

A meta-analysis of genome-wide association studies for serum total IgE in diverse study populations

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Background: IgE is both a marker and mediator of allergic inflammation. Despite reported differences in serum total IgE levels by race-ethnicity, African American and Latino subjects have not been well represented in genetic studies of total IgE. **Objective:** We sought to identify the genetic predictors of serum total IgE levels.

Methods: We used genome-wide association data from 4292 subjects (2469 African Americans, 1564 European Americans, and 259 Latinos) in the EVE Asthma Genetics Consortium. Tests for association were performed within each cohort by race-ethnic group (ie, African American, Latino, and European American) and asthma status. The resulting *P* values were meta-

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Supported by grants from the National Heart, Lung, and Blood Institute (HL101651 to C.O. and D.L.N.; HL087665 to D.L.N.; HL085197, HL087665, HL072414, and HL49596 to C.O.; HL064307 and HL064313 to F.D.M.; HL075419, HL65899, HL083069, HL066289, HL087680, HL101543, and HL101651 to S.T.W.; HL079055 to L.K.W.; HL087699, HL049612, HL075417, HL04266, and HL072433 to K.C.B.; HL061768, HL076647, to F.D.G.; HL087680 to W.J.G.; HL078885 and HL088133 to E.G.B.; HL087665 to D.A.M.; and HL069167 to E.R.B.), the National Institutes of Allergy and Infectious Disease (AI070503 to C.O.; AI079139 and AI061774 to L.K.W.; AI050024, AI044840, and AI041040 to K.C.B.; and AI077439 to E.G.B.), the National Institute of Diabetes and Digestive and Kidney Diseases to L.K.W. (DK064695); the National Institutes of Environmental Health Sciences (ES09606, ES018176, and ES015903 to K.C.B.; ES007048, ES009581, R826708, RD831861, and ES011627 to F.D.G.; ES015794 to E.G.B.); and the Division of Intramural Research, Z01 ES049019, to S.J.L.); the National Center for Research

Resources (RR03048 to K.C.B.), the Environmental Protection Agency (83213901 and R-826724 to K.C.B.), the American Asthma Foundation and the Fund for Henry Ford Hospital (to L.K.W.), Mary Beryl Patch Turnbull Scholar Program (to K.C.B.), the National Council of Science and Technology (Mexico; 26206-M to I.R.), the Centers for Disease Control, US (to I.R.); and the Flight Attendant Medical Research Institute (FAMRI), RWJF Amos Medical Faculty Development Award, the American Asthma Foundation, and the Sandler Foundation (to E.G.B.). The Canadian studies (SAGE and CAPPS) were supported by AllerGen NCE (the Allergy, Genes and Environment Network, which is a member of the Networks of Centres of Excellence) and by a grant from the Canadian Institutes for Health Research. D.D. is supported by a Tier II Canadian Research Chair and a scholar award from the Michael Smith Foundation for Health Research. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Disclosure of potential conflict of interest: A. M. Levin has received grants and travel support from and is employed by the Henry Ford Health System. L. Huang has received grants from the National Institutes of Health (NIH). L. A. Roth has received grants from the NIH. D. Daley has received grants from the Canadian Institutes for Health Research and AllerGen NCE. C. R. Gignoux has stock/stock options with 23andMe, Inc. J. M. Galanter has received grants from the University of California San Francisco and the NIH. S. Huntsman has received grants from the NIH. F. D. Martinez has consultant arrangements with MedImmune, has received grants from the NIH, and has received payment for lectures and travel support from Abbott and Merck. K. C. Barnes has received grants from the NIH; is a member of the board for Genentech; has consultant arrangements with Sanofi-Aventis and Sirir Genomics; is employed by Johns Hopkins University; and has received payment for lectures from the "Evolution and Diseases of Modern Environments" symposium, the Cincinnati CHMC Allergy Conference, the 50th Annual Swineford Allergy Conference, and the American Academy of Allergy, Asthma, & Immunology. L. K. Williams has received grant support from the National Institute of Allergy and Infectious Diseases, the National Heart, Lung, and Blood Institute, and the National Institute of Diabetes and Digestive and Kidney Diseases and has received payment for lectures from Merck & Co. The rest of the authors declare that they have no relevant conflicts of interest.

Received for publication July 6, 2012; revised September 28, 2012; accepted for publication October 2, 2012.

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0091-6749/\$36.00

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<http://dx.doi.org/10.1016/j.jaci.2012.10.002>

analyzed, accounting for sample size and direction of effect. Top single nucleotide polymorphism associations from the meta-analysis were reassessed in 6 additional cohorts comprising 5767 subjects.

Results: We identified 10 unique regions in which the combined association statistic was associated with total serum IgE levels ($P < 5.0 \times 10^{-6}$) and the minor allele frequency was 5% or greater in 2 or more population groups. Variant rs9469220, corresponding to *HLA-DQB1*, was the single nucleotide polymorphism most significantly associated with serum total IgE levels when assessed in both the replication cohorts and the discovery and replication sets combined ($P = .007$ and 2.45×10^{-7} , respectively). In addition, findings from earlier genome-wide association studies were also validated in the current meta-analysis.

Conclusion: This meta-analysis independently identified a variant near *HLA-DQB1* as a predictor of total serum IgE levels in multiple race-ethnic groups. This study also extends and confirms the findings of earlier genome-wide association analyses in African American and Latino subjects. (J Allergy Clin Immunol 2012;■■■:■■■-■■■.)

Key words: Meta-analysis, genome-wide association study, total IgE, race-ethnicity, continental population groups

IgE is an important mediator in allergic inflammation, and levels are often increased in subjects with atopic conditions, such as asthma.¹⁻³ Recently published genome-wide association studies (GWASs) for asthma and serum total IgE levels suggest that there are some, but not many, overlapping top-hit single nucleotide polymorphisms (SNPs) in genes associated with these phenotypes.⁴⁻⁶ The independence (ie, lack of genetic pleiotropy) of these 2 phenotypes is also supported by minimal shared variance between the heritable components of serum total IgE levels and airway responsiveness.⁷ In addition, although environmental exposures influence total IgE levels, studies in twins suggest that genetic inheritance accounts for the majority of variation in levels between subjects.^{8,9}

Serum total IgE levels differ by population group in the United States, with higher levels reported in both African American and Latino subjects when compared with non-Hispanic white subjects (henceforward referred to as European Americans).¹⁰⁻¹³ Because genetic ancestry has been shown to be associated with total IgE levels, it is possible that these population-level differences have some genetic underpinnings.¹⁴ This is also supported by heterogeneity in linkage signals for total IgE levels among these 3 population groups.¹⁵ However, despite these potential differences, African American and Latino subjects have not been well represented in genetic studies of total IgE to date.

The EVE consortium comprises 9 research groups across the United States with genome-wide genotype data on subjects with and without asthma. The assembled study participants are broadly representative of 3 major population groups (ie, African American, European American, and Latino subjects) in North America and have data on asthma-associated phenotypes, including serum total IgE. We describe here the results of a meta-analysis of GWASs for serum total IgE, combining results from the various EVE investigators. Associations were first determined among subgroups of subjects defined by asthma status and self-identified

Abbreviations used

CAG:	Chicago Asthma Genetics Study
CAMP:	Childhood Asthma Management Program
CARE:	Childhood Asthma Research and Education
CHF:	Congestive heart failure
COPD:	Chronic obstructive pulmonary disease
CSGA:	Collaborative Studies of the Genetics of Asthma
GALA I:	Genetics of Asthma in Latino Americans
GALA II:	Gene-Environments and Admixture in Latino Americans
GRAAD:	Genetic Research on Asthma in the African Diaspora
GWAS:	Genome-wide association study
LD:	Linkage disequilibrium
SAGE:	Study of African Americans, Asthma, Genes and Environments
SAPPHIRE:	Study of Asthma Phenotypes and Pharmacogenomic Interactions by Race-ethnicity
SARP:	Severe Asthma Research Program
SNP:	Single nucleotide polymorphism

race-ethnicity before combining so as to minimize the potential confounding effects of these characteristics.

METHODS

Study populations

The EVE consortium comprises 9 investigative teams throughout the United States, each with genome-wide association data for asthma from case-control, trio, or extended family studies.¹⁶ All of the cohorts represented in the meta-analysis (ie, the discovery set) were part of the EVE consortium, and each of these individual study populations has been described in detail previously.¹⁷⁻²⁵ These study populations are broadly representative of the major North American population groups and were recruited through clinics and health systems in the United States, Puerto Rico, Mexico, and Barbados. All studies included in the current analysis were approved by their respective institutional review boards.

