | 0.99 | P | 0.15 | 0.11 | A | 1 | 1.23E-05 | 1.4 ( 1.20- 1.62) |
| 32660070 | AA\_DRB1\_26\_32660070\_F | 0.9504 | 0.947 | P | 0.68 | 0.70 | A | 1 | 6.24E-02 | 0.9 ( 0.80- 1.01) |
| 32660070 | AA\_DRB1\_26\_32660070\_L | 0.9098 | 0.906 | P | 0.12 | 0.14 | A | 1 | 4.27E-03 | 0.8 ( 0.68- 0.93) |
| 32660070 | AA\_DRB1\_26\_32660070\_Y | 1.0009 | 0.992 | P | 0.20 | 0.15 | A | 1 | 2.41E-06 | 1.39 ( 1.21- 1.59) |
| 32660073 | AA\_DRB1\_25\_32660073 | 1.0382 | 0.997 | Q | 0.07 | 0.15 | R | 1 | 1.93E-21 | 0.43 ( 0.36- 0.51) |
| 32660100 | AA\_DRB1\_16\_32660100\_H | 0.9081 | 0.895 | P | 0.80 | 0.81 | A | 1 | 1.53E-01 | 0.91 ( 0.80- 1.04) |
| 32660100 | AA\_DRB1\_16\_32660100\_Y | 0.9074 | 0.885 | P | 0.19 | 0.18 | A | 1 | 9.71E-02 | 1.12 ( 0.98- 1.28) |
| 32660106 | AA\_DRB1\_14\_32660106 | 1.0394 | 0.998 | K | 0.07 | 0.15 | E | 1 | 1.93E-21 | 0.43 ( 0.36- 0.51) |
| 32660109 | AA\_DRB1\_13\_32660109\_F | 1.0188 | 0.993 | P | 0.18 | 0.16 | A | 1 | 1.07E-02 | 1.19 ( 1.04- 1.37) |
| 32660109 | AA\_DRB1\_13\_32660109\_G | 0.9075 | 0.885 | P | 0.19 | 0.18 | A | 1 | 9.71E-02 | 1.12 ( 0.98- 1.28) |
| 32660109 | AA\_DRB1\_13\_32660109\_H | 0.9875 | 0.998 | P | 0.12 | 0.11 | A | 1 | 2.41E-01 | 1.1 ( 0.94- 1.30) |
| 32660109 | AA\_DRB1\_13\_32660109\_R | 0.9592 | 0.995 | P | 0.25 | 0.20 | A | 1 | 4.17E-05 | 1.3 ( 1.15- 1.48) |
| 32660109 | AA\_DRB1\_13\_32660109\_S | 0.9165 | 0.89 | P | 0.19 | 0.20 | A | 1 | 1.76E-01 | 0.91 ( 0.80- 1.04) |
| 32660109 | AA\_DRB1\_13\_32660109\_Y | 1.0397 | 0.998 | P | 0.07 | 0.15 | A | 1 | 1.93E-21 | 0.43 ( 0.36- 0.51) |
| 32660112 | AA\_DRB1\_12\_32660112 | 0.9905 | 0.995 | T | 0.38 | 0.38 | K | 1 | 8.23E-01 | 1.01 ( 0.91- 1.13) |
| 32660115 | AA\_DRB1\_11\_32660115\_D | 1.0261 | 0.992 | P | 0.15 | 0.11 | A | 1 | 1.23E-05 | 1.4 ( 1.20- 1.62) |
| 32660115 | AA\_DRB1\_11\_32660115\_G | 1.0395 | 0.998 | P | 0.07 | 0.15 | A | 1 | 1.93E-21 | 0.43 ( 0.36- 0.51) |
| 32660115 | AA\_DRB1\_11\_32660115\_L | 0.9926 | 0.993 | P | 0.02 | 0.03 | A | 1 | 6.13E-02 | 0.74 ( 0.53- 1.02) |
| 32660115 | AA\_DRB1\_11\_32660115\_P | 0.9593 | 0.995 | P | 0.25 | 0.20 | A | 1 | 4.17E-05 | 1.3 ( 1.15- 1.48) |
| 32660115 | AA\_DRB1\_11\_32660115\_S | 0.9905 | 0.995 | P | 0.38 | 0.38 | A | 1 | 8.23E-01 | 1.01 ( 0.91- 1.13) |
| 32660115 | AA\_DRB1\_11\_32660115\_V | 0.9783 | 0.999 | P | 0.12 | 0.12 | A | 1 | 7.02E-01 | 1.03 ( 0.88- 1.21) |
| 32660118 | AA\_DRB1\_10\_32660118\_Q | 0.9965 | 0.995 | P | 0.61 | 0.61 | A | 1 | 7.78E-01 | 1.02 ( 0.91- 1.13) |
| 32660118 | AA\_DRB1\_10\_32660118\_Y | 0.9898 | 0.995 | P | 0.38 | 0.38 | A | 1 | 8.44E-01 | 1.01 ( 0.91- 1.12) |
| 32660121 | AA\_DRB1\_9\_32660121\_E | 0.9724 | 0.995 | P | 0.51 | 0.50 | A | 1 | 6.38E-01 | 1.03 ( 0.92- 1.14) |
| 32660121 | AA\_DRB1\_9\_32660121\_K | 1.0256 | 0.992 | P | 0.15 | 0.11 | A | 1 | 1.23E-05 | 1.4 ( 1.20- 1.62) |
| 32660121 | AA\_DRB1\_9\_32660121\_W | 0.9647 | 0.997 | P | 0.34 | 0.39 | A | 1 | 2.14E-04 | 0.81 ( 0.73- 0.91) |
| 32665400 | AA\_DRB1\_4\_32665400\_Q | 1.0276 | 0.995 | P | 0.22 | 0.27 | A | 1 | 2.31E-04 | 0.8 ( 0.71- 0.90) |
| 32665400 | AA\_DRB1\_4\_32665400\_R | 1.0244 | 0.992 | P | 0.78 | 0.73 | A | 1 | 2.31E-04 | 1.25 ( 1.11- 1.41) |
| 32665412 | AA\_DRB1\_-1\_32665412\_A | 0.9214 | 0.979 | P | 0.79 | 0.81 | A | 1 | 2.62E-02 | 0.86 ( 0.75- 0.98) |
| 32665412 | AA\_DRB1\_-1\_32665412\_S | 0.9282 | 0.987 | P | 0.21 | 0.19 | A | 1 | 2.63E-02 | 1.16 ( 1.02- 1.33) |
| 32665457 | AA\_DRB1\_-16\_32665457\_A | 0.9963 | 0.995 | P | 0.61 | 0.61 | A | 1 | 7.78E-01 | 1.02 ( 0.91- 1.13) |
| 32665457 | AA\_DRB1\_-16\_32665457\_V | 0.9908 | 0.99 | P | 0.39 | 0.39 | A | 1 | 7.77E-01 | 0.98 ( 0.89- 1.09) |
| 32665460 | AA\_DRB1\_-17\_32665460\_A | 0.9499 | 0.99 | P | 0.73 | 0.77 | A | 1 | 1.18E-03 | 0.82 ( 0.73- 0.92) |
| 32665460 | AA\_DRB1\_-17\_32665460\_T | 0.956 | 0.996 | P | 0.27 | 0.23 | A | 1 | 1.19E-03 | 1.22 ( 1.08- 1.38) |
| 32665481 | AA\_DRB1\_-24\_32665481\_F | 0.9876 | 0.998 | P | 0.12 | 0.11 | A | 1 | 2.41E-01 | 1.1 ( 0.94- 1.30) |
| 32665481 | AA\_DRB1\_-24\_32665481\_L | 0.9759 | 0.987 | P | 0.88 | 0.89 | A | 1 | 2.41E-01 | 0.91 ( 0.77- 1.07) |
| 32665484 | AA\_DRB1\_-25\_32665484\_K | 0.9965 | 0.995 | P | 0.61 | 0.61 | A | 1 | 7.78E-01 | 1.02 ( 0.91- 1.13) |
| 32665484 | AA\_DRB1\_-25\_32665484\_R | 0.9905 | 0.99 | P | 0.39 | 0.39 | A | 1 | 7.77E-01 | 0.98 ( 0.89- 1.09) |
| 32713236 | AA\_DQA1\_-16\_32713236\_L | 1.0002 | 0.997 | P | 0.48 | 0.48 | A | 1 | 9.16E-01 | 0.99 ( 0.90- 1.10) |
| 32713236 | AA\_DQA1\_-16\_32713236\_M | 0.9998 | 0.997 | P | 0.52 | 0.52 | A | 1 | 9.16E-01 | 1.01 ( 0.91- 1.11) |
| 32716284 | HLA\_DQA1\_01 | 0.9979 | 0.996 | P | 0.42 | 0.40 | A | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32716284 | HLA\_DQA1\_0101 | 1.018 | 0.995 | P | 0.07 | 0.10 | A | 1 | 1.25E-03 | 0.74 ( 0.62- 0.89) |
| 32716284 | HLA\_DQA1\_0102 | 0.9643 | 0.986 | P | 0.23 | 0.21 | A | 1 | 5.08E-02 | 1.13 ( 1.00- 1.28) |
| 32716284 | HLA\_DQA1\_0103 | 0.9991 | 0.985 | P | 0.11 | 0.09 | A | 1 | 1.81E-03 | 1.31 ( 1.11- 1.56) |
| 32716284 | HLA\_DQA1\_02 | 1.0414 | 0.999 | P | 0.07 | 0.15 | A | 1 | 1.93E-21 | 0.43 ( 0.36- 0.51) |
| 32716284 | HLA\_DQA1\_0201 | 1.0414 | 0.999 | P | 0.07 | 0.15 | A | 1 | 1.93E-21 | 0.43 ( 0.36- 0.51) |
| 32716284 | HLA\_DQA1\_03 | 0.9824 | 0.987 | P | 0.27 | 0.22 | A | 1 | 1.02E-05 | 1.31 ( 1.16- 1.48) |
| 32716284 | HLA\_DQA1\_0301 | 0.9824 | 0.987 | P | 0.27 | 0.22 | A | 1 | 1.02E-05 | 1.31 ( 1.16- 1.48) |
| 32716284 | HLA\_DQA1\_05 | 0.9912 | 0.976 | P | 0.18 | 0.15 | A | 1 | 5.14E-04 | 1.28 ( 1.11- 1.47) |
| 32716284 | HLA\_DQA1\_0501 | 0.9912 | 0.976 | P | 0.18 | 0.15 | A | 1 | 5.14E-04 | 1.28 ( 1.11- 1.47) |
| 32716284 | HLA\_DQA1\_06 | 0.9996 | 0.99 | P | 0.04 | 0.07 | A | 1 | 6.25E-05 | 0.63 ( 0.50- 0.79) |
| 32716284 | HLA\_DQA1\_0601 | 0.9979 | 0.988 | P | 0.04 | 0.07 | A | 1 | 6.25E-05 | 0.63 ( 0.50- 0.79) |
| 32717083 | AA\_DQA1\_11\_32717083 | 0.998 | 0.997 | C | 0.42 | 0.40 | Y | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717104 | AA\_DQA1\_18\_32717104 | 0.998 | 0.997 | F | 0.42 | 0.40 | S | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717125 | AA\_DQA1\_25\_32717125 | 1.0177 | 0.99 | F | 0.23 | 0.31 | Y | 1 | 4.75E-12 | 0.66 ( 0.59- 0.74) |
| 32717128 | AA\_DQA1\_26\_32717128 | 0.9824 | 0.987 | S | 0.27 | 0.22 | T | 1 | 1.02E-05 | 1.31 ( 1.16- 1.48) |
| 32717152 | AA\_DQA1\_34\_32717152 | 1.0211 | 0.989 | E | 0.42 | 0.47 | Q | 1 | 2.26E-05 | 0.8 ( 0.72- 0.89) |
| 32717170 | AA\_DQA1\_40\_32717170 | 0.982 | 0.982 | G | 0.23 | 0.22 | E | 1 | 3.54E-01 | 1.06 ( 0.94- 1.20) |
| 32717173 | AA\_DQA1\_41\_32717173 | 0.9991 | 0.985 | K | 0.11 | 0.09 | R | 1 | 1.81E-03 | 1.31 ( 1.11- 1.56) |
| 32717185 | AA\_DQA1\_45\_32717185 | 0.9972 | 0.996 | A | 0.42 | 0.40 | V | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717191 | AA\_DQA1\_47\_32717191\_C | 0.982 | 0.982 | P | 0.23 | 0.22 | A | 1 | 3.54E-01 | 1.06 ( 0.94- 1.20) |
| 32717191 | AA\_DQA1\_47\_32717191\_K | 1.0414 | 0.999 | P | 0.07 | 0.15 | A | 1 | 1.93E-21 | 0.43 ( 0.36- 0.51) |
| 32717191 | AA\_DQA1\_47\_32717191\_Q | 0.9824 | 0.987 | P | 0.27 | 0.22 | A | 1 | 1.02E-05 | 1.31 ( 1.16- 1.48) |
| 32717191 | AA\_DQA1\_47\_32717191\_R | 0.9976 | 0.996 | P | 0.42 | 0.40 | A | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717194 | AA\_DQA1\_48\_32717194 | 0.9979 | 0.997 | W | 0.42 | 0.40 | L | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717200 | AA\_DQA1\_50\_32717200\_E | 0.9976 | 0.996 | P | 0.42 | 0.40 | A | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717200 | AA\_DQA1\_50\_32717200\_L | 0.9958 | 0.99 | P | 0.34 | 0.38 | A | 1 | 1.08E-02 | 0.87 ( 0.78- 0.97) |
| 32717200 | AA\_DQA1\_50\_32717200\_V | 0.982 | 0.982 | P | 0.23 | 0.22 | A | 1 | 3.54E-01 | 1.06 ( 0.94- 1.20) |