Only the EVE samples in which the participants had serum total IgE levels measured at the time of screening or enrollment were included in the current meta-analysis. These included the following studies: the Study of Asthma Phenotypes and Pharmacogenomic Interactions by Race-ethnicity (SAPPHIRE); the Genetic Research on Asthma in the African Diaspora (GRAAD) study; the Genetics of Asthma in Latino Americans (GALA I) study; the Childhood Asthma Management Program (CAMP); the Childhood Asthma Research and Education (CARE) Network; the Chicago Asthma Genetics Study (CAG); the National Heart, Lung, and Blood Institute Collaborative Studies of the Genetics of Asthma (CSGA); and the Severe Asthma Research Program (SARP). The latter 3 studies make up the National Heart, Lung, and Blood Institute–supported SNP Typing for Association with Multiple Phenotypes from Existing Epidemiologic Data (STAMPEED) consortium (heretofore collectively referred to by that acronym).

SAPPHIRE is an ongoing prospective cohort study to determine the genetic determinants of inhaled corticosteroid response.^{17,18} Participants were aged 12 to 56 years, had a physician's diagnosis of asthma, demonstrated bronchodilator reversibility ($>12\%$ increase in FEV₁), and had no prior diagnosis (in the electronic medical record or by patient report) of chronic obstructive pulmonary disease (COPD) or congestive heart failure (CHF). All patients were recruited from a single large health system covering southeast Michigan. A subset of these subjects was genotyped with the Affymetrix 6.0 GeneChip Array (Affymetrix, Santa Clara, Calif). Control subjects for SAPPHIRE were from the Wayne County Health Environment Allergy and Asthma Longitudinal Study and included expectant women aged 21 years or older from the Detroit metropolitan area and receiving care from the same health system. This group was genotyped with the Affymetrix 5.0 GeneChip Array or the 500K Mapping Array.

The GRAAD-AA study comprised African American subjects with asthma (self-reported) and nonasthmatic control subjects from the Baltimore-Washington, DC, area.¹⁹ The GRAAD-AC study consisted of extended families from Barbados with at least 1 asthma proband.¹⁹ In this study a diagnosis of asthma required a self-reported history, physician's diagnosis, and a history of wheezing without an upper respiratory tract infection. Subjects were genotyped on the Illumina HumanHap650Y versions 1 and 3 BeadChips (Illumina, San Diego, Calif).

The GALA I study is a trio study including asthma probands aged 8 to 40 years with a physician's diagnosis of mild to moderate-severe asthma and symptoms at least twice in the 2 years preceding enrollment.²⁰ Subjects were recruited from sites in San Francisco, New York City, Puerto Rico, and Mexico City. Subjects were genotyped on the Affymetrix 6.0 GeneChip Array.

The CAMP subjects were part of a multicenter clinical trial of children with mild-to-moderate asthma and airway responsiveness determined by means of methacholine challenge ($\geq 20\%$ decrease in FEV₁ with ≤ 12.5 mg/dL methacholine).²³ Although parents of these children were also recruited for this trio study, only the children with total IgE data were included in the current analysis. Subjects were genotyped on the Illumina HumanHap500 version 3 BeadChip.

The CARE Network represents a series of clinical trials, 5 of which contributed to the current meta-analysis (Prevention of Early Asthma in Kids [PEAK],²⁶ Pediatric Asthma Controller Trial [PACT],²⁷ Characterizing the Response to a Leukotriene Receptor Antagonist and an Inhaled Corticosteroid [CLIC],²⁸ Acute Intervention Management Strategies [AIMS],²⁹ and Montelukast or Azithromycin for Reduction of ICS in Childhood Asthma [MARS]³⁰). All participants were children with physician-diagnosed asthma. Parents of these subjects were also recruited to compose a trio study, but only the children for whom we had total IgE data were included in this analysis. Subjects were genotyped with the Affymetrix 6.0 GeneChip array.

CAG and the CSGA samples comprise both children and adults with asthma (physician's diagnosis, symptoms, and airway responsiveness determined by methacholine challenge or bronchodilator reversibility). Subjects in these studies were recruited from multiple locations, but only those recruited from clinics at the University of Chicago, University of Maryland-Baltimore, and Wake Forest University who had genome-wide genotype data were included in the current analysis. The Severe Asthma Research Program included subjects with mild-to-severe asthma.³¹ Nonasthmatic control subjects were recruited from the same clinic sites for these studies. The subjects were genotyped on the Illumina 1M version 1 BeadChip.

Meta-analysis for serum total IgE

Given the different platforms used to genotype the EVE cohorts, imputation was used to create a common and near-complete set of SNP genotypes across all groups. Each research group used the program MACH³² to impute genotypes in their respective study population or populations by using the reference panels from HapMap phase 2, release 21. For European American subjects, haplotypes from the CEPH European Americans of Northern and Western European ancestry (CEU) were used as the reference. For African American and African Caribbean subjects, both the CEU and the Yoruba of West African (YRI) haplotypes served as referenced. For Latino subjects, the haplotypes from all of the original HapMap population groups (ie, CEU, YRI, Japanese from Tokyo [JPT], and ethnic Han Chinese from Beijing [CHB]) were used as referenced. Poorly imputed SNPs with MACH r^2 values of less than 0.3 were removed from the analysis.

For analysis, study subjects were stratified by study cohort, race-ethnicity (ie, African Caribbean and African American combined, European American, and Latino), and asthma status. The dependent variable, serum total IgE levels, was logarithmically (natural log) transformed to normalize its distribution and diminish the effect of outliers; 5 subjects with total IgE values of less than 2 IU/mL were also excluded from the analysis. As has been done for other genetic analyses,³³ we used Studentized residuals to standardize the distributions of log-transformed IgE values across race-ethnic groups, asthma disease status, and study populations. For each within-study population group, we generated Studentized residuals adjusted for age and sex, whereby the residuals represented the remaining variation in total IgE levels after adjustment. Because these residuals were normally distributed, these steps ensured a

comparable scale for the regression coefficient, summarizing the association between each SNP and total IgE level, thus limiting bias in the meta-analysis arising from distributional differences in total IgE levels across groups. These residuals were then used as the primary phenotype for association with the allele dosage estimates for each genotype. We assumed an additive genetic model, with the reference allele coded as zero. Study-specific genome-wide principal components generated by the program EIGENSOFT were included as covariates to account for underlying population structure.³⁴ Given the extended pedigree structure of GRAAD-AC, a linear mixed-effects model using a kinship matrix approach was used for this cohort³⁵; this method corrects for familial correlation (both known and unknown) by estimating the empiric kinship between all pairs of subjects.

We used the analytic software METAL³⁶ to perform the meta-analysis. This program used an inverse normal approach to combine stratum-specific *P* values, which accounted for both the direction of effect and the sample size of each stratum. The meta-analysis was performed for the overall sample and within the race-ethnic groups (ie, African Caribbean and African American subjects combined, European American subjects, and Latino subjects). The most significant SNP associations ($P < 5.0 \times 10^{-6}$) were promoted for replication if they were informative in at least 2 of the 3 race-ethnic groups (ie, minor allele frequency of $\geq 5\%$). This threshold was similar to that suggested by others for GWASs³⁷ but was less stringent than the Bonferroni-corrected value ($P < 5.0 \times 10^{-8}$), which might be overly conservative. We elected to use the former so as to provide a feasible number of SNPs for assessing replication. When multiple SNPs in a region met this criterion, we selected the polymorphism with the greatest overall statistical significance. We also assessed for heterogeneity of the top SNP associations by race-ethnicity and asthma disease status using the Cochran *Q* test, as implemented in METAL.^{36,38}

Replication populations and analysis

The top 10 signals were replicated in 6 case-control and population-based samples from the United States and Canada and a founder population in the United States. The US replication populations included a separate group of subjects from SAPHIRE,³⁹ the Gene-Environments and Admixture in Latino Americans (GALA II) study, and the Study of African Americans, Asthma, Genes, and Environments (SAGE [United States]).⁴⁰ The Canadian cohorts included the Canadian Asthma Primary Prevention Study (CAPPS)^{41,42} and the Study of Asthma Genes and the Environment (SAGE [Canada]).^{42,43} The US founder population consisted of Hutterites who live in South Dakota.⁴⁴

The SAPHIRE study participants included in the replication were those without genome-wide association data who were aged 12 to 56 years, had a physician's diagnosis of asthma, and had no prior diagnosis of COPD or CHF. Replication control subjects were also aged 12 to 56 years; had no prior diagnosis of asthma, COPD, or CHF; and were recruited within the same health care system.

The GALA II study is a large case-control study recruiting Latino subjects with and without asthma (physician diagnosed) from clinical sites in San Francisco, New York City, Houston, Chicago, and Puerto Rico. Subjects were recruited at age 8 to 21 years. The SAGE (United States) study was overseen by the same research team and recruited African American subjects with and without a physician's diagnosis of asthma from the San Francisco Bay area. Case patients were aged 8 to 40 years and had physician-diagnosed asthma. Control subjects in both the GALA II study and SAGE were enrolled from the same clinics concurrently and had no prior diagnosis of allergies, asthma, lung disease, symptoms consistent with asthma within the preceding 2 years, and a less than 10 pack year smoking history.

The Canadian SAGE study was a population-based birth cohort consisting of subjects born in Manitoba in 1995. From this group, a nested case-control study was selected, representing children with and without pediatrician-diagnosed asthma. Serum total IgE levels were measured between the ages of 7 and 10 years. CAPPS, another birth cohort, included infants born between October 1994 and August 1996 who were deemed to be at high risk for allergies as a result of 1 or more first-degree relatives with asthma or 2 or more first-degree relatives with an IgE-mediated allergic disease.

TABLE I. Baseline characteristics of subjects included in the meta-analysis of IgE stratified by study

	Study cohort						
	SAPPHIRE (n = 276)	GRAAD-AC (n = 635)	GRAAD-AA (n = 806)	GALA I (n = 215)	CAMP (n = 362)	CARE (n = 229)	STAMPEED (n = 1769)
Age (y), mean $\pm$ SD (range)	30.4 $\pm$ 10.5 (12-56)	28.3 $\pm$ 16.4 (3-84)	29.5 $\pm$ 18.3 (4-78)	12.9 $\pm$ 5.5 (8-35)	8.8 $\pm$ 2.1 (5-13)	6.0 $\pm$ 4.1 (1-17)	30.9 $\pm$ 14.7 (6-81)
Female sex, no. (%)	216 (78.3)	322 (50.7)	405 (50.2)	90 (41.9)	134 (37.0)	59 (25.8)	1199 (67.8)
Race-ethnicity, no. (%)							
African American	276 (100)	0 (0)	806 (100)	0 (0)	0 (0)	0 (0)	752 (42.5)
African Caribbean	0 (0)	635 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
European American	0 (0)	0 (0)	0 (0)	0 (0)	362 (100)	185 (80.8)	1017 (57.5)
Latino	0 (0)	0 (0)	0 (0)	215 (100)	0 (0)	44 (19.2)	0 (0)
History of asthma, no. (%)	149 (54.0)	274 (43.2)	458 (56.8)	215 (100)	362 (100)	229 (100)	1067 (60.3)
Serum total IgE (IU/mL), geometric mean $\pm$ SD	103.5 $\pm$ 4.1	188.7 $\pm$ 4.8	90.9 $\pm$ 5.0	247.2 $\pm$ 3.9	428.4 $\pm$ 4.6	34.1 $\pm$ 4.1	94.6 $\pm$ 4.8

STAMPEED comprises CAG, the National Heart, Lung, and Blood Institute CSGA, and the SARP.

GRAAD-AA, Genetic Research on Asthma in the African Diaspora–African American; GRAAD-AC, Genetic Research on Asthma in the African Diaspora–African Caribbean; STAMPEED, SNP Typing for Association with Multiple Phenotypes from Existing Epidemiologic Data.

The founder population comprised the Schmiedeleut Hutterites residing in primarily South Dakota. This extended pedigree has been used in prior investigations of allergy and asthma.⁴⁴⁻⁴⁶

Replication genotype data were generated from either allelic discrimination (TaqMan; Applied Biosystems, Foster City, Calif) or commercially available high-throughput arrays. For the SAPPHIRE and SAGE cohorts, all replication SNPs were genotyped by using allelic discrimination. In the GALA II study genome-wide array results were available from the Axiom LAT array (Affymetrix) for rs9469220 and rs16977747, and the remaining SNP were genotyped with TaqMan. In the 2 Canadian cohorts rs321588, rs7751374, rs10124954, and rs6499255 were genotyped on the Illumina Human610-Quad array; rs9469220, rs537526, and rs16977747 were imputed by using MACH; rs2885872 was a genotyped proxy (CEU $r^2 = 1.0$) used for rs2363709; and rs10043454 and rs4355582 were imputed proxies used for rs13361473 and rs10944017, respectively. Among the Hutterites, rs9469220, rs7751374, rs10124954, rs537526, and rs16977747 were genotyped on the Affymetrix 6.0 GeneChip, and rs613614, rs2101567, rs9314043, and rs11075734 were used as genotype proxies for rs321588, rs2363709, rs13361473, and rs6499255, respectively.

We applied a similar analytic approach as used in the discovery cohorts to the assessment of the replication data. Groups were stratified according to cohort, race-ethnicity, and asthma status. Standardized residuals from the linear models associating natural log-transformed serum total IgE levels with age and sex were used in second-stage models in association with replication genotypes. The association with genotype was assessed assuming an additive genetic model. We again used METAL³⁶ to combined stratum-specific P values. Analyses were performed for the overall replication sample and within groups defined by race-ethnicity (ie, for European American, African American, and Latino subjects).

RESULTS

The characteristics of the 6 study groups in the genome-wide meta-analysis of serum total IgE levels are shown in Table I (subjects in the GRAAD study recruited from the United States and the Caribbean are shown separately). These cohorts comprised 4292 study subjects ranging in age from 1 to 84 years. The combined group included 2425 (56.5%) female subjects and 2754 (64.1%) subjects with a history of asthma. The race-ethnic breakdown of the total group included 2469 (57.4%) African American and African Caribbean subjects, 259 (6.0%) Latino subjects, and 1564 (36.4%) European American subjects. The distribution of serum total IgE levels by race-ethnicity, asthma status, and study

is shown in Table E1 in this article's Online Repository at www.jacionline.org.

Association for total IgE was performed within groups stratified by race-ethnicity, asthma status, and study cohort. Within the cohorts with a single population group represented (ie, SAPPHIRE, GRAAD-AC study, GRAAD-AA study, GALA I study, and CAMP), we stratified by asthma status alone. Association statistics were meta-analyzed, accounting for the direction of the effect and sample size. The overall association results and the associations within each race-ethnic group are shown in Table II (parameter estimates for these associations are shown in Table E2 in this article's Online Repository at www.jacionline.org). The Manhattan plot for the genome-wide meta-analysis is shown in Fig 1, and the quantile-quantile plot is shown in Fig E1 in this article's Online Repository at www.jacionline.org. Ten distinct regions were identified in which the combined P value was less than 5.0×10^{-6} , and the association was informative in 2 or more population groups. Most of the regions associated with total IgE levels were novel, with the exception of *HLA-DQB1*.

Six study populations consisting of 5767 subjects were available to replicate the findings of the discovery set (Table III). The replication set comprised 2961 (51.3%) African American subjects, 1477 (25.6%) Latino subjects, and 1329 (23.0%) European American subjects; 3930 (68.1%) had a history of asthma. The association statistics for the replication set were combined in a manner analogous to the discovery set. As shown in Table IV, of the 10 SNPs analyzed for replication, only rs9469220 near *HLA-DQB1* reached marginal significance ($P = .0074$ for the replication set; $P = 2.45 \times 10^{-7}$ for the combined discovery and replication set; parameter estimates for these associations are shown in Table E3 in this article's Online Repository at www.jacionline.org). There was also some evidence for possible heterogeneity at rs16977747 on chromosome 17 by population group and asthma status (ie, strongest association for both Latino subjects and those with asthma; see Tables E4 and E5 in this article's Online Repository at www.jacionline.org).

We also assessed variants in genes described in earlier GWASs of serum total IgE levels (Table V).^{4,6,47} We found that many of the genes (and variants) identified in these earlier studies

TABLE II. Genome-wide meta-analysis results of the top associations with serum total IgE levels stratified by race-ethnic group*

SNP	Chromosome	Position	Alleles†	Risk allele‡	Nearest gene	P value			
						European American (n = 1564)	African Caribbean and African American (n = 2469)	Latino (n = 259)	All groups combined (n = 4292)
rs321588	1	96,688,818	G/A	G	<i>PTBP2</i>	.0019	.0027	.0137	2.05×10^{-6}
rs2363709	3	67,417,105	G/A	A	<i>SUCLG2</i>	.0224	1.92×10^{-5}	.8830	3.26×10^{-6}
rs13361473	5	164,170,729	A/G	A	<i>MAT2B</i>	.0001	.0024	.7021	2.46×10^{-6}
rs9469220	6	32,658,310	G/A	A	<i>HLA-DQB1</i>	.0347	.0017	6.43×10^{-6}	1.87×10^{-6}
rs10944017	6	85,300,836	C/T	C	<i>TBX18</i>	—§	3.42×10^{-8}	.4222	3.88×10^{-8}
rs7751374	6	107,981,856	G/A	G	<i>SOBP</i>	.0025	6.66×10^{-5}	.0072	3.68×10^{-8}
rs10124954	9	82,836,415	T/C	T	<i>TLE4</i>	.0132	3.22×10^{-5}	.3463	1.65×10^{-6}
rs537526	11	96,840,444	G/A	A	<i>CCDC82</i>	.0005	.0004	.5877	8.66×10^{-7}
rs6499255	16	69,830,328	A/G	A	<i>WWP2</i>	.0002	.0035	.1177	1.03×10^{-6}
rs16977747	17	71,699,790	T/C	T	<i>LINC00469</i>	—§	2.21×10^{-6}	.1467	7.42×10^{-7}

*Includes the results from the following cohorts: SAPHIRE; Genetic Research on Asthma in the African Diaspora–African Caribbean (GRAAD-AC); Genetic Research on Asthma in the African Diaspora–African American (GRAAD-AA); GALA I study; CAMP; CARE; CAG; the National Heart, Lung, and Blood Institute CSGA; and SARP.