| 32717203 | AA\_DQA1\_51\_32717203 | 0.982 | 0.982 | L | 0.23 | 0.22 | F | 1 | 3.54E-01 | 1.06 ( 0.94- 1.20) |
| 32717206 | AA\_DQA1\_52\_32717206\_H | 1.0414 | 1 | P | 0.07 | 0.15 | A | 1 | 1.93E-21 | 0.43 ( 0.36- 0.51) |
| 32717206 | AA\_DQA1\_52\_32717206\_R | 0.9949 | 0.997 | P | 0.51 | 0.45 | A | 1 | 4.57E-06 | 1.27 ( 1.15- 1.41) |
| 32717206 | AA\_DQA1\_52\_32717206\_S | 0.9973 | 0.996 | P | 0.42 | 0.40 | A | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717209 | AA\_DQA1\_53\_32717209\_K | 0.9979 | 0.996 | P | 0.42 | 0.40 | A | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717209 | AA\_DQA1\_53\_32717209\_Q | 0.982 | 0.982 | P | 0.23 | 0.22 | A | 1 | 3.54E-01 | 1.06 ( 0.94- 1.20) |
| 32717209 | AA\_DQA1\_53\_32717209\_R | 0.9957 | 0.989 | P | 0.34 | 0.38 | A | 1 | 1.08E-02 | 0.87 ( 0.78- 0.97) |
| 32717212 | AA\_DQA1\_54\_32717212 | 1.0415 | 1 | L | 0.07 | 0.15 | F | 1 | 1.93E-21 | 0.43 ( 0.36- 0.51) |
| 32717215 | AA\_DQA1\_55\_32717215 | 0.9977 | 0.996 | G | 0.42 | 0.40 | R | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717218 | AA\_DQA1\_56\_32717218\_G | 0.9976 | 0.996 | P | 0.42 | 0.40 | A | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717218 | AA\_DQA1\_56\_32717218\_R | 0.9824 | 0.987 | P | 0.27 | 0.22 | A | 1 | 1.02E-05 | 1.31 ( 1.16- 1.48) |
| 32717218 | AA\_DQA1\_56\_32717218\_x | 0.9967 | 0.986 | P | 0.30 | 0.38 | A | 1 | 8.90E-09 | 0.73 ( 0.65- 0.81) |
| 32717233 | AA\_DQA1\_61\_32717233 | 0.998 | 0.997 | G | 0.42 | 0.40 | F | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717242 | AA\_DQA1\_64\_32717242 | 0.9975 | 0.996 | R | 0.42 | 0.40 | T | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717248 | AA\_DQA1\_66\_32717248 | 0.9977 | 0.996 | M | 0.42 | 0.40 | I | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717257 | AA\_DQA1\_69\_32717257\_A | 0.9977 | 0.996 | P | 0.42 | 0.40 | A | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717257 | AA\_DQA1\_69\_32717257\_L | 0.9968 | 0.994 | P | 0.52 | 0.52 | A | 1 | 8.95E-01 | 1.01 ( 0.91- 1.12) |
| 32717257 | AA\_DQA1\_69\_32717257\_T | 0.9889 | 0.991 | P | 0.05 | 0.08 | A | 1 | 2.75E-04 | 0.68 ( 0.55- 0.83) |
| 32717275 | AA\_DQA1\_75\_32717275 | 0.9912 | 0.976 | S | 0.18 | 0.15 | I | 1 | 5.14E-04 | 1.28 ( 1.11- 1.47) |
| 32717278 | AA\_DQA1\_76\_32717278\_L | 0.9967 | 0.986 | P | 0.30 | 0.38 | A | 1 | 8.90E-09 | 0.73 ( 0.65- 0.81) |
| 32717278 | AA\_DQA1\_76\_32717278\_M | 0.998 | 0.997 | P | 0.42 | 0.40 | A | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717278 | AA\_DQA1\_76\_32717278\_V | 0.9824 | 0.987 | P | 0.27 | 0.22 | A | 1 | 1.02E-05 | 1.31 ( 1.16- 1.48) |
| 32717290 | AA\_DQA1\_80\_32717290 | 0.998 | 0.997 | Y | 0.42 | 0.40 | S | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32717784 | AA\_DQA1\_107\_32717784\_I | 0.9865 | 0.971 | P | 0.18 | 0.15 | A | 1 | 5.14E-04 | 1.28 ( 1.11- 1.47) |
| 32717784 | AA\_DQA1\_107\_32717784\_T | 0.9915 | 0.976 | P | 0.82 | 0.85 | A | 1 | 5.14E-04 | 0.78 ( 0.68- 0.90) |
| 32717850 | AA\_DQA1\_129\_32717850\_H | 0.9528 | 0.989 | P | 0.69 | 0.69 | A | 1 | 8.05E-01 | 1.01 ( 0.91- 1.14) |
| 32717850 | AA\_DQA1\_129\_32717850\_Q | 0.9528 | 0.989 | P | 0.31 | 0.31 | A | 1 | 8.05E-01 | 0.99 ( 0.88- 1.10) |
| 32717853 | AA\_DQA1\_130\_32717853\_A | 0.9991 | 0.985 | P | 0.11 | 0.09 | A | 1 | 1.81E-03 | 1.31 ( 1.11- 1.56) |
| 32717853 | AA\_DQA1\_130\_32717853\_S | 0.9983 | 0.984 | P | 0.89 | 0.91 | A | 1 | 1.81E-03 | 0.76 ( 0.64- 0.90) |
| 32717931 | AA\_DQA1\_156\_32717931\_F | 0.9914 | 0.976 | P | 0.82 | 0.85 | A | 1 | 5.14E-04 | 0.78 ( 0.68- 0.90) |
| 32717931 | AA\_DQA1\_156\_32717931\_L | 0.9914 | 0.976 | P | 0.18 | 0.15 | A | 1 | 5.14E-04 | 1.28 ( 1.11- 1.47) |
| 32717946 | AA\_DQA1\_161\_32717946\_D | 0.9912 | 0.975 | P | 0.82 | 0.85 | A | 1 | 5.14E-04 | 0.78 ( 0.68- 0.90) |
| 32717946 | AA\_DQA1\_161\_32717946\_E | 0.9914 | 0.976 | P | 0.18 | 0.15 | A | 1 | 5.14E-04 | 1.28 ( 1.11- 1.47) |
| 32717952 | AA\_DQA1\_163\_32717952\_I | 0.9912 | 0.975 | P | 0.82 | 0.85 | A | 1 | 5.14E-04 | 0.78 ( 0.68- 0.90) |
| 32717952 | AA\_DQA1\_163\_32717952\_S | 0.9914 | 0.976 | P | 0.18 | 0.15 | A | 1 | 5.14E-04 | 1.28 ( 1.11- 1.47) |
| 32717988 | AA\_DQA1\_175\_32717988\_E | 1.0028 | 0.989 | P | 0.40 | 0.45 | A | 1 | 1.89E-05 | 0.8 ( 0.72- 0.88) |
| 32717988 | AA\_DQA1\_175\_32717988\_K | 0.9914 | 0.976 | P | 0.18 | 0.15 | A | 1 | 5.14E-04 | 1.28 ( 1.11- 1.47) |
| 32717988 | AA\_DQA1\_175\_32717988\_Q | 0.9978 | 0.997 | P | 0.42 | 0.40 | A | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32718380 | AA\_DQA1\_187\_32718380\_A | 0.983 | 0.987 | P | 0.73 | 0.78 | A | 1 | 9.02E-06 | 0.76 ( 0.68- 0.86) |
| 32718380 | AA\_DQA1\_187\_32718380\_T | 0.983 | 0.987 | P | 0.27 | 0.22 | A | 1 | 9.02E-06 | 1.31 ( 1.16- 1.48) |
| 32718440 | AA\_DQA1\_207\_32718440\_M | 0.9648 | 0.987 | P | 0.23 | 0.21 | A | 1 | 5.08E-02 | 1.13 ( 1.00- 1.28) |
| 32718440 | AA\_DQA1\_207\_32718440\_V | 0.9647 | 0.986 | P | 0.77 | 0.79 | A | 1 | 5.08E-02 | 0.88 ( 0.78- 1.00) |
| 32718464 | AA\_DQA1\_215\_32718464\_F | 0.9963 | 0.989 | P | 0.66 | 0.62 | A | 1 | 1.17E-02 | 1.15 ( 1.03- 1.28) |
| 32718464 | AA\_DQA1\_215\_32718464\_L | 0.9962 | 0.989 | P | 0.34 | 0.38 | A | 1 | 1.17E-02 | 0.87 ( 0.78- 0.97) |
| 32718473 | AA\_DQA1\_218\_32718473\_Q | 0.9981 | 0.997 | P | 0.42 | 0.40 | A | 1 | 8.88E-02 | 1.1 ( 0.99- 1.22) |
| 32718473 | AA\_DQA1\_218\_32718473\_R | 0.9981 | 0.997 | P | 0.58 | 0.60 | A | 1 | 8.88E-02 | 0.91 ( 0.82- 1.01) |
| 32737107 | AA\_DQB1\_224\_32737107\_Q | 0.9809 | 0.961 | P | 0.87 | 0.88 | A | 1 | 6.29E-01 | 0.96 ( 0.83- 1.12) |
| 32737107 | AA\_DQB1\_224\_32737107\_R | 0.9819 | 0.962 | P | 0.13 | 0.12 | A | 1 | 6.29E-01 | 1.04 ( 0.89- 1.21) |
| 32737116 | AA\_DQB1\_221\_32737116\_H | 0.9756 | 0.961 | P | 0.58 | 0.60 | A | 1 | 1.46E-01 | 0.93 ( 0.83- 1.03) |
| 32737116 | AA\_DQB1\_221\_32737116\_Q | 0.9747 | 0.961 | P | 0.42 | 0.40 | A | 1 | 1.46E-01 | 1.08 ( 0.97- 1.20) |
| 32737119 | AA\_DQB1\_220\_32737119\_H | 0.9756 | 0.961 | P | 0.58 | 0.60 | A | 1 | 1.46E-01 | 0.93 ( 0.83- 1.03) |
| 32737119 | AA\_DQB1\_220\_32737119\_R | 0.9747 | 0.961 | P | 0.42 | 0.40 | A | 1 | 1.46E-01 | 1.08 ( 0.97- 1.20) |
| 32737170 | AA\_DQB1\_203\_32737170\_I | 0.9528 | 0.98 | P | 0.69 | 0.68 | A | 1 | 4.75E-01 | 1.04 ( 0.93- 1.17) |
| 32737170 | AA\_DQB1\_203\_32737170\_V | 0.9524 | 0.98 | P | 0.31 | 0.32 | A | 1 | 4.75E-01 | 0.96 ( 0.86- 1.07) |
| 32737188 | AA\_DQB1\_197\_32737188\_N | 0.8842 | 0.843 | P | 0.11 | 0.08 | A | 1 | 2.93E-04 | 1.39 ( 1.16- 1.66) |
| 32737188 | AA\_DQB1\_197\_32737188\_S | 0.882 | 0.841 | P | 0.89 | 0.92 | A | 1 | 2.93E-04 | 0.72 ( 0.60- 0.86) |
| 32737733 | AA\_DQB1\_185\_32737733\_I | 0.9865 | 0.971 | P | 0.28 | 0.23 | A | 1 | 2.11E-05 | 1.29 ( 1.15- 1.45) |
| 32737733 | AA\_DQB1\_185\_32737733\_T | 0.9855 | 0.97 | P | 0.72 | 0.77 | A | 1 | 2.11E-05 | 0.77 ( 0.69- 0.87) |
| 32737742 | AA\_DQB1\_182\_32737742\_N | 0.9746 | 0.961 | P | 0.47 | 0.42 | A | 1 | 1.16E-04 | 1.23 ( 1.11- 1.36) |
| 32737742 | AA\_DQB1\_182\_32737742\_S | 0.9737 | 0.96 | P | 0.53 | 0.58 | A | 1 | 1.16E-04 | 0.82 ( 0.74- 0.91) |
| 32737787 | AA\_DQB1\_167\_32737787\_H | 0.952 | 0.945 | P | 0.30 | 0.27 | A | 1 | 1.24E-02 | 1.16 ( 1.03- 1.30) |
| 32737787 | AA\_DQB1\_167\_32737787\_R | 0.9512 | 0.944 | P | 0.70 | 0.73 | A | 1 | 1.24E-02 | 0.86 ( 0.77- 0.97) |
| 32737868 | AA\_DQB1\_140\_32737868\_A | 0.9737 | 0.96 | P | 0.53 | 0.58 | A | 1 | 1.16E-04 | 0.82 ( 0.74- 0.91) |
| 32737868 | AA\_DQB1\_140\_32737868\_T | 0.9746 | 0.961 | P | 0.47 | 0.42 | A | 1 | 1.16E-04 | 1.23 ( 1.11- 1.36) |
| 32737898 | AA\_DQB1\_130\_32737898\_Q | 1.003 | 0.993 | P | 0.03 | 0.05 | A | 1 | 1.02E-04 | 0.59 ( 0.46- 0.77) |
| 32737898 | AA\_DQB1\_130\_32737898\_R | 0.9957 | 0.986 | P | 0.97 | 0.95 | A | 1 | 1.02E-04 | 1.69 ( 1.30- 2.20) |
| 32737910 | AA\_DQB1\_126\_32737910\_H | 1.0128 | 0.977 | P | 0.06 | 0.03 | A | 1 | 1.66E-04 | 1.62 ( 1.26- 2.09) |
| 32737910 | AA\_DQB1\_126\_32737910\_Q | 1.0098 | 0.973 | P | 0.94 | 0.97 | A | 1 | 1.66E-04 | 0.62 ( 0.48- 0.79) |
| 32737913 | AA\_DQB1\_125\_32737913\_A | 0.9756 | 0.961 | P | 0.58 | 0.60 | A | 1 | 1.46E-01 | 0.93 ( 0.83- 1.03) |
| 32737913 | AA\_DQB1\_125\_32737913\_G | 0.9469 | 0.936 | P | 0.29 | 0.28 | A | 1 | 2.06E-01 | 1.08 ( 0.96- 1.21) |
| 32737913 | AA\_DQB1\_125\_32737913\_S | 0.9825 | 0.963 | P | 0.13 | 0.12 | A | 1 | 6.29E-01 | 1.04 ( 0.89- 1.21) |
| 32737940 | AA\_DQB1\_116\_32737940\_I | 0.9817 | 0.962 | P | 0.13 | 0.12 | A | 1 | 6.29E-01 | 1.04 ( 0.89- 1.21) |
| 32737940 | AA\_DQB1\_116\_32737940\_V | 0.9806 | 0.961 | P | 0.87 | 0.88 | A | 1 | 6.29E-01 | 0.96 ( 0.83- 1.12) |
| 32739039 | HLA\_DQB1\_02 | 1.0048 | 0.98 | P | 0.11 | 0.18 | A | 1 | 2.31E-13 | 0.57 ( 0.49- 0.66) |
| 32739039 | HLA\_DQB1\_0201 | 1.0042 | 0.98 | P | 0.11 | 0.18 | A | 1 | 2.31E-13 | 0.57 ( 0.49- 0.66) |
| 32739039 | HLA\_DQB1\_03 | 0.9833 | 0.959 | P | 0.40 | 0.37 | A | 1 | 1.97E-02 | 1.13 ( 1.02- 1.26) |
| 32739039 | HLA\_DQB1\_0301 | 0.9636 | 0.95 | P | 0.19 | 0.19 | A | 1 | 8.33E-01 | 1.01 ( 0.89- 1.16) |
| 32739039 | HLA\_DQB1\_0302 | 0.9478 | 0.933 | P | 0.04 | 0.05 | A | 1 | 1.90E-01 | 0.85 ( 0.67- 1.08) |
| 32739039 | HLA\_DQB1\_0303 | 1.0155 | 0.976 | P | 0.16 | 0.13 | A | 1 | 1.59E-04 | 1.32 ( 1.14- 1.52) |
| 32739039 | HLA\_DQB1\_04 | 0.9971 | 0.997 | P | 0.07 | 0.05 | A | 1 | 1.01E-03 | 1.43 ( 1.16- 1.77) |
| 32739039 | HLA\_DQB1\_0401 | 0.9651 | 0.976 | P | 0.06 | 0.04 | A | 1 | 4.55E-03 | 1.4 ( 1.11- 1.77) |
| 32739039 | HLA\_DQB1\_0402 | 0.9116 | 0.902 | P | 0.01 | 0.01 | A | 1 | 1.17E-01 | 1.5 ( 0.90- 2.48) |
| 32739039 | HLA\_DQB1\_05 | 0.9822 | 0.962 | P | 0.13 | 0.12 | A | 1 | 6.56E-01 | 1.04 ( 0.89- 1.21) |
| 32739039 | HLA\_DQB1\_0501 | 0.9179 | 0.922 | P | 0.04 | 0.05 | A | 1 | 9.73E-03 | 0.71 ( 0.55- 0.92) |
| 32739039 | HLA\_DQB1\_0502 | 1.0126 | 0.977 | P | 0.05 | 0.03 | A | 1 | 2.04E-04 | 1.61 ( 1.25- 2.07) |
| 32739039 | HLA\_DQB1\_0503 | 1.0264 | 0.995 | P | 0.03 | 0.04 | A | 1 | 5.40E-01 | 0.92 ( 0.70- 1.21) |
| 32739039 | HLA\_DQB1\_06 | 0.9468 | 0.936 | P | 0.29 | 0.28 | A | 1 | 2.06E-01 | 1.08 ( 0.96- 1.21) |
| 32739039 | HLA\_DQB1\_0601 | 0.8842 | 0.843 | P | 0.11 | 0.08 | A | 1 | 3.42E-04 | 1.39 ( 1.16- 1.66) |
| 32739039 | HLA\_DQB1\_0602 | 0.9326 | 0.99 | P | 0.14 | 0.13 | A | 1 | 1.92E-01 | 1.11 ( 0.95- 1.30) |
| 32739039 | HLA\_DQB1\_0603 | 1.0024 | 0.983 | P | 0.02 | 0.02 | A | 1 | 4.60E-01 | 0.87 ( 0.59- 1.27) |
| 32739039 | HLA\_DQB1\_0604 | 0.9829 | 0.997 | P | 0.02 | 0.03 | A | 1 | 5.07E-03 | 0.63 ( 0.45- 0.87) |
| 32739039 | HLA\_DQB1\_0609 | 0.9974 | 0.983 | P | 0.01 | 0.02 | A | 1 | 4.60E-03 | 0.52 ( 0.33- 0.82) |
| 32740567 | AA\_DQB1\_90\_32740567\_I | 0.9692 | 0.955 | P | 0.42 | 0.40 | A | 1 | 1.53E-01 | 1.08 ( 0.97- 1.20) |
| 32740567 | AA\_DQB1\_90\_32740567\_T | 0.969 | 0.955 | P | 0.58 | 0.60 | A | 1 | 1.53E-01 | 0.93 ( 0.84- 1.03) |
| 32740570 | AA\_DQB1\_89\_32740570\_G | 0.9692 | 0.955 | P | 0.42 | 0.40 | A | 1 | 1.53E-01 | 1.08 ( 0.97- 1.20) |
| 32740570 | AA\_DQB1\_89\_32740570\_T | 0.9691 | 0.955 | P | 0.58 | 0.60 | A | 1 | 1.53E-01 | 0.93 ( 0.84- 1.03) |
| 32740576 | AA\_DQB1\_87\_32740576\_F | 0.9333 | 0.928 | P | 0.26 | 0.23 | A | 1 | 1.30E-03 | 1.22 ( 1.08- 1.38) |
| 32740576 | AA\_DQB1\_87\_32740576\_L | 0.969 | 0.955 | P | 0.58 | 0.60 | A | 1 | 1.53E-01 | 0.93 ( 0.84- 1.03) |
| 32740576 | AA\_DQB1\_87\_32740576\_Y | 0.9579 | 0.958 | P | 0.16 | 0.17 | A | 1 | 7.18E-02 | 0.88 ( 0.77- 1.01) |
| 32740579 | AA\_DQB1\_86\_32740579\_A | 0.973 | 0.952 | P | 0.39 | 0.35 | A | 1 | 1.86E-03 | 1.18 ( 1.06- 1.32) |
| 32740579 | AA\_DQB1\_86\_32740579\_E | 0.9691 | 0.955 | P | 0.58 | 0.60 | A | 1 | 1.53E-01 | 0.93 ( 0.84- 1.03) |
| 32740579 | AA\_DQB1\_86\_32740579\_G | 1.0024 | 0.993 | P | 0.03 | 0.05 | A | 1 | 7.68E-05 | 0.59 ( 0.45- 0.76) |
| 32740582 | AA\_DQB1\_85\_32740582\_L | 0.969 | 0.955 | P | 0.58 | 0.60 | A | 1 | 1.53E-01 | 0.93 ( 0.84- 1.03) |
| 32740582 | AA\_DQB1\_85\_32740582\_V | 0.969 | 0.955 | P | 0.42 | 0.40 | A | 1 | 1.53E-01 | 1.08 ( 0.97- 1.20) |
| 32740585 | AA\_DQB1\_84\_32740585\_E | 0.9691 | 0.955 | P | 0.42 | 0.40 | A | 1 | 1.53E-01 | 1.08 ( 0.97- 1.20) |
| 32740585 | AA\_DQB1\_84\_32740585\_Q | 0.969 | 0.955 | P | 0.58 | 0.60 | A | 1 | 1.53E-01 | 0.93 ( 0.84- 1.03) |
| 32740606 | AA\_DQB1\_77\_32740606 | 0.9651 | 0.959 | R | 0.23 | 0.30 | T | 1 | 1.78E-08 | 0.71 ( 0.63- 0.80) |
| 32740612 | AA\_DQB1\_75\_32740612 | 0.9634 | 0.963 | V | 0.31 | 0.35 | L | 1 | 2.37E-04 | 0.81 ( 0.73- 0.91) |
| 32740615 | AA\_DQB1\_74\_32740615\_A | 1.0039 | 0.979 | P | 0.11 | 0.18 | A | 1 | 1.37E-13 | 0.57 ( 0.49- 0.66) |
| 32740615 | AA\_DQB1\_74\_32740615\_E | 0.9638 | 0.963 | P | 0.69 | 0.65 | A | 1 | 2.37E-04 | 1.23 ( 1.10- 1.37) |
| 32740615 | AA\_DQB1\_74\_32740615\_S | 0.9583 | 0.962 | P | 0.20 | 0.18 | A | 1 | 1.85E-02 | 1.17 ( 1.03- 1.34) |
| 32740624 | AA\_DQB1\_71\_32740624\_A | 0.9678 | 0.948 | P | 0.13 | 0.12 | A | 1 | 7.13E-01 | 1.03 ( 0.88- 1.20) |
| 32740624 | AA\_DQB1\_71\_32740624\_D | 0.9976 | 0.997 | P | 0.07 | 0.05 | A | 1 | 1.46E-03 | 1.41 ( 1.14- 1.75) |
| 32740624 | AA\_DQB1\_71\_32740624\_K | 1.0024 | 0.978 | P | 0.11 | 0.18 | A | 1 | 1.37E-13 | 0.57 ( 0.49- 0.66) |
| 32740624 | AA\_DQB1\_71\_32740624\_T | 0.9633 | 0.963 | P | 0.69 | 0.65 | A | 1 | 2.37E-04 | 1.23 ( 1.10- 1.37) |
| 32740627 | AA\_DQB1\_70\_32740627\_E | 0.9962 | 0.995 | P | 0.07 | 0.05 | A | 1 | 1.46E-03 | 1.41 ( 1.14- 1.75) |
| 32740627 | AA\_DQB1\_70\_32740627\_G | 0.9451 | 0.969 | P | 0.28 | 0.27 | A | 1 | 3.05E-01 | 1.06 ( 0.95- 1.19) |
| 32740627 | AA\_DQB1\_70\_32740627\_R | 0.9396 | 0.971 | P | 0.65 | 0.68 | A | 1 | 8.00E-03 | 0.86 ( 0.77- 0.96) |
| 32740636 | AA\_DQB1\_67\_32740636 | 0.9806 | 0.94 | I | 0.29 | 0.31 | V | 1 | 7.86E-02 | 0.91 ( 0.81- 1.01) |
| 32740639 | AA\_DQB1\_66\_32740639 | 0.9799 | 0.94 | D | 0.29 | 0.31 | E | 1 | 7.86E-02 | 0.91 ( 0.81- 1.01) |
| 32740666 | AA\_DQB1\_57\_32740666\_A | 0.9956 | 0.966 | P | 0.15 | 0.23 | A | 1 | 2.66E-13 | 0.61 ( 0.53- 0.70) |
| 32740666 | AA\_DQB1\_57\_32740666\_D | 0.9627 | 0.951 | P | 0.73 | 0.64 | A | 1 | 1.79E-13 | 1.52 ( 1.36- 1.70) |
| 32740666 | AA\_DQB1\_57\_32740666\_S | 0.975 | 0.941 | P | 0.05 | 0.03 | A | 1 | 3.38E-04 | 1.58 ( 1.23- 2.03) |
| 32740666 | AA\_DQB1\_57\_32740666\_V | 0.9311 | 0.953 | P | 0.07 | 0.10 | A | 1 | 1.63E-06 | 0.63 ( 0.52- 0.76) |
| 32740669 | AA\_DQB1\_56\_32740669 | 0.9984 | 0.997 | L | 0.07 | 0.05 | P | 1 | 1.46E-03 | 1.41 ( 1.14- 1.75) |
| 32740672 | AA\_DQB1\_55\_32740672\_L | 1.0036 | 0.978 | P | 0.11 | 0.18 | A | 1 | 1.76E-13 | 0.57 ( 0.49- 0.66) |
| 32740672 | AA\_DQB1\_55\_32740672\_P | 0.9765 | 0.953 | P | 0.40 | 0.37 | A | 1 | 2.11E-02 | 1.13 ( 1.02- 1.26) |
| 32740672 | AA\_DQB1\_55\_32740672\_R | 0.9723 | 0.956 | P | 0.49 | 0.45 | A | 1 | 2.85E-03 | 1.17 ( 1.06- 1.30) |
| 32740678 | AA\_DQB1\_53\_32740678 | 0.9688 | 0.955 | Q | 0.42 | 0.40 | L | 1 | 1.53E-01 | 1.08 ( 0.97- 1.20) |
| 32740681 | AA\_DQB1\_52\_32740681 | 1.0042 | 0.979 | L | 0.11 | 0.18 | P | 1 | 1.76E-13 | 0.57 ( 0.49- 0.66) |
| 32740696 | AA\_DQB1\_47\_32740696 | 1.0042 | 0.979 | F | 0.11 | 0.18 | Y | 1 | 1.76E-13 | 0.57 ( 0.49- 0.66) |
| 32740699 | AA\_DQB1\_46\_32740699 | 1.0042 | 0.979 | E | 0.11 | 0.18 | V | 1 | 1.76E-13 | 0.57 ( 0.49- 0.66) |
| 32740702 | AA\_DQB1\_45\_32740702 | 0.9526 | 0.94 | E | 0.19 | 0.19 | G | 1 | 9.08E-01 | 1.01 ( 0.89- 1.15) |