†The first allele corresponds to the “reference/other” allele in dbSNP build 125.

‡The risk allele denotes the allele associated with high serum total IgE levels for all groups combined.

§These SNPs were uninformative based on our within-group threshold requiring a minor allele frequency of 5% or greater.

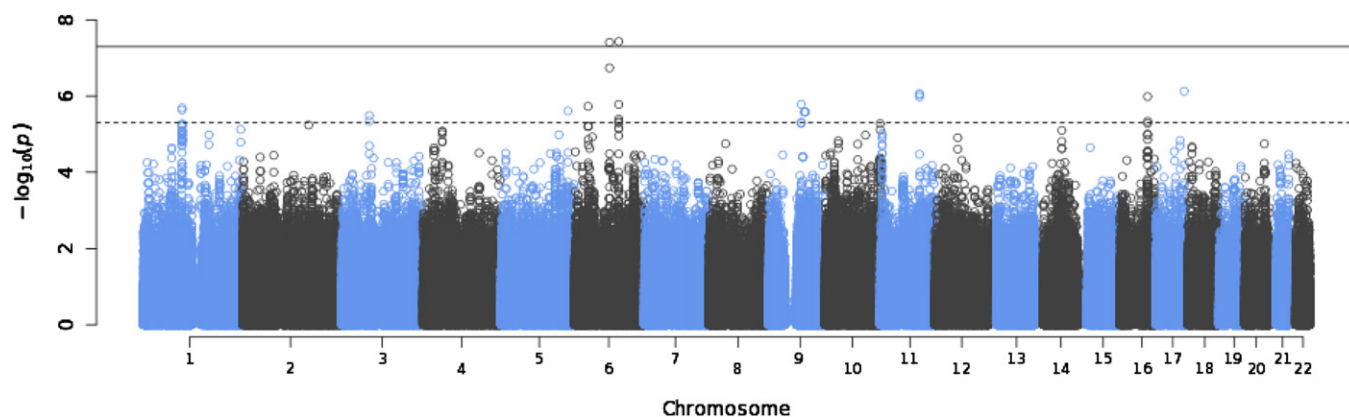


FIG 1. Manhattan plot of the genome-wide association results for serum total IgE levels from the meta-analysis. The significance level used to promote SNPs for replication ($P < 5.0 \times 10^{-6}$) is denoted by the dashed line. The solid line shows the genome-wide significance level at a P value of less than 5.0×10^{-8} .

TABLE III. Characteristics of subjects included in the meta-analysis replication stratified by study

	Study cohort					
	SAPHIRE* (United States [n = 1761])	SAGE (United States [n = 1200])	GALA II (United States [n = 1477])	SAGE (Canada [n = 423])	CAPPS (Canada [n = 226])	Hutterites (United States [n = 680])
Age (y), mean $\pm$ SD (range)	34.1 $\pm$ 14.1 (12-57)	15.3 $\pm$ 5.7 (7-41)	12.8 $\pm$ 3.3 (8-21)	9.0 $\pm$ 0.5 (7-10)	7.2 $\pm$ 0.2 (6-8)	29.8 $\pm$ 16.7 (6-78)
Female sex, no. (%)	1117 (63.4)	574 (47.8)	727 (49.2)	187 (44.2)	101 (44.7)	352 (51.8)
Race-ethnicity, no (%)						
African American	1761 (100)	1200 (100)	0 (0)	0 (0)	0 (0)	0 (0)
African Caribbean	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
European American	0 (0)	0 (0)	0 (0)	423 (100)	226 (100)	680 (100)
Latino	0 (0)	0 (0)	1477 (100)	0 (0)	0 (0)	0 (0)
History of asthma	1427 (64.5)	916 (76.3)	856 (58.0)	157 (37.1)	47 (20.8)	153 (22.5)
Serum total IgE (IU/mL), geometric mean $\pm$ SD	120.3 $\pm$ 4.5	119.1 $\pm$ 4.8	162.4 $\pm$ 5.0	8.3 $\pm$ 15.4	14.8 $\pm$ 14.96	23.8 $\pm$ 4.6

*SAPHIRE subjects in the replication set excluded those who were part of the discovery set.

replicated in the current meta-analysis. Genes with evidence of replication in all of our study groups combined included *DARC*, *FCERIA*, *RAD50*, *IL13*, *HLA-DQA2*, and *STAT6*. Not surprisingly, some of the variants showed differences in statistical

significance by population group, whereas others (eg, rs2858331 in *HLA-DQA2*) showed a consistent pattern in all population groups. Interestingly, the variant rs2858331, which has been ascribed to *HLA-DQA2*,⁴⁷ is located approximately 20 kb

TABLE IV. Replication results for genome-wide meta-analysis of serum total IgE levels stratified by race-ethnic group*

SNP	Chromosome	Nearest gene	P value				
			European American (n = 1,329)	African Caribbean and African American (n = 2,961)	Latino (n = 1,477)	All groups, replication set (n = 5,767)	All groups, discovery and replication set combined† (n = 10,059)
rs321588	1	<i>PTBP2</i>	.4129	.8124	.3737	.9062	.0011
rs2363709	3	<i>SUCLG2</i>	.5518	.8460	.0093	.1896	4.55×10^{-6}
rs13361473	5	<i>MAT2B</i>	.6795	.2455	.6848	.4083	.0002
rs9469220	6	<i>HLA-DQB1</i>	.0592	.1084	.2255	.0074	2.45×10^{-7}
rs10944017	6	<i>TBX18</i>	—‡	.7110	.9087	.8132	.0003
rs7751374	6	<i>SOBP</i>	.6858	.5180	.0550	.7589	.0006
rs10124954	9	<i>TLE4</i>	.1098	.5325	.5034	.5516	.0044
rs537526	11	<i>CCDC82</i>	.3519	.6422	.4353	.7894	.0022
rs6499255	16	<i>WWP2</i>	.9524	.1110	.0308	.0230	1.16×10^{-6}
rs16977747	17	<i>LINC00469</i>	—‡	.0865	.0373	.8508	.0031

*The replication set included SAPHIRE (ie, those not in the discovery set), SAGE (United States), the GALA II cohort, SAGE (Canada), CAPPS, and the Hutterites.

†The discovery set included SAPHIRE; Genetic Research on Asthma in the African Diaspora–African Caribbean (GRAAD-AC); Genetic Research on Asthma in the African Diaspora–African American (GRAAD-AA); GALA I study; CAMP; CARE; CAG; National Heart, Lung, and Blood Institute CSGA; and SARP.

‡These SNPs were uninformative based on our within-group threshold requiring a minor allele frequency of 5% or greater.