| 32740723 | AA\_DQB1\_38\_32740723 | 0.9714 | 0.95 | V | 0.34 | 0.38 | A | 1 | 2.51E-03 | 0.85 ( 0.76- 0.94) |
| 32740726 | AA\_DQB1\_37\_32740726\_D | 0.8846 | 0.844 | P | 0.11 | 0.08 | A | 1 | 3.42E-04 | 1.39 ( 1.16- 1.66) |
| 32740726 | AA\_DQB1\_37\_32740726\_I | 1.0035 | 0.978 | P | 0.11 | 0.18 | A | 1 | 1.76E-13 | 0.57 ( 0.49- 0.66) |
| 32740726 | AA\_DQB1\_37\_32740726\_Y | 0.9485 | 0.928 | P | 0.78 | 0.74 | A | 1 | 1.76E-04 | 1.26 ( 1.12- 1.42) |
| 32740747 | AA\_DQB1\_30\_32740747\_H | 0.9588 | 0.957 | P | 0.16 | 0.17 | A | 1 | 2.73E-01 | 0.93 ( 0.81- 1.06) |
| 32740747 | AA\_DQB1\_30\_32740747\_S | 1.0035 | 0.978 | P | 0.11 | 0.18 | A | 1 | 1.76E-13 | 0.57 ( 0.49- 0.66) |
| 32740747 | AA\_DQB1\_30\_32740747\_Y | 0.9618 | 0.961 | P | 0.73 | 0.65 | A | 1 | 5.60E-11 | 1.46 ( 1.30- 1.63) |
| 32740753 | AA\_DQB1\_28\_32740753 | 1.0035 | 0.978 | S | 0.11 | 0.18 | T | 1 | 1.76E-13 | 0.57 ( 0.49- 0.66) |
| 32740759 | AA\_DQB1\_26\_32740759\_G | 0.9579 | 0.961 | P | 0.20 | 0.18 | A | 1 | 1.54E-02 | 1.18 ( 1.03- 1.35) |
| 32740759 | AA\_DQB1\_26\_32740759\_L | 0.9778 | 0.967 | P | 0.50 | 0.55 | A | 1 | 6.60E-05 | 0.81 ( 0.73- 0.90) |
| 32740759 | AA\_DQB1\_26\_32740759\_Y | 0.9435 | 0.937 | P | 0.30 | 0.27 | A | 1 | 1.69E-02 | 1.15 ( 1.03- 1.29) |
| 32740768 | AA\_DQB1\_23\_32740768 | 0.966 | 0.977 | L | 0.06 | 0.04 | R | 1 | 4.55E-03 | 1.4 ( 1.11- 1.77) |
| 32740795 | AA\_DQB1\_14\_32740795 | 0.9603 | 0.941 | L | 0.13 | 0.12 | M | 1 | 6.85E-01 | 1.03 ( 0.88- 1.21) |
| 32740798 | AA\_DQB1\_13\_32740798 | 0.9434 | 0.937 | A | 0.30 | 0.27 | G | 1 | 1.69E-02 | 1.15 ( 1.03- 1.29) |
| 32740810 | AA\_DQB1\_9\_32740810\_F | 0.9603 | 0.992 | P | 0.21 | 0.18 | A | 1 | 1.79E-03 | 1.23 ( 1.08- 1.41) |
| 32740810 | AA\_DQB1\_9\_32740810\_L | 0.8846 | 0.844 | P | 0.11 | 0.08 | A | 1 | 3.42E-04 | 1.39 ( 1.16- 1.66) |
| 32740810 | AA\_DQB1\_9\_32740810\_Y | 0.9559 | 0.936 | P | 0.68 | 0.74 | A | 1 | 6.85E-07 | 0.75 ( 0.67- 0.84) |
| 32742259 | AA\_DQB1\_3\_32742259\_P | 0.8848 | 0.844 | P | 0.11 | 0.08 | A | 1 | 3.42E-04 | 1.39 ( 1.16- 1.66) |
| 32742259 | AA\_DQB1\_3\_32742259\_S | 0.8563 | 0.815 | P | 0.89 | 0.92 | A | 1 | 3.42E-04 | 0.72 ( 0.60- 0.86) |
| 32742268 | AA\_DQB1\_-1\_32742268 | 0.8855 | 0.891 | x | 0.02 | 0.03 | G | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742271 | AA\_DQB1\_-2\_32742271 | 0.8881 | 0.893 | x | 0.02 | 0.03 | E | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742274 | AA\_DQB1\_-3\_32742274 | 0.8881 | 0.893 | x | 0.02 | 0.03 | A | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742277 | AA\_DQB1\_-4\_32742277\_L | 0.9316 | 0.956 | P | 0.29 | 0.29 | A | 1 | 7.90E-01 | 1.02 ( 0.91- 1.14) |
| 32742277 | AA\_DQB1\_-4\_32742277\_V | 0.9473 | 0.974 | P | 0.69 | 0.68 | A | 1 | 4.94E-01 | 1.04 ( 0.93- 1.16) |
| 32742277 | AA\_DQB1\_-4\_32742277\_x | 0.8881 | 0.893 | P | 0.02 | 0.03 | A | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742280 | AA\_DQB1\_-5\_32742280\_L | 0.9395 | 0.975 | P | 0.16 | 0.16 | A | 1 | 9.66E-01 | 1 ( 0.87- 1.15) |
| 32742280 | AA\_DQB1\_-5\_32742280\_P | 0.9473 | 0.974 | P | 0.69 | 0.68 | A | 1 | 4.94E-01 | 1.04 ( 0.93- 1.16) |
| 32742280 | AA\_DQB1\_-5\_32742280\_S | 0.9685 | 0.949 | P | 0.13 | 0.12 | A | 1 | 6.85E-01 | 1.03 ( 0.88- 1.21) |
| 32742280 | AA\_DQB1\_-5\_32742280\_x | 0.8881 | 0.893 | P | 0.02 | 0.03 | A | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742283 | AA\_DQB1\_-6\_32742283\_A | 0.9665 | 0.978 | P | 0.06 | 0.04 | A | 1 | 4.55E-03 | 1.4 ( 1.11- 1.77) |
| 32742283 | AA\_DQB1\_-6\_32742283\_S | 0.9316 | 0.956 | P | 0.29 | 0.29 | A | 1 | 7.90E-01 | 1.02 ( 0.91- 1.14) |
| 32742283 | AA\_DQB1\_-6\_32742283\_T | 0.9447 | 0.971 | P | 0.63 | 0.64 | A | 1 | 5.04E-01 | 0.96 ( 0.87- 1.07) |
| 32742283 | AA\_DQB1\_-6\_32742283\_x | 0.8882 | 0.893 | P | 0.02 | 0.03 | A | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742286 | AA\_DQB1\_-7\_32742286 | 0.8882 | 0.893 | x | 0.02 | 0.03 | S | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742289 | AA\_DQB1\_-8\_32742289 | 0.8882 | 0.893 | x | 0.02 | 0.03 | L | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742292 | AA\_DQB1\_-9\_32742292\_I | 0.9686 | 0.949 | P | 0.13 | 0.12 | A | 1 | 6.85E-01 | 1.03 ( 0.88- 1.21) |
| 32742292 | AA\_DQB1\_-9\_32742292\_M | 0.9398 | 0.936 | P | 0.85 | 0.84 | A | 1 | 4.07E-01 | 1.06 ( 0.92- 1.23) |
| 32742292 | AA\_DQB1\_-9\_32742292\_x | 0.8882 | 0.893 | P | 0.02 | 0.03 | A | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742295 | AA\_DQB1\_-10\_32742295\_A | 0.9758 | 0.96 | P | 0.87 | 0.79 | A | 1 | 1.18E-15 | 1.78 ( 1.54- 2.05) |
| 32742295 | AA\_DQB1\_-10\_32742295\_S | 1.0037 | 0.979 | P | 0.11 | 0.18 | A | 1 | 1.76E-13 | 0.57 ( 0.49- 0.66) |
| 32742295 | AA\_DQB1\_-10\_32742295\_x | 0.8882 | 0.893 | P | 0.02 | 0.03 | A | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742298 | AA\_DQB1\_-11\_32742298 | 0.8882 | 0.893 | x | 0.02 | 0.03 | L | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742301 | AA\_DQB1\_-12\_32742301 | 0.8882 | 0.893 | x | 0.02 | 0.03 | M | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742304 | AA\_DQB1\_-13\_32742304 | 0.8882 | 0.893 | x | 0.02 | 0.03 | L | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742307 | AA\_DQB1\_-14\_32742307 | 0.8882 | 0.893 | x | 0.02 | 0.03 | T | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742310 | AA\_DQB1\_-15\_32742310 | 0.8882 | 0.893 | x | 0.02 | 0.03 | V | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742313 | AA\_DQB1\_-16\_32742313 | 0.8882 | 0.893 | x | 0.02 | 0.03 | T | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742316 | AA\_DQB1\_-17\_32742316\_A | 0.8836 | 0.851 | P | 0.87 | 0.89 | A | 1 | 6.05E-02 | 0.86 ( 0.73- 1.01) |
| 32742316 | AA\_DQB1\_-17\_32742316\_P | 0.8848 | 0.844 | P | 0.11 | 0.08 | A | 1 | 3.42E-04 | 1.39 ( 1.16- 1.66) |
| 32742316 | AA\_DQB1\_-17\_32742316\_x | 0.8882 | 0.893 | P | 0.02 | 0.03 | A | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742319 | AA\_DQB1\_-18\_32742319\_A | 0.9576 | 0.955 | P | 0.41 | 0.45 | A | 1 | 1.53E-03 | 0.85 ( 0.76- 0.94) |
| 32742319 | AA\_DQB1\_-18\_32742319\_V | 0.9577 | 0.943 | P | 0.57 | 0.52 | A | 1 | 6.55E-05 | 1.23 ( 1.11- 1.37) |
| 32742319 | AA\_DQB1\_-18\_32742319\_x | 0.8882 | 0.893 | P | 0.02 | 0.03 | A | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742322 | AA\_DQB1\_-19\_32742322 | 0.8882 | 0.893 | x | 0.02 | 0.03 | R | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742325 | AA\_DQB1\_-20\_32742325 | 0.8882 | 0.893 | x | 0.02 | 0.03 | L | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742328 | AA\_DQB1\_-21\_32742328\_D | 0.9316 | 0.956 | P | 0.29 | 0.29 | A | 1 | 7.90E-01 | 1.02 ( 0.91- 1.14) |
| 32742328 | AA\_DQB1\_-21\_32742328\_G | 0.9473 | 0.974 | P | 0.69 | 0.68 | A | 1 | 4.94E-01 | 1.04 ( 0.93- 1.16) |
| 32742328 | AA\_DQB1\_-21\_32742328\_x | 0.8882 | 0.893 | P | 0.02 | 0.03 | A | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742331 | AA\_DQB1\_-22\_32742331 | 0.8882 | 0.893 | x | 0.02 | 0.03 | G | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742334 | AA\_DQB1\_-23\_32742334 | 0.8882 | 0.893 | x | 0.02 | 0.03 | P | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742337 | AA\_DQB1\_-24\_32742337 | 0.8882 | 0.893 | x | 0.02 | 0.03 | I | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742340 | AA\_DQB1\_-25\_32742340 | 0.8882 | 0.893 | x | 0.02 | 0.03 | R | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742343 | AA\_DQB1\_-26\_32742343 | 0.8882 | 0.893 | x | 0.02 | 0.03 | L | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742346 | AA\_DQB1\_-27\_32742346\_A | 0.9398 | 0.936 | P | 0.85 | 0.84 | A | 1 | 4.07E-01 | 1.06 ( 0.92- 1.23) |
| 32742346 | AA\_DQB1\_-27\_32742346\_S | 0.9686 | 0.949 | P | 0.13 | 0.12 | A | 1 | 6.85E-01 | 1.03 ( 0.88- 1.21) |
| 32742346 | AA\_DQB1\_-27\_32742346\_x | 0.8883 | 0.894 | P | 0.02 | 0.03 | A | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742349 | AA\_DQB1\_-28\_32742349 | 0.8883 | 0.894 | x | 0.02 | 0.03 | K | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742352 | AA\_DQB1\_-29\_32742352 | 0.8883 | 0.894 | x | 0.02 | 0.03 | K | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742355 | AA\_DQB1\_-30\_32742355 | 0.8883 | 0.894 | x | 0.02 | 0.03 | W | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742358 | AA\_DQB1\_-31\_32742358 | 0.8883 | 0.894 | x | 0.02 | 0.03 | S | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 32742361 | AA\_DQB1\_-32\_32742361 | 0.8921 | 0.898 | x | 0.02 | 0.03 | M | 1 | 8.84E-03 | 0.65 ( 0.47- 0.90) |
| 33144412 | AA\_DPA1\_228\_33144412 | 0.9717 | 1 | T | 0.31 | 0.39 | P | 1 | 2.74E-10 | 0.7 ( 0.63- 0.78) |
| 33144526 | AA\_DPA1\_190\_33144526 | 0.9278 | 0.897 | A | 0.01 | 0.02 | T | 1 | 7.79E-02 | 0.66 ( 0.42- 1.05) |
| 33144830 | AA\_DPA1\_160\_33144830 | 0.9714 | 0.999 | F | 0.31 | 0.39 | V | 1 | 2.74E-10 | 0.7 ( 0.63- 0.78) |
| 33144929 | AA\_DPA1\_127\_33144929 | 0.9713 | 1 | L | 0.31 | 0.39 | P | 1 | 3.29E-10 | 0.7 ( 0.63- 0.78) |
| 33144977 | AA\_DPA1\_111\_33144977 | 0.9589 | 0.994 | K | 0.32 | 0.41 | R | 1 | 2.69E-11 | 0.69 ( 0.62- 0.77) |
| 33145022 | AA\_DPA1\_96\_33145022 | 0.9303 | 0.906 | A | 0.01 | 0.02 | P | 1 | 9.98E-02 | 0.68 ( 0.44- 1.08) |
| 33145064 | HLA\_DPA1\_01 | 0.971 | 0.999 | P | 0.313 | 0.390 | A | 1 | 3.29E-10 | 0.7 ( 0.63- 0.78) |
| 33145064 | HLA\_DPA1\_0103 | 0.9712 | 1 | P | 0.313 | 0.390 | A | 1 | 3.89E-10 | 0.7 ( 0.63- 0.79) |
| 33145064 | HLA\_DPA1\_02 | 0.9586 | 0.994 | P | 0.676 | 0.595 | A | 1 | 3.21E-11 | 1.45 ( 1.30- 1.62) |
| 33145064 | HLA\_DPA1\_0201 | 0.9013 | 0.9 | P | 0.081 | 0.147 | A | 1 | 2.88E-15 | 0.5 ( 0.42- 0.60) |
| 33145064 | HLA\_DPA1\_0202 | 0.9175 | 0.954 | P | 0.595 | 0.448 | A | 1 | 1.76E-31 | 1.91 ( 1.71- 2.13) |
| 33145064 | HLA\_DPA1\_04 | 0.9154 | 0.892 | P | 0.011 | 0.016 | A | 1 | 9.98E-02 | 0.68 ( 0.44- 1.08) |
| 33145064 | HLA\_DPA1\_0401 | 0.9328 | 0.907 | P | 0.011 | 0.016 | A | 1 | 9.98E-02 | 0.68 ( 0.44- 1.08) |
| 33145401 | AA\_DPA1\_83\_33145401 | 0.9712 | 0.999 | T | 0.31 | 0.39 | A | 1 | 3.89E-10 | 0.7 ( 0.63- 0.79) |
| 33145431 | AA\_DPA1\_73\_33145431 | 0.9275 | 0.903 | A | 0.01 | 0.02 | L | 1 | 9.98E-02 | 0.68 ( 0.44- 1.08) |
| 33145434 | AA\_DPA1\_72\_33145434 | 0.9321 | 0.906 | I | 0.01 | 0.02 | T | 1 | 9.98E-02 | 0.68 ( 0.44- 1.08) |
| 33145500 | AA\_DPA1\_50\_33145500 | 0.9708 | 0.999 | Q | 0.31 | 0.39 | R | 1 | 3.89E-10 | 0.7 ( 0.63- 0.79) |
| 33145557 | AA\_DPA1\_31\_33145557 | 0.9578 | 0.993 | M | 0.32 | 0.41 | Q | 1 | 3.21E-11 | 0.69 ( 0.62- 0.77) |
| 33145566 | AA\_DPA1\_28\_33145566 | 0.9338 | 0.906 | D | 0.01 | 0.02 | E | 1 | 9.98E-02 | 0.68 ( 0.44- 1.08) |
| 33145596 | AA\_DPA1\_18\_33145596 | 0.9302 | 0.904 | T | 0.01 | 0.02 | P | 1 | 9.98E-02 | 0.68 ( 0.44- 1.08) |
| 33145617 | AA\_DPA1\_11\_33145617 | 0.9198 | 0.957 | M | 0.60 | 0.45 | A | 1 | 1.76E-31 | 1.91 ( 1.71- 2.13) |
| 33145623 | AA\_DPA1\_9\_33145623 | 0.958 | 0.933 | x | 0.01 | 0.02 | Y | 1 | 7.72E-02 | 0.66 ( 0.42- 1.05) |
| 33145626 | AA\_DPA1\_8\_33145626 | 0.9443 | 0.923 | x | 0.01 | 0.02 | T | 1 | 7.72E-02 | 0.66 ( 0.42- 1.05) |
| 33145629 | AA\_DPA1\_7\_33145629 | 0.9269 | 0.959 | x | 0.61 | 0.46 | S | 1 | 2.14E-28 | 1.86 ( 1.66- 2.07) |
| 33145632 | AA\_DPA1\_6\_33145632 | 0.9271 | 0.959 | x | 0.61 | 0.46 | V | 1 | 2.14E-28 | 1.86 ( 1.66- 2.07) |
| 33145635 | AA\_DPA1\_5\_33145635 | 0.9272 | 0.959 | x | 0.61 | 0.46 | H | 1 | 2.14E-28 | 1.86 ( 1.66- 2.07) |
| 33145638 | AA\_DPA1\_4\_33145638 | 0.9271 | 0.959 | x | 0.61 | 0.46 | D | 1 | 2.14E-28 | 1.86 ( 1.66- 2.07) |
| 33145641 | AA\_DPA1\_3\_33145641 | 0.9273 | 0.959 | x | 0.61 | 0.46 | A | 1 | 2.14E-28 | 1.86 ( 1.66- 2.07) |
| 33149228 | AA\_DPA1\_2\_33149228 | 0.929 | 0.96 | x | 0.60 | 0.46 | K | 1 | 1.88E-28 | 1.85 ( 1.66- 2.07) |
| 33149231 | AA\_DPA1\_1\_33149231 | 0.9299 | 0.961 | x | 0.60 | 0.46 | I | 1 | 1.88E-28 | 1.85 ( 1.66- 2.07) |
| 33149234 | AA\_DPA1\_-1\_33149234 | 0.9708 | 0.999 | A | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149237 | AA\_DPA1\_-2\_33149237 | 0.9708 | 0.999 | G | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149240 | AA\_DPA1\_-3\_33149240 | 0.9708 | 0.999 | A | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149243 | AA\_DPA1\_-4\_33149243 | 0.9708 | 0.999 | G | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149246 | AA\_DPA1\_-5\_33149246 | 0.9708 | 0.999 | R | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149249 | AA\_DPA1\_-6\_33149249 | 0.9708 | 0.999 | L | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149252 | AA\_DPA1\_-7\_33149252 | 0.9707 | 0.999 | S | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149255 | AA\_DPA1\_-8\_33149255 | 0.9708 | 0.999 | L | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149258 | AA\_DPA1\_-9\_33149258 | 0.9708 | 0.999 | L | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149261 | AA\_DPA1\_-10\_33149261 | 0.9707 | 0.999 | F | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149264 | AA\_DPA1\_-11\_33149264 | 0.9707 | 0.999 | A | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149267 | AA\_DPA1\_-12\_33149267 | 0.9707 | 0.999 | L | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149270 | AA\_DPA1\_-13\_33149270 | 0.9707 | 0.999 | S | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149273 | AA\_DPA1\_-14\_33149273 | 0.9707 | 0.999 | L | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149276 | AA\_DPA1\_-15\_33149276 | 0.9707 | 0.999 | A | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149279 | AA\_DPA1\_-16\_33149279 | 0.9707 | 0.999 | R | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149282 | AA\_DPA1\_-17\_33149282 | 0.9707 | 0.999 | L | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149285 | AA\_DPA1\_-18\_33149285 | 0.9707 | 0.999 | I | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149288 | AA\_DPA1\_-19\_33149288 | 0.9707 | 0.999 | V | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149291 | AA\_DPA1\_-20\_33149291 | 0.9706 | 0.999 | A | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149294 | AA\_DPA1\_-21\_33149294 | 0.9707 | 0.999 | R | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149297 | AA\_DPA1\_-22\_33149297 | 0.9707 | 0.999 | I | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149300 | AA\_DPA1\_-23\_33149300 | 0.9707 | 0.999 | H | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149303 | AA\_DPA1\_-24\_33149303 | 0.9707 | 0.999 | F | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149306 | AA\_DPA1\_-25\_33149306 | 0.9707 | 0.999 | M | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149309 | AA\_DPA1\_-26\_33149309 | 0.9707 | 0.999 | R | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149312 | AA\_DPA1\_-27\_33149312 | 0.9707 | 0.999 | D | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149315 | AA\_DPA1\_-28\_33149315 | 0.9707 | 0.999 | E | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149318 | AA\_DPA1\_-29\_33149318 | 0.9707 | 0.999 | P | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149321 | AA\_DPA1\_-30\_33149321 | 0.9707 | 0.999 | R | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33149324 | AA\_DPA1\_-31\_33149324 | 0.9707 | 0.999 | M | 0.31 | 0.39 | x | 1 | 4.01E-10 | 0.7 ( 0.63- 0.79) |
| 33151798 | AA\_DPB1\_-29\_33151798 | 0.9195 | 0.889 | x | 0.04 | 0.09 | M | 1 | 9.93E-15 | 0.41 ( 0.33- 0.51) |