TABLE V. Replication results from earlier GWASs for serum total IgE levels in the current meta-analysis group stratified by race-ethnicity*

Gene	SNP	Chromosome	Position	Alleles†	Risk allele‡	P value			
						European American (n = 1564)	African Caribbean and African American (n = 2469)	Latino (n = 259)	All groups combined (n = 4292)
<i>DARC</i>	rs13962¶	1	159175527	G/A	G	.0019	—	.0590	.0003
<i>FCERIA</i>	rs2427837§#	1	159258545	G/A	—	—	—	—	—
	rs2494264¶	1	159266838	T/A	T	.0115	.3614	.1527	.2345
	rs2251746§¶	1	159272060	T/C	T	.0039	.6669	.0123	.0072
	rs2252226	1	159276153	C/T	C	.0060	.3452	.1306	.0060
	rs4656784¶#	1	159326880	A/G	—	—	—	—	—
<i>RAD50</i>	rs2706347§	5	131905117	G/T	T	.0121	.0301	.0792	.0064
	rs3798135§	5	131965109	C/T	T	.0127	.0002	.1158	8.38×10^{-5}
	rs2040704§	5	131973177	A/G	G	.0084	.0039	.1076	.0007
	rs7737470§	5	131974063	T/A	A	.0094	.1311	.0929	.0214
<i>IL13</i>	rs20541 ¶	5	131995964	A/G	A	.0003	.8945	.5571	.0246
	rs2243297¶#	5	131999171	T/A	—	—	—	—	—
<i>HLA-G</i>	rs2523809¶	6	29849619	G/T	T	.5319	.9972	.2351	.4701
<i>HLA-A</i>	rs2517754¶#	6	29896680	T/C	—	—	—	—	—
	rs2571391¶	6	29923838	A/C	A	.4381	.5206	.5674	.2730
<i>HLA-DRB1</i>	rs9271300 #	6	32581582	C/G	—	—	—	—	—
<i>HLA-DQA2</i>	rs2858331¶	6	32681277	A/G	G	.0014	.0102	.0099	6.30×10^{-6}
<i>STAT6</i>	rs167769 ¶	12	57503775	C/T	T	.0574	8.81×10^{-5}	.6933	2.48×10^{-5}
	rs12368672§	12	57512470	C/G	G	.0357	.0255	.7028	.0022
<i>IL4R/IL21R</i>	rs1859308	16	27397998	A/G	A	.6262	.1098	.4543	.2186

*Includes SAPHIRE; the Genetic Research on Asthma in the African Diaspora–African Caribbean (GRAAD-AC) study; the Genetic Research on Asthma in the African Diaspora–African American (GRAAD-AA) study; the GALA I study; CAMP; CARE; CAG; the National Heart, Lung, and Blood Institute CSGA; and SARP. Associations were first assessed in groups stratified by race-ethnicity, asthma status, and study before meta-analytically combining to generate the overall and population group results.

†The first allele corresponds to the “reference/other” allele in dbSNP build 125.

‡The risk allele denotes the allele associated with high serum total IgE levels for all groups combined.

§Identified by Weidinger et al.⁴

||Identified by Moffatt et al.⁶

¶Identified by Granada et al.⁴⁷

#Not imputed.

from our top hit, rs9469220. Fig 2⁴⁷ shows the linkage disequilibrium (LD) between rs9469220 and rs2858331 and the other SNPs in the HLA-DR/DQ region. Table E6 in this article's Online Repository at www.jacionline.org shows the SNP association statistics for polymorphisms for which we had data and that were located within 20 kb of the transcription start and stop site for genes shown in Table V.

DISCUSSION

We are aware of 2 GWASs^{4,47} and one genome-wide meta-analysis examining genetic variants associated with serum total IgE levels.⁶ However, to our knowledge, this is the first of such studies to include substantial numbers of participants who are not primarily European in ancestry (ie, African American and Latino subjects).

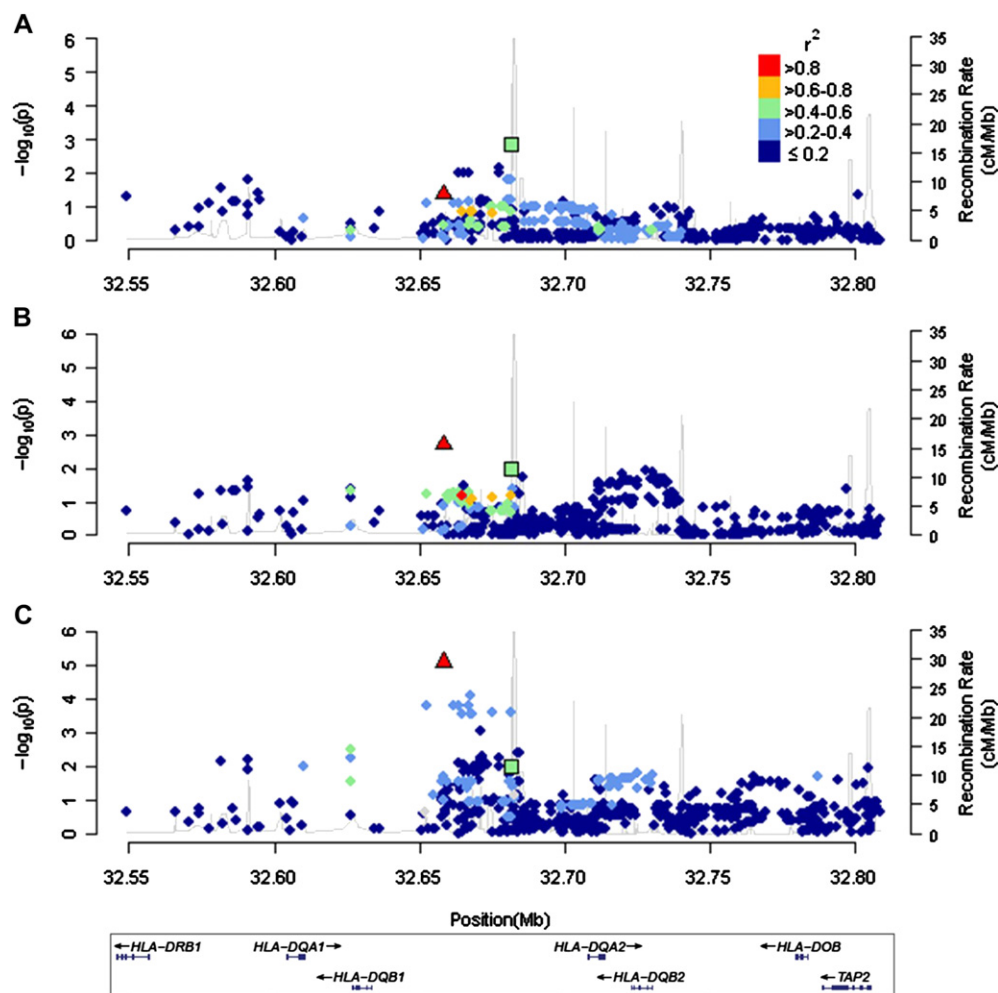


FIG 2. Locus zoom plots of rs9469220 (triangles) located between *HLA-DQB1* and *HLA-DQA2* on chromosome 6 and its association with serum total IgE levels. The plots show the association *P* values (derived from the genome-wide meta-analysis) and the LD (with rs9469220) in color for the surrounding SNPs in European American subjects (A), African American subjects (B), and Latino subjects (C). The polymorphism near *HLA-DQA2*, rs2858331, as identified by Granada et al⁴⁷ is also shown (squares).

Our findings confirm the role of variants in the class II MHC region on serum total IgE levels. In particular, we found that a polymorphism, rs9469220, located between *HLA-DQB1* and *HLA-DQA2* was associated with total IgE levels. The diversity of our study population further supported the importance of this locus on IgE levels because the relationship was consistent across multiple population groups and was robust to differences in asthma disease status.

Moffatt et al,⁶ as part of the GABRIEL (a Multidisciplinary Study to Identify the Genetic and Environmental Causes of Asthma in the European Community) Consortium, also recently described markers around *HLA-DRB1* and *HLA-DQB1* to be associated with total IgE levels, although the latter was more strongly associated with asthma. A recent GWAS of participants enrolled in the Framingham Study also found that a polymorphism just upstream of *HLA-DQA2* (rs2858331) was significantly associated with total IgE levels.⁴⁷ Others testing more limited numbers of SNPs have found relationships between polymorphisms in the HLA-DR/DQ region and IgE levels.^{48,49} Therefore our results support the findings of these earlier studies and extend them to encompass most major North American population groups.

Total IgE production is promoted through elaboration of T_H2 cytokines, such as IL-4 and IL-5.⁵⁰ T_H1 and T_H2 activation might in turn depend on the number of MHC class II molecules involved in presentation and the presence or absence of costimulation through CD28.⁵¹ Curiously, querying gene expression results from lymphoblastoid cell lines derived from HapMap subjects,⁵² we found that our most significant polymorphism in the HLA-DR/DQ region, rs9469220, is related to the expression of a number of MHC class II molecules. This same SNP has also been shown to be associated with Crohn disease,⁵³ which is considered, at least in part, to be a T_H1 condition.⁵⁴

We found evidence for replication in genes previously identified in other genome-wide analyses and candidate gene studies as being associated with total IgE levels. As shown in Table V, these genes included *DARC*,^{47,55} *FCER1A*,^{4,6,47} *RAD50*,^{4,49} *IL13*,^{4,6,47,49,56} *HLA-DQA2*,⁴⁷ *STAT6*,^{4,6,47,57} and *IL4R/IL21R*.⁶ Most importantly, we now demonstrate that these relationships are present in multiple population groups.