| 33151801 | AA\_DPB1\_-28\_33151801 | 0.9173 | 0.887 | x | 0.04 | 0.09 | M | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151804 | AA\_DPB1\_-27\_33151804 | 0.9174 | 0.887 | x | 0.04 | 0.09 | V | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151807 | AA\_DPB1\_-26\_33151807 | 0.9172 | 0.887 | x | 0.04 | 0.09 | L | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151810 | AA\_DPB1\_-25\_33151810 | 0.9174 | 0.887 | x | 0.04 | 0.09 | Q | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151813 | AA\_DPB1\_-24\_33151813 | 0.9174 | 0.887 | x | 0.04 | 0.09 | V | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151816 | AA\_DPB1\_-23\_33151816 | 0.9171 | 0.887 | x | 0.04 | 0.09 | S | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151819 | AA\_DPB1\_-22\_33151819 | 0.9174 | 0.887 | x | 0.04 | 0.09 | A | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151822 | AA\_DPB1\_-21\_33151822 | 0.9174 | 0.887 | x | 0.04 | 0.09 | A | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151825 | AA\_DPB1\_-20\_33151825 | 0.9174 | 0.887 | x | 0.04 | 0.09 | P | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151828 | AA\_DPB1\_-19\_33151828 | 0.9173 | 0.887 | x | 0.04 | 0.09 | R | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151831 | AA\_DPB1\_-18\_33151831 | 0.9173 | 0.887 | x | 0.04 | 0.09 | T | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151834 | AA\_DPB1\_-17\_33151834 | 0.9172 | 0.887 | x | 0.04 | 0.09 | V | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151837 | AA\_DPB1\_-16\_33151837 | 0.9174 | 0.887 | x | 0.04 | 0.09 | A | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151840 | AA\_DPB1\_-15\_33151840 | 0.9174 | 0.887 | x | 0.04 | 0.09 | L | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151843 | AA\_DPB1\_-14\_33151843 | 0.9173 | 0.887 | x | 0.04 | 0.09 | T | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151846 | AA\_DPB1\_-13\_33151846 | 0.9172 | 0.887 | x | 0.04 | 0.09 | A | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151849 | AA\_DPB1\_-12\_33151849 | 0.9174 | 0.887 | x | 0.04 | 0.09 | L | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151852 | AA\_DPB1\_-11\_33151852 | 0.9174 | 0.887 | x | 0.04 | 0.09 | L | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151855 | AA\_DPB1\_-10\_33151855 | 0.9173 | 0.887 | x | 0.04 | 0.09 | M | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151858 | AA\_DPB1\_-9\_33151858 | 0.9173 | 0.887 | x | 0.04 | 0.09 | V | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151861 | AA\_DPB1\_-8\_33151861 | 0.9174 | 0.887 | x | 0.04 | 0.09 | L | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151864 | AA\_DPB1\_-7\_33151864 | 0.9174 | 0.887 | x | 0.04 | 0.09 | L | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151867 | AA\_DPB1\_-6\_33151867 | 0.9172 | 0.887 | x | 0.04 | 0.09 | T | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151870 | AA\_DPB1\_-5\_33151870 | 0.9173 | 0.887 | x | 0.04 | 0.09 | S | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151873 | AA\_DPB1\_-4\_33151873 | 0.9174 | 0.887 | x | 0.04 | 0.09 | V | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151876 | AA\_DPB1\_-3\_33151876 | 0.9173 | 0.887 | x | 0.04 | 0.09 | V | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151879 | AA\_DPB1\_-2\_33151879 | 0.9173 | 0.887 | x | 0.04 | 0.09 | Q | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151882 | AA\_DPB1\_-1\_33151882 | 0.9174 | 0.887 | x | 0.04 | 0.09 | G | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151885 | AA\_DPB1\_1\_33151885 | 0.9173 | 0.887 | x | 0.04 | 0.09 | R | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151888 | AA\_DPB1\_2\_33151888 | 0.9174 | 0.887 | x | 0.04 | 0.09 | A | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151891 | AA\_DPB1\_3\_33151891 | 0.9175 | 0.887 | x | 0.04 | 0.09 | T | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33151894 | AA\_DPB1\_4\_33151894 | 0.9219 | 0.892 | x | 0.04 | 0.09 | P | 1 | 6.54E-15 | 0.41 ( 0.32- 0.51) |
| 33156427 | AA\_DPB1\_5\_33156427 | 0.9272 | 0.898 | x | 0.04 | 0.09 | E | 1 | 1.76E-14 | 0.41 ( 0.33- 0.52) |
| 33156436 | AA\_DPB1\_8\_33156436 | 0.9253 | 0.889 | V | 0.13 | 0.23 | L | 1 | 1.37E-21 | 0.51 ( 0.44- 0.58) |
| 33156439 | AA\_DPB1\_9\_33156439\_F | 0.9261 | 0.891 | P | 0.87 | 0.77 | A | 1 | 1.81E-21 | 1.96 ( 1.71- 2.26) |
| 33156439 | AA\_DPB1\_9\_33156439\_H | 0.9658 | 0.961 | P | 0.06 | 0.12 | A | 1 | 2.89E-14 | 0.48 ( 0.40- 0.58) |
| 33156439 | AA\_DPB1\_9\_33156439\_Y | 0.8669 | 0.821 | P | 0.07 | 0.11 | A | 1 | 1.26E-07 | 0.61 ( 0.51- 0.73) |
| 33156445 | AA\_DPB1\_11\_33156445 | 0.9281 | 0.893 | L | 0.13 | 0.23 | G | 1 | 2.94E-21 | 0.51 ( 0.44- 0.59) |
| 33156517 | AA\_DPB1\_35\_33156517\_F | 0.943 | 0.967 | P | 0.46 | 0.58 | A | 1 | 1.28E-22 | 0.58 ( 0.52- 0.64) |
| 33156517 | AA\_DPB1\_35\_33156517\_L | 0.9272 | 0.962 | P | 0.51 | 0.37 | A | 1 | 8.73E-29 | 1.92 ( 1.72- 2.15) |
| 33156517 | AA\_DPB1\_35\_33156517\_Y | 0.9406 | 0.917 | P | 0.03 | 0.05 | A | 1 | 2.98E-04 | 0.61 ( 0.47- 0.80) |
| 33156520 | AA\_DPB1\_36\_33156520 | 0.9538 | 0.938 | A | 0.14 | 0.16 | V | 1 | 1.67E-02 | 0.84 ( 0.72- 0.97) |
| 33156577 | AA\_DPB1\_55\_33156577\_A | 0.9548 | 0.938 | P | 0.13 | 0.16 | A | 1 | 1.49E-02 | 0.83 ( 0.72- 0.97) |
| 33156577 | AA\_DPB1\_55\_33156577\_D | 0.9612 | 0.971 | P | 0.35 | 0.47 | A | 1 | 1.70E-21 | 0.59 ( 0.53- 0.65) |
| 33156577 | AA\_DPB1\_55\_33156577\_E | 0.9338 | 0.951 | P | 0.52 | 0.38 | A | 1 | 1.09E-28 | 1.92 ( 1.71- 2.15) |
| 33156580 | AA\_DPB1\_56\_33156580 | 0.8811 | 0.891 | E | 0.35 | 0.47 | A | 1 | 1.70E-21 | 0.59 ( 0.53- 0.65) |
| 33156583 | AA\_DPB1\_57\_33156583 | 0.9391 | 0.91 | D | 0.10 | 0.17 | E | 1 | 4.94E-16 | 0.52 ( 0.44- 0.61) |
| 33156607 | AA\_DPB1\_65\_33156607\_I | 0.8182 | 0.745 | P | 0.95 | 0.93 | A | 1 | 9.68E-03 | 1.33 ( 1.07- 1.66) |
| 33156607 | AA\_DPB1\_65\_33156607\_L | 0.8261 | 0.753 | P | 0.05 | 0.07 | A | 1 | 6.91E-03 | 0.74 ( 0.60- 0.92) |
| 33156619 | AA\_DPB1\_69\_33156619\_E | 0.8342 | 0.857 | P | 0.36 | 0.45 | A | 1 | 6.87E-14 | 0.66 ( 0.59- 0.73) |
| 33156619 | AA\_DPB1\_69\_33156619\_K | 0.8333 | 0.856 | P | 0.64 | 0.55 | A | 1 | 6.87E-14 | 1.52 ( 1.36- 1.70) |
| 33156640 | AA\_DPB1\_76\_33156640\_I | 0.8404 | 0.818 | P | 0.04 | 0.06 | A | 1 | 4.69E-03 | 0.7 ( 0.55- 0.90) |
| 33156640 | AA\_DPB1\_76\_33156640\_M | 0.8844 | 0.846 | P | 0.89 | 0.85 | A | 1 | 6.19E-08 | 1.53 ( 1.31- 1.79) |
| 33156640 | AA\_DPB1\_76\_33156640\_V | 0.8766 | 0.842 | P | 0.07 | 0.10 | A | 1 | 6.61E-06 | 0.64 ( 0.53- 0.78) |
| 33156664 | AA\_DPB1\_84\_33156664\_D | 0.8828 | 0.936 | P | 0.58 | 0.55 | A | 1 | 1.91E-02 | 1.14 ( 1.02- 1.27) |
| 33156664 | AA\_DPB1\_84\_33156664\_G | 0.8888 | 0.941 | P | 0.42 | 0.45 | A | 1 | 1.80E-02 | 0.88 ( 0.79- 0.98) |
| 33156667 | AA\_DPB1\_85\_33156667 | 0.8857 | 0.94 | G | 0.42 | 0.45 | E | 1 | 1.91E-02 | 0.88 ( 0.79- 0.98) |
| 33156670 | AA\_DPB1\_86\_33156670 | 0.8859 | 0.941 | P | 0.42 | 0.45 | A | 1 | 1.91E-02 | 0.88 ( 0.79- 0.98) |
| 33156673 | AA\_DPB1\_87\_33156673 | 0.886 | 0.941 | M | 0.42 | 0.45 | V | 1 | 1.91E-02 | 0.88 ( 0.79- 0.98) |
| 33157346 | HLA\_DPB1\_02 | 0.8787 | 0.91 | P | 0.27 | 0.28 | A | 1 | 1.85E-01 | 0.92 ( 0.82- 1.04) |
| 33157346 | HLA\_DPB1\_0201 | 0.9122 | 0.924 | P | 0.20 | 0.24 | A | 1 | 4.38E-04 | 0.8 ( 0.70- 0.90) |
| 33157346 | HLA\_DPB1\_0202 | 0.879 | 0.831 | P | 0.07 | 0.04 | A | 1 | 1.57E-04 | 1.56 ( 1.24- 1.97) |
| 33157346 | HLA\_DPB1\_03 | 0.8558 | 0.795 | P | 0.03 | 0.05 | A | 1 | 3.80E-03 | 0.68 ( 0.53- 0.88) |
| 33157346 | HLA\_DPB1\_0301 | 0.8558 | 0.795 | P | 0.03 | 0.05 | A | 1 | 3.80E-03 | 0.68 ( 0.53- 0.88) |
| 33157346 | HLA\_DPB1\_04 | 0.9099 | 0.898 | P | 0.15 | 0.16 | A | 1 | 1.31E-01 | 0.9 ( 0.78- 1.03) |
| 33157346 | HLA\_DPB1\_0401 | 0.8716 | 0.861 | P | 0.10 | 0.11 | A | 1 | 6.79E-01 | 0.97 ( 0.82- 1.14) |
| 33157346 | HLA\_DPB1\_0402 | 0.9728 | 0.97 | P | 0.05 | 0.06 | A | 1 | 6.07E-02 | 0.8 ( 0.64- 1.01) |
| 33157346 | HLA\_DPB1\_05 | 0.9181 | 0.9436 | P | 0.44 | 0.31 | A | 1 | 3.27E-26 | 1.9 ( 1.69- 2.14) |
| 33157346 | HLA\_DPB1\_0501 | 0.9211 | 0.9508 | P | 0.44 | 0.31 | A | 1 | 1.73E-26 | 1.91 ( 1.69- 2.15) |
| 33157346 | HLA\_DPB1\_09 | 0.8047 | 0.755 | P | 0.01 | 0.03 | A | 1 | 1.47E-03 | 0.54 ( 0.37- 0.79) |
| 33157346 | HLA\_DPB1\_0901 | 0.8057 | 0.756 | P | 0.01 | 0.03 | A | 1 | 1.47E-03 | 0.54 ( 0.37- 0.79) |
| 33157346 | HLA\_DPB1\_13 | 0.8852 | 0.858 | P | 0.03 | 0.05 | A | 1 | 1.99E-03 | 0.65 ( 0.50- 0.85) |
| 33157346 | HLA\_DPB1\_1301 | 0.8856 | 0.858 | P | 0.03 | 0.05 | A | 1 | 1.99E-03 | 0.65 ( 0.50- 0.85) |
| 33157346 | HLA\_DPB1\_17 | 1.0203 | 0.993 | P | 0.03 | 0.08 | A | 1 | 5.75E-13 | 0.4 ( 0.31- 0.52) |
| 33157346 | HLA\_DPB1\_1701 | 1.0213 | 0.993 | P | 0.03 | 0.08 | A | 1 | 5.75E-13 | 0.4 ( 0.31- 0.52) |
| 33160714 | AA\_DPB1\_96\_33160714\_K | 0.8726 | 0.942 | P | 0.55 | 0.46 | A | 1 | 7.48E-11 | 1.44 ( 1.29- 1.60) |
| 33160714 | AA\_DPB1\_96\_33160714\_R | 0.8844 | 0.957 | P | 0.45 | 0.52 | A | 1 | 4.00E-09 | 0.72 ( 0.65- 0.80) |
| 33160936 | AA\_DPB1\_170\_33160936\_I | 0.8728 | 0.942 | P | 0.55 | 0.46 | A | 1 | 7.48E-11 | 1.44 ( 1.29- 1.60) |
| 33160936 | AA\_DPB1\_170\_33160936\_T | 0.8844 | 0.957 | P | 0.45 | 0.52 | A | 1 | 4.00E-09 | 0.72 ( 0.65- 0.80) |
| 33160960 | AA\_DPB1\_178\_33160960\_L | 0.9118 | 0.902 | P | 0.95 | 0.93 | A | 1 | 2.86E-03 | 1.39 ( 1.12- 1.72) |
| 33160960 | AA\_DPB1\_178\_33160960\_M | 0.9702 | 0.968 | P | 0.05 | 0.06 | A | 1 | 6.07E-02 | 0.8 ( 0.64- 1.01) |
| 33161534 | AA\_DPB1\_187\_33161534 | 0.9112 | 0.883 | x | 0.04 | 0.09 | K | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161537 | AA\_DPB1\_188\_33161537 | 0.9116 | 0.883 | x | 0.04 | 0.09 | A | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161540 | AA\_DPB1\_189\_33161540 | 0.9106 | 0.882 | x | 0.04 | 0.09 | Q | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161543 | AA\_DPB1\_190\_33161543 | 0.9118 | 0.883 | x | 0.04 | 0.09 | S | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161546 | AA\_DPB1\_191\_33161546 | 0.9118 | 0.883 | x | 0.04 | 0.09 | D | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161549 | AA\_DPB1\_192\_33161549 | 0.9116 | 0.883 | x | 0.04 | 0.09 | S | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161552 | AA\_DPB1\_193\_33161552 | 0.9117 | 0.883 | x | 0.04 | 0.09 | A | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161555 | AA\_DPB1\_194\_33161555\_R | 0.9023 | 0.871 | P | 0.96 | 0.91 | A | 1 | 4.59E-15 | 2.44 ( 1.95- 3.04) |
| 33161555 | AA\_DPB1\_194\_33161555\_x | 0.9118 | 0.883 | P | 0.04 | 0.09 | A | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161558 | AA\_DPB1\_195\_33161558 | 0.9118 | 0.882 | x | 0.04 | 0.09 | S | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161561 | AA\_DPB1\_196\_33161561 | 0.9122 | 0.882 | x | 0.04 | 0.09 | K | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161564 | AA\_DPB1\_197\_33161564 | 0.9122 | 0.882 | x | 0.04 | 0.09 | T | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161567 | AA\_DPB1\_198\_33161567 | 0.912 | 0.882 | x | 0.04 | 0.09 | L | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161570 | AA\_DPB1\_199\_33161570 | 0.9123 | 0.883 | x | 0.04 | 0.09 | T | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161573 | AA\_DPB1\_200\_33161573 | 0.9125 | 0.883 | x | 0.04 | 0.09 | G | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161576 | AA\_DPB1\_201\_33161576 | 0.9123 | 0.883 | x | 0.04 | 0.09 | A | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161579 | AA\_DPB1\_202\_33161579 | 0.9125 | 0.883 | x | 0.04 | 0.09 | G | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161582 | AA\_DPB1\_203\_33161582 | 0.9116 | 0.882 | x | 0.04 | 0.09 | G | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161585 | AA\_DPB1\_204\_33161585 | 0.9119 | 0.882 | x | 0.04 | 0.09 | F | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161588 | AA\_DPB1\_205\_33161588\_M | 0.9179 | 0.927 | P | 0.45 | 0.32 | A | 1 | 5.81E-26 | 1.89 ( 1.68- 2.12) |
| 33161588 | AA\_DPB1\_205\_33161588\_V | 0.9453 | 0.926 | P | 0.51 | 0.58 | A | 1 | 1.99E-09 | 0.71 ( 0.64- 0.80) |
| 33161588 | AA\_DPB1\_205\_33161588\_x | 0.9125 | 0.908 | P | 0.04 | 0.09 | A | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161591 | AA\_DPB1\_206\_33161591 | 0.9119 | 0.882 | x | 0.04 | 0.09 | L | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161594 | AA\_DPB1\_207\_33161594 | 0.9115 | 0.882 | x | 0.04 | 0.09 | G | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161597 | AA\_DPB1\_208\_33161597 | 0.9125 | 0.883 | x | 0.04 | 0.09 | L | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161600 | AA\_DPB1\_209\_33161600 | 0.9123 | 0.883 | x | 0.04 | 0.09 | I | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161603 | AA\_DPB1\_210\_33161603 | 0.9124 | 0.883 | x | 0.04 | 0.09 | I | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161606 | AA\_DPB1\_211\_33161606 | 0.9125 | 0.883 | x | 0.04 | 0.09 | C | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161609 | AA\_DPB1\_212\_33161609 | 0.9124 | 0.883 | x | 0.04 | 0.09 | G | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161612 | AA\_DPB1\_213\_33161612 | 0.9117 | 0.882 | x | 0.04 | 0.09 | V | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161615 | AA\_DPB1\_214\_33161615 | 0.9125 | 0.883 | x | 0.04 | 0.09 | G | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161618 | AA\_DPB1\_215\_33161618\_I | 0.9259 | 0.865 | P | 0.96 | 0.91 | A | 1 | 1.26E-15 | 2.49 ( 1.99- 3.11) |
| 33161618 | AA\_DPB1\_215\_33161618\_x | 0.9119 | 0.882 | P | 0.04 | 0.09 | A | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161621 | AA\_DPB1\_216\_33161621 | 0.9116 | 0.882 | x | 0.04 | 0.09 | F | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161624 | AA\_DPB1\_217\_33161624 | 0.9122 | 0.883 | x | 0.04 | 0.09 | M | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161627 | AA\_DPB1\_218\_33161627 | 0.9118 | 0.882 | x | 0.04 | 0.09 | H | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161630 | AA\_DPB1\_219\_33161630 | 0.9122 | 0.882 | x | 0.04 | 0.09 | R | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161633 | AA\_DPB1\_220\_33161633 | 0.9118 | 0.882 | x | 0.04 | 0.09 | R | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161636 | AA\_DPB1\_221\_33161636 | 0.9125 | 0.883 | x | 0.04 | 0.09 | S | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161639 | AA\_DPB1\_222\_33161639 | 0.9125 | 0.883 | x | 0.04 | 0.09 | K | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161642 | AA\_DPB1\_223\_33161642 | 0.9125 | 0.883 | x | 0.04 | 0.09 | K | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161974 | AA\_DPB1\_224\_33161974 | 0.9123 | 0.883 | x | 0.04 | 0.09 | V | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161977 | AA\_DPB1\_225\_33161977 | 0.9123 | 0.883 | x | 0.04 | 0.09 | Q | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161980 | AA\_DPB1\_226\_33161980 | 0.912 | 0.882 | x | 0.04 | 0.09 | R | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161983 | AA\_DPB1\_227\_33161983 | 0.9123 | 0.883 | x | 0.04 | 0.09 | G | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161986 | AA\_DPB1\_228\_33161986 | 0.9108 | 0.881 | x | 0.04 | 0.09 | S | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |
| 33161989 | AA\_DPB1\_229\_33161989 | 0.9155 | 0.886 | x | 0.04 | 0.09 | A | 1 | 5.17E-15 | 0.4 ( 0.32- 0.51) |

\* Nominal *P* values for amino acid position were calculated using Omnibus test.