We also identified at least 2 other loci (rs2363709 on chromosome 3 and rs16977747 on chromosome 17) that were associated with serum total IgE levels, with possible heterogeneous

associations across population groups and disease state. Further studies will be needed to assess whether these represent true ancestry-specific or asthma-specific (or non-asthma-specific) determinants of IgE levels.

This study was not without limitations. First, to remove the potential confounding influence of race-ethnicity, asthma status, and study cohort, we first stratified our analytic groups by these categories and then recombined the resultant association statistics through a meta-analysis. Therefore despite our large overall study size, the power within each population-specific stratum was limited. Second, although we accounted for the important confounders, such as sex and age,⁵⁸ many other factors that can influence IgE levels were not available for inclusion in our models, such as the season in which an IgE sample was drawn,^{59,60} use of systemic corticosteroids, and exposure to tobacco smoke.^{11,61} Although these missing factors might have confounded our analysis, it is heartening to see that we could replicate many of the previously described associations. In addition, we cannot say with certainty that the variants we identified by association are causally related to IgE levels; rather, these polymorphism might be in LD with the true causal variant. Because patterns of LD might vary by race-ethnicity, it is also possible that the true causal variant still differs by population group.⁶² Determining these causal variants will likely require additional, finer-scale genotyping and follow-up functional studies.

In summary, our findings provide further evidence for a role of the HLA-DR/DQ region in serum total IgE levels. Importantly, this study suggests that this region has similar determinative import in European American, African American, and Latino subjects. Our study also replicates many of the previously identified genetic associations with total IgE levels in these 3 population groups. Preliminary evidence for genetic predictors that vary by race-ethnicity and asthma status will need to be replicated in the respective population groups. Nevertheless, this study underscores the need to study diverse populations so as to identify both shared and group-specific genetic predictors.

We thank all the study participants and recruiters whose time and effort made this work possible.

Clinical implications: This study suggests that many of the genetic risk factors for serum total IgE levels are shared among North American race-ethnic groups.

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A Meta-analysis of Genome-wide Association Studies for Serum Total IgE in Racial and Ethnically Diverse Study Populations

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FIGURE LEGENDS

eFigure 1. Quantile-quantile (Q-Q) plot of the observed (y-axis) to expected (x-axis) P-values for the genome wide meta-analysis of total IgE.

eTable 1. Serum total IgE levels stratified by race-ethnicity, asthma status, and study cohort.

Study Cohort	Serum total IgE levels (IU/ml) – geometric mean $\pm$ geometric SD					
	European American		African Caribbean and African American		Latino	
	Subjects with asthma	Subjects without asthma	Subjects with asthma	Subjects without asthma	Subjects with asthma	Subjects without asthma
SAPPHIRE	-	-	186.3 $\pm$ 4.1	51.9 $\pm$ 3.3	-	-
GRAAD-AC	-	-	396.9 $\pm$ 3.5	113.6 $\pm$ 4.8	-	-
GRAAD-AA	-	-	103.5 $\pm$ 4.1	103.5 $\pm$ 4.1	-	-
GALA	-	-	-	-	246.6 $\pm$ 3.8	-
CARE	34.8 $\pm$ 4.1	-	-	-	31.6 $\pm$ 3.8	-
CAMP	427.8 $\pm$ 4.6	-	-	-	-	-
STAMPEED	107.7 $\pm$ 4.3	28.3 $\pm$ 3.4	200.6 $\pm$ 4.5	68.7 $\pm$ 3.8	-	-
<i>Summary*</i>	135.8 $\pm$ 5.4	28.3 $\pm$ 3.4	202.5 $\pm$ 4.5	74.3 $\pm$ 4.4	174 $\pm$ 4.7	-

IgE denotes immunoglobulin E; IU/ml, international units per milliliter; SD, standard deviation; SAPPHIRE, Study of Asthma Phenotypes and Pharmacogenomic Interactions by Race-ethnicity; GRAAD-AC, Genetic Research on Asthma in the African Diaspora-African Caribbean; GRAAD-AA, Genetic Research on Asthma in the African Diaspora-African American; GALA, Genetics of Asthma in Latino Americans; CAMP, Childhood Asthma Management Program; CARE, Childhood Asthma Research and Education Network; and STAMPEED, SNP Typing for Association with Multiple Phenotypes from Existing Epidemiologic Data.

*Summarized across all subjects in the column.

eTable 2. Genome wide meta-analysis results of the top associations with serum total IgE levels stratified by race-ethnic group and asthma status.*

SNP	Alleles†	Asthma status	Parameter estimate (95% CI)‡			
			European American (n=1,564)	African Caribbean and African American (n = 2,469)	Latino (n = 259)	All groups combined (n=4,292)
rs321588	G/A	Asthma	0.14 (0.04,0.24)	0.03 (-0.04,0.10)	0.30 (0.06,0.53)	0.08 (0.02,0.13)
		No asthma	0.15 (-0.03,0.33)	0.10 (0.03,0.18)	---	0.11 (0.04,0.18)
		Both groups	0.14 (0.06,0.23)	0.06 (0.01,0.11)	0.30 (0.06,0.53)	0.09 (0.05,0.14)
rs2363709	G/A	Asthma	-0.23 (-0.40,-0.05)	-0.10 (-0.20,0.01)	-0.04 (-0.34,0.27)	-0.12 (-0.21,-0.04)
		No asthma	-0.08 (-0.41,0.25)	-0.19 (-0.30,-0.08)	---	-0.18 (-0.28,-0.07)
		Both groups	-0.19 (-0.35,-0.04)	-0.14 (-0.21,-0.06)	-0.04 (-0.34,0.27)	-0.14 (-0.21,-0.08)
rs13361473	A/G	Asthma	0.09 (0.00,0.18)	0.08 (0.01,0.14)	0.05 (-0.19,0.29)	0.08 (0.03,0.13)
		No asthma	0.29 (0.14,0.44)	0.08 (0.01,0.16)	---	0.13 (0.06,0.20)
		Both groups	0.15 (0.07,0.22)	0.08 (0.03,0.13)	0.05 (-0.19,0.29)	0.10 (0.06,0.14)
rs9469220	G/A	Asthma	-0.06 (-0.15,0.03)	-0.11 (-0.19,-0.04)	-0.52 (-0.74,-0.30)	-0.12 (-0.17,-0.06)
		No asthma	-0.12 (-0.28,0.04)	-0.03 (-0.10,0.05)	---	-0.04 (-0.12,0.03)
		Both groups	-0.07 (-0.15,0.00)	-0.08 (-0.13,-0.02)	-0.52 (-0.74,-0.30)	-0.09 (-0.13,-0.05)
rs10944017	C/T	Asthma	--§	0.13 (0.05,0.21)	0.15 (-0.15,0.45)	0.13 (0.05,0.21)
		No asthma	--§	0.16 (0.08,0.25)	---	0.16 (0.08,0.25)
		Both groups	--§	0.15 (0.09,0.20)	0.15 (-0.15,0.45)	0.15 (0.09,0.20)
rs7751374	G/A	Asthma	0.13 (0.03,0.23)	0.09 (-0.01,0.18)	0.33 (0.09,0.57)	0.12 (0.06,0.19)
		No asthma	0.11 (-0.05,0.28)	0.22 (0.12,0.32)	---	0.19 (0.11,0.28)
		Both groups	0.13 (0.04,0.21)	0.15 (0.08,0.22)	0.33 (0.09,0.57)	0.15 (0.10,0.2)
rs10124954	T/C	Asthma	0.17 (0.04,0.31)	0.14 (0.06,0.22)	0.11 (-0.29,0.50)	0.15 (0.08,0.22)
		No asthma	0.11 (-0.13,0.35)	0.11 (0.02,0.20)	---	0.11 (0.03,0.19)
		Both groups	0.16 (0.04,0.27)	0.13 (0.07,0.19)	0.11 (-0.29,0.50)	0.13 (0.08,0.19)
rs537526	G/A	Asthma	-0.15 (-0.24,-0.05)	-0.14 (-0.23,-0.06)	-0.07 (-0.32,0.19)	-0.14 (-0.20,-0.08)

		No asthma	-0.12 (-0.28,0.03)	-0.05 (-0.15,0.04)	---	-0.07 (-0.16,0.01)
		Both groups	-0.14 (-0.22,-0.06)	-0.11 (-0.17,-0.04)	-0.07 (-0.32,0.19)	-0.12 (-0.17,-0.07)
rs6499255	A/G	Asthma	0.20 (0.08,0.31)	0.17 (0.07,0.28)	0.21 (-0.05,0.47)	0.19 (0.11,0.26)
		No asthma	0.16 (-0.04,0.36)	0.02 (-0.10,0.14)	---	0.06 (-0.04,0.16)
		Both groups	0.19 (0.09,0.29)	0.10 (0.02,0.18)	0.21 (-0.05,0.47)	0.14 (0.08,0.20)
rs16977747	T/C	Asthma	--§	0.21 (0.09,0.34)	0.23 (-0.09,0.56)	0.21 (0.10,0.33)
		No asthma	--§	0.23 (0.09,0.37)	---	0.23 (0.09,0.37)
		Both groups	--§	0.22 (0.13,0.31)	0.23 (-0.09,0.56)	0.22 (0.13,0.31)

IgE denotes immunoglobulin E and CI, confidence interval.