Nominal *P* values for amino acid residues and 2-digit and 4-digit classical HLA were calculated using binary test.

Supplementary Table S3. Haplotype analysis of four amino acid positions associated with Graves' disease.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Frequency | |  |  |
| Molecule | Amino acid residues and Haplotype | 1,468 GD patients | 1,490 controls | *P*-value | OR (95% CI) |
| HLA-DRβ1 | Asp28 | 0.64 | 0.59 | 8.39E-06 | 1.26 ( 1.14- 1.40) |
|  | Glu28 | 0.19 | 0.29 | 4.26E-20 | 0.57 ( 0.50- 0.64) |
|  | His28 | 0.15 | 0.11 | 1.23E-05 | 1.4 ( 1.20- 1.62) |
| HLA-DPβ1 | Met205 | 0.45 | 0.32 | 5.81E-26 | 1.88 ( 1.67- 2.12) |
|  | Val205 | 0.51 | 0.58 | 1.99E-09 | 0.72 ( 0.64- 0.80) |
|  | Deletion205 | 0.04 | 0.09 | 5.17E-15 | 0.4 ( 0.32- 0.50) |
| HLA-DRβ1-DPβ1 | DRβ1 Asp28 - DPβ1 Val205 | 0.367 | 0.391 | 5.99E-02 | reference |
|  | DRβ1 Asp28 - DPβ1 Met205 | 0.285 | 0.196 | 2.04E-15 | 1.63 (1.38 - 1.92 ) |
|  | DRβ1 Glu28 - DPβ1 Val205 | 0.091 | 0.144 | 2.29E-10 | 0.66 (0.54 - 0.82 ) |
|  | DRβ1 Glu28 - DPβ1 Deletion205 | 0.032 | 0.081 | 7.77E-16 | 0.41 (0.32 - 0.54 ) |
|  | DRβ1 Glu28 - DPβ1 Met205 | 0.070 | 0.074 | 6.20E-01 | 1.11 (0.86 - 1.43 ) |
|  | DRβ1 His28 - DPβ1 Val205 | 0.060 | 0.058 | 6.97E-01 | 1.01 (0.76 - 1.35 ) |
|  | DRβ1 His28 - DPβ1 Met205 | 0.095 | 0.056 | 2.38E-08 | 2.05 (1.60 - 2.63 ) |
|  | OMNIBUS |  |  | 2.47E-35 |  |
| HLA-B | Ala199 | 0.98 | 0.95 | 1.76E-09 | 2.51 ( 1.87- 3.38) |
|  | Val199 | 0.02 | 0.05 | 1.76E-09 | 0.4 ( 0.30- 0.54) |
|  | Ile66 | 0.81 | 0.87 | 1.79E-10 | 0.63 ( 0.55- 0.73) |
|  | Lys66 | 0.14 | 0.06 | 5.81E-21 | 2.4 ( 2.00- 2.87) |
|  | Asn66 | 0.05 | 0.07 | 1.72E-02 | 0.76 ( 0.61- 0.95) |
| HLA-B | Ala199 - Ile66 | 0.786 | 0.818 | 2.53E-03 | reference |
|  | Ala199 - Asn66 | 0.050 | 0.065 | 1.53E-02 | 0.79(0.63 - 0.99) |
|  | Ala199 - Lys66 | 0.141 | 0.065 | 3.18E-22 | 2.31(1.92 - 2.78) |
|  | Val199 - Ile66 | 0.022 | 0.052 | 5.25E-10 | 0.42(0.31 - 0.57) |
|  | OMNIBUS |  |  | 9.75E-28 |  |

OR, odds ratio; Freq, haplotype frequency. Protective haplotypes are highlighted in green. Risk haplotypes are highlighted in red.

Supplementary Table S4. Association results of 997 pTRAb+ patients vs. 1,490 controls

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Build 36 position  (bp) | Variant ID | Allele 1 Frequency | | | | Nominal | | |
| Allele 1 | 997 pTRAb+ patients | 1,490 controls | Allele 2 | Degree of Freedom | *P*logitic | OR (95%CI) |
| 33161588 | HLA-DPB1 position 205 |  |  |  |  | 2 | 7.52E-35 |  |
| 31432518 | HLA-B position 66 |  |  |  |  | 2 | 2.41E-18 |  |
| 31431300 | HLA-B position 199 |  |  |  |  | 2 | 6.55E-13 |  |
| 32659926 | HLA-DRB1 position 74 |  |  |  |  | 4 | 7.91E-22 |  |
| 33161588 | AA\_DPB1\_205\_33161588\_M | P | 0.47 | 0.32 | A | 1 | 3.56E-29 | 2.12( 1.86- 2.42) |
| 33161588 | AA\_DPB1\_205\_33161588\_V | P | 0.49 | 0.59 | A | 1 | 3.41E-12 | 0.65( 0.57- 0.73) |
| 33161588 | AA\_DPB1\_205\_33161588\_x | P | 0.04 | 0.09 | A | 1 | 5.66E-13 | 0.37( 0.28- 0.48) |
| 31432518 | AA\_B\_66\_31432518\_I | P | 0.81 | 0.87 | A | 1 | 1.22E-09 | 0.62( 0.53- 0.72) |
| 31432518 | AA\_B\_66\_31432518\_K | P | 0.14 | 0.06 | A | 1 | 9.64E-19 | 2.43( 1.99- 2.95) |
| 31432518 | AA\_B\_66\_31432518\_N | P | 0.05 | 0.06 | A | 1 | 5.71E-02 | 0.79( 0.62- 1.01) |
| 31431300 | AA\_B\_199\_31431300\_A | P | 0.98 | 0.94 | A | 1 | 1.09E-10 | 3.3( 2.30- 4.74) |
| 31431300 | AA\_B\_199\_31431300\_V | P | 0.02 | 0.06 | A | 1 | 1.09E-10 | 0.3( 0.21- 0.44) |
| 32659926 | AA\_DRB1\_74\_32659926\_A | P | 0.59 | 0.55 | A | 1 | 2.00E-02 | 1.15( 1.02- 1.29) |
| 32659926 | AA\_DRB1\_74\_32659926\_E | P | 0.23 | 0.20 | A | 1 | 3.99E-02 | 1.15( 1.01- 1.32) |
| 32659926 | AA\_DRB1\_74\_32659926\_L | P | 0.08 | 0.05 | A | 1 | 5.55E-04 | 1.5( 1.19- 1.89) |
| 32659926 | AA\_DRB1\_74\_32659926\_Q | P | 0.06 | 0.15 | A | 1 | 6.24E-20 | 0.38( 0.31- 0.47) |
| 32659926 | AA\_DRB1\_74\_32659926\_R | P | 0.05 | 0.04 | A | 1 | 7.95E-02 | 1.28( 0.97- 1.68) |

\* Nominal *P* values for amino acid position were calculated using Omnibus test.

Nominal *P* values for amino acid residues and 2-digit and 4-digit classical HLA were calculated using binary test.

Supplementary Table S5. Association results of 410 pTRAb- patients vs. 1,490 controls.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Build 36 position (bp) | Variant ID |  | Allele 1 Frequency | |  | Nominal | | |
| Allele 1 | 410 pTRAb- patients | 1,490 controls | Allele 2 | Degree of Freedom | *P*logitic | OR (95%CI) |
| 31432509 | HLA-B position 69 |  |  |  |  | 2 | 1.83E-11 |  |
| 31432518 | HLA-B position 66 |  |  |  |  | 2 | 7.12E-12 |  |
| 31432518 | AA\_B\_66\_31432518\_I | A | 0.19 | 0.13 | P | 1 | 1.28E-05 | 1.59(1.29-1.96) |
| 31432518 | AA\_B\_66\_31432518\_N | P | 0.05 | 0.06 | A | 1 | 1.05E-01 | 0.75(0.53-1.06) |
| 31432518 | AA\_B\_66\_31432518\_K | P | 0.14 | 0.06 | A | 1 | 9.73E-13 | 2.52(1.95-3.25) |
| 31432509 | AA\_B\_69\_31432509\_T | P | 0.32 | 0.27 | A | 1 | 9.21E-04 | 1.33(1.13-1.58) |
| 31432509 | AA\_B\_69\_31432509\_A | P | 0.19 | 0.20 | A | 1 | 2.68E-01 | 0.89(0.73-1.09) |
| 31432509 | AA\_B\_69\_31432509\_R | A | 0.14 | 0.06 | P | 1 | 9.73E-13 | 2.52(1.95-3.25) |
| 31432488 | AA\_B\_76\_31432488 | V | 0.14 | 0.06 | E | 1 | 9.73E-13 | 2.52(1.95-3.25) |
| 31431272 | HLA\_B\_4601 | P | 0.14 | 0.06 | A | 1 | 1.64E-12 | 2.52(1.95-3.25) |

\* Nominal *P* values for amino acid position were calculated using Omnibus test.

Nominal *P* values for amino acid residues and 2-digit and 4-digit classical HLA were calculated using binary test.