*Included the results from the following cohorts, the Study of Asthma Phenotypes and Pharmacogenomic Interactions by Race-ethnicity (SAPPHIRE), Genetic Research on Asthma in the African Diaspora-African Caribbean (GRAAD-AC), the Genetic Research on Asthma in the African Diaspora-African American (GRAAD-AA), the Genetics of Asthma in Latino Americans (GALA), Childhood Asthma Management Program (CAMP), the Childhood Asthma Research and Education Network (CARE); the Chicago Asthma Genetics Study (CAG), the National Heart, Lung, and Blood Institute Collaborative Studies of the Genetics of Asthma (CSGA), and the Severe Asthma Research Program (SARP).

†The first allele corresponds to the “reference/other” allele in dbSNP build 125.

‡Parameter estimates for each single nucleotide polymorphism (SNP) were derived from linear regression models of the form $\text{Ln(IgE)} = \beta(\text{SNP}) + \beta(\text{age}) + \beta(\text{sex}) + \beta(\text{principal components})$. An additive genetic model was used for genotype dosage and was coded 0, 1, and 2 (i.e., according to the number of reference alleles present). Principal components were used to account for underlying population structure among African Caribbean, African American, and Latino individuals. Parameter estimates >0 indicate positive association between the number of reference alleles and IgE levels, whereas parameter estimates <0 indicate an inverse association with IgE levels.

§These SNPs were uninformative based on our within group threshold requiring a minor allele frequency $\geq 5\%$.

eTable 3. Replication results for genome wide meta-analysis of serum total IgE levels stratified by race-ethnic group and asthma status.*

SNP	Alleles†	Asthma status	Parameter estimate (95% CI)‡				
			European American (n=1,329)	African Caribbean and African American (n=2,961)	Latino (n=1,477)	All groups – replication set (n=5,767)	All groups – discovery and replication set combined§ (n=10,059)
rs321588	G/A	Asthma	0.17 (-0.16,0.50)	0.03 (-0.07,0.12)	0.03 (-0.13,0.19)	0.04 (-0.04,0.11)	0.06 (0.02,0.11)
		No asthma	0.03 (-0.17,0.23)	-0.04 (-0.21,0.12)	-0.18 (-0.37,0.02)	-0.06 (-0.17,0.04)	0.05 (-0.01,0.11)
		Both groups	0.07 (-0.10,0.24)	0.01 (-0.07,0.09)	-0.06 (-0.18,0.07)	0.00 (-0.06,0.06)	0.06 (0.03,0.10)
rs2363709	G/A	Asthma	-0.44 (-1.02,0.14)	0.05 (-0.08,0.19)	-0.07 (-0.28,0.14)	0.00 (-0.11,0.11)	-0.08 (-0.14,-0.01)
		No asthma	0.31 (-0.09,0.72)	-0.25 (-0.50,0.00)	-0.38 (-0.61,-0.15)	-0.22 (-0.38,-0.07)	-0.20 (-0.29,-0.11)
		Both groups	0.07 (-0.26,0.40)	-0.02 (-0.14,0.10)	-0.21 (-0.37,-0.06)	-0.08 (-0.17,0.02)	-0.12 (-0.17,-0.07)
rs13361473	A/G	Asthma	-0.06 (-0.38,0.26)	0.03 (-0.06,0.12)	0.01 (-0.14,0.17)	0.02 (-0.06,0.10)	0.06 (0.02,0.10)
		No asthma	0.02 (-0.16,0.19)	0.11 (-0.06,0.28)	0.04 (-0.14,0.22)	0.06 (-0.04,0.16)	0.07 (0.01,0.14)
		Both groups	0.00 (-0.15,0.15)	0.05 (-0.03,0.13)	0.02 (-0.09,0.14)	0.03 (-0.03,0.09)	0.08 (0.04,0.11)
rs9469220	G/A	Asthma	-0.13 (-0.44,0.18)	-0.06 (-0.15,0.04)	-0.06 (-0.22,0.09)	-0.06 (-0.14,0.01)	-0.10 (-0.14,-0.06)
		No asthma	-0.15 (-0.34,0.04)	-0.09 (-0.26,0.08)	-0.09 (-0.28,0.10)	-0.11 (-0.21,-0.01)	-0.06 (-0.12,0.01)
		Both groups	-0.15 (-0.31,0.01)	-0.06 (-0.14,0.02)	-0.07 (-0.19,0.05)	-0.08 (-0.14,-0.02)	-0.09 (-0.12,-0.05)
rs10944017	C/T	Asthma	--§	-0.03 (-0.13,0.07)	0.03 (-0.16,0.23)	-0.02 (-0.11,0.07)	0.07 (0.01,0.12)
		No asthma	--§	0.19 (0.01,0.37)	-0.06 (-0.29,0.16)	0.09 (-0.05,0.23)	0.14 (0.07,0.22)
		Both groups	--§	0.02 (-0.07,0.11)	-0.01 (-0.16,0.14)	0.01 (-0.06,0.09)	0.10 (0.05,0.14)
rs7751374	G/A	Asthma	0.08 (-0.25,0.41)	0.05 (-0.06,0.16)	-0.05 (-0.21,0.11)	0.02 (-0.07,0.11)	0.09 (0.03,0.14)
		No asthma	-0.01 (-0.21,0.19)	-0.03 (-0.23,0.16)	-0.21 (-0.39,-0.02)	-0.09 (-0.20,0.02)	0.09 (0.01,0.16)
		Both groups	0.01 (-0.16,0.18)	0.03 (-0.07,0.13)	-0.12 (-0.24,0.00)	-0.02 (-0.09,0.05)	0.09 (0.05,0.13)
rs10124954	T/C	Asthma	-0.53 (-1.06,0.01)	0.05 (-0.06,0.15)	-0.03 (-0.28,0.21)	0.02 (-0.08,0.11)	0.10 (0.05,0.16)
		No asthma	-0.16 (-0.51,0.19)	-0.04 (-0.23,0.16)	-0.10 (-0.39,0.18)	-0.08 (-0.22,0.07)	0.06 (-0.01,0.14)
		Both groups	-0.27 (-0.57,0.02)	0.03 (-0.06,0.12)	-0.06 (-0.25,0.12)	-0.01 (-0.09,0.07)	0.09 (0.05,0.13)
rs537526	G/A	Asthma	-0.30 (-0.64,0.04)	-0.03 (-0.14,0.07)	0.04 (-0.12,0.21)	-0.03 (-0.12,0.05)	-0.10 (-0.15,-0.06)
		No asthma	-0.06 (-0.24,0.12)	0.23 (0.03,0.44)	0.06 (-0.13,0.25)	0.07 (-0.05,0.18)	0.00 (-0.08,0.07)
		Both groups	-0.12 (-0.28,0.05)	0.02 (-0.07,0.11)	0.05 (-0.08,0.18)	0.00 (-0.06,0.07)	-0.08 (-0.12,-0.04)

rs6499255	A/G	Asthma	-0.03 (-0.38,0.32)	0.08 (-0.01,0.17)	0.12 (-0.03,0.28)	0.09 (0.01,0.16)	0.14 (0.08,0.19)
		No asthma	0.03 (-0.16,0.21)	0.00 (-0.17,0.17)	0.14 (-0.05,0.32)	0.05 (-0.05,0.16)	0.04 (-0.04,0.12)
		Both groups	0.01 (-0.15,0.18)	0.06 (-0.02,0.14)	0.13 (0.01,0.25)	0.07 (0.01,0.14)	0.11 (0.07,0.15)
rs16977747	T/C	Asthma	--§	-0.17 (-0.33,-0.01)	0.16 (-0.12,0.43)	-0.09 (-0.22,0.05)	0.09 (0.00,0.18)
		No asthma	--§	0.03 (-0.24,0.29)	0.28 (-0.01,0.57)	0.14 (-0.05,0.34)	0.20 (0.08,0.31)
		Both groups	--§	-0.12 (-0.26,0.02)	0.21 (0.02,0.41)	-0.01 (-0.12,0.10)	0.13 (0.06,0.20)

IgE denotes immunoglobulin E and CI, confidence interval.

*The replication set included the Study of Asthma Phenotypes and Pharmacogenomic Interactions by Race-ethnicity (SAPPHIRE) (i.e., those not in the discovery set), the Study of African Americans, Asthma, Genes & Environments (SAGE - United States), the Gene-Environments and Admixture in Latino Americans cohort (GALA 2), the Study of Asthma Genes and the Environment (SAGE - Canada); the Canadian Asthma Primary Prevention Study (CAPPS), and the Hutterites.

†The first allele corresponds to the “reference/other” allele in dbSNP build 125.

‡Parameter estimates for each single nucleotide polymorphism (SNP) were derived from linear regression models of the form $\text{Ln}(\text{IgE}) = \beta(\text{SNP}) + \beta(\text{age}) + \beta(\text{sex}) + \beta(\text{principal components})$. An additive genetic model was used for genotype dosage and was coded 0, 1, and 2 (i.e., according to the number of reference alleles present). Principal components were used to account for underlying population structure among African Caribbean, African American, and Latino individuals. Parameter estimates >0 indicate positive association between the number of reference alleles and IgE levels, whereas parameter estimates <0 indicate an inverse association with IgE levels.

§The discovery set included the Study of Asthma Phenotypes and Pharmacogenomic Interactions by Race-ethnicity (SAPPHIRE), Genetic Research on Asthma in the African Diaspora-African Caribbean (GRAAD-AC), the Genetic Research on Asthma in the African Diaspora-African American (GRAAD-AA), the Genetics of Asthma in Latino Americans (GALA), Childhood Asthma Management Program (CAMP), the Childhood Asthma Research and Education Network (CARE); the Chicago Asthma Genetics Study (CAG), the National Heart, Lung, and Blood Institute Collaborative Studies of the Genetics of Asthma (CSGA), and the Severe Asthma Research Program (SARP).

|| These SNPs were uninformative based on our within group threshold requiring a minor allele frequency $\geq 5\%$.

eTable 4. Replication results for the genome wide meta-analysis of serum total IgE levels stratified by race-ethnic group and test for heterogeneity between groups.

SNP	Chromosome	Nearest gene	European American		African Caribbean and African American		Latino		Test for heterogeneity between groups
			N	P-value	N	P-value	N	P-value	
rs321588	1	PTBP2	1329	0.4129	2617	0.8124	1407	0.3737	0.4714
rs2363709	3	SUCLG2	798	0.5518	2787	0.8460	1477	0.0093	0.0663
rs13361473	5	MAT2B	1329	0.6795	2783	0.2455	1397	0.6848	0.6064
rs9469220	6	HLA-DQB1	1327	0.0592	2776	0.1084	1403	0.2255	0.8046
rs10944017	6	TBX18	--	--	2777	0.7110	1387	0.9087	0.7585
rs7751374	6	SOBP	1322	0.6858	2785	0.5180	1392	0.0550	0.1244
rs10124954	9	TLE4	1004	0.1098	2767	0.5325	1388	0.5034	0.2187
rs537526	11	CCDC82	1321	0.3519	2785	0.6422	1393	0.4353	0.4449
rs6499255	16	WWP2	1329	0.9524	2785	0.1110	1477	0.0308	0.3532
rs16977747	17	LINC00469	--	--	2774	0.0865	1407	0.0373	0.0071

SNP denotes single nucleotide polymorphism and IgE, immunoglobulin E.

eTable 5. Replication results for the genome wide meta-analysis of serum total IgE levels stratified by asthma status and test for heterogeneity between groups.

SNP	Chromosome	Nearest gene	Patients with asthma		Patients without asthma		Test for heterogeneity between groups
			N	P-value	N	P-value	
rs321588	1	PTBP2	3180	0.3840	2173	0.3854	0.2211
rs2363709	3	SUCLG2	3311	0.9320	1751	0.0346	0.0971
rs13361473	5	MAT2B	3343	0.5986	2166	0.5063	0.8512
rs9469220	6	HLA-DQB1	3340	0.0884	2166	0.0312	0.5424
rs10944017	6	TBX18	2976	0.6772	1188	0.2708	0.2488
rs7751374	6	SOBP	3337	0.5241	2162	0.2002	0.1623
rs10124954	9	TLE4	3267	0.9640	1892	0.2972	0.3915
rs537526	11	CCDC82	3345	0.4099	2154	0.1460	0.0990
rs6499255	16	WWP2	3390	0.0352	2201	0.3210	0.5833
rs16977747	17	LINC00469	2984	0.2270	1197	0.1197	0.0499

SNP denotes single nucleotide polymorphism and IgE, immunoglobulin E.

eTable 6. Results from the meta-analysis for single nucleotide polymorphisms located within genes previously associated with serum total IgE levels.*

Gene	RS Number	Chr	Position	Allele		Risk Allele	Overall			European American			African American			Latino		
				1	2		N	Z score	P-value	N	Z score	P-value	N	Z score	P-value	N	Z score	P-value
DARC	rs16841832	1	159154312	A	G	G	3655	-0.402	0.688	1563	-1.239	0.2154	1833	0.856	0.3922	259	-0.742	0.4582
DARC	rs862989	1	159161279	A	G	A	4278	0.573	0.5667	1563	1.122	0.2619	2456	-0.612	0.5405	259	1.457	0.1452
DARC	rs4656165	1	159162024	C	G	G	4278	-2.355	0.0185	1563	-2.65	0.008037	2456	-0.419	0.675	259	-1.77	0.07665
DARC	rs862991	1	159164364	A	G	G	4278	-1.241	0.2147	1563	-1.187	0.2351	2456	-0.556	0.5781	259	-0.413	0.6796
DARC	rs2814755	1	159165610	T	C	T	2671	0.24	0.8101	NA	NA	NA	2456	0.818	0.4131	215	-1.919	0.055
DARC	rs2746043	1	159167192	A	G	A	2671	0.236	0.8138	NA	NA	NA	2456	0.82	0.4124	215	-1.94	0.0524
DARC	rs862996	1	159168609	T	C	C	4278	-0.897	0.3696	1563	-1.212	0.2255	2456	0.302	0.7625	259	-1.6	0.1097
DARC	rs3027001	1	159169463	T	C	C	3918	-2.581	0.009854	1563	-2.685	0.00725	2096	-0.506	0.6128	259	-2.003	0.04523
DARC	rs3027012	1	159174123	T	C	T	1822	2.004	0.0451	1563	1.52	0.1284	NA	NA	NA	259	1.58	0.1142
DARC	rs863002	1	159174920	T	C	C	3655	-1.627	0.1038	1563	-2.776	0.005501	1833	0.41	0.6817	259	-0.383	0.7018
DARC	rs12075	1	159175354	A	G	G	4278	-1.879	0.06023	1563	-1.461	0.144	2456	-0.905	0.3653	259	-1.26	0.2078
DARC	rs13962	1	159175527	A	G	G	1822	-3.589	0.0003318	1563	-3.107	0.001893	NA	NA	NA	259	-1.888	0.05902
DARC	rs3027031	1	159178273	C	G	G	4278	-0.24	0.8104	1563	-2.557	0.01057	2456	1.379	0.168	259	1.06	0.2892
DARC	rs3027040	1	159181492	A	C	C	2671	-1.312	0.1895	NA	NA	NA	2456	-0.822	0.4113	215	-1.848	0.06461
DARC	rs3027041	1	159181560	T	C	T	2715	1.29	0.1969	NA	NA	NA	2456	0.629	0.5292	259	2.24	0.02506
DARC	rs3027044	1	159181869	T	C	C	4278	-0.442	0.6588	1563	-1.148	0.251	2456	0.523	0.6012	259	-0.584	0.5592
DARC	rs3027048	1	159183713	T	C	T	4278	1.476	0.14	1563	1.242	0.2141	2456	0.319	0.7496	259	1.963	0.04967
DARC	rs3027051	1	159184306	A	C	A	4278	1.363	0.1729	1563	0.004	0.9966	2456	1.587	0.1125	259	0.641	0.5215
DARC	rs3027061	1	159186600	A	G	G	4278	-2.297	0.02163	1563	-1.402	0.1609	2456	-1.305	0.192	259	-1.873	0.06108
DARC	rs3027063	1	159186781	T	C	T	4278	1.677	0.09351	1563	1.369	0.1711	2456	0.463	0.6436	259	2.029	0.04245
DARC	rs11265145	1	159187435	A	G	G	2715	-1.967	0.04917	NA	NA	NA	2456	-1.392	0.164	259	-2.083	0.03725
DARC	rs17666424	1	159187530	A	G	A	2080	1.631	0.1029	1563	1.528	0.1265	258	-0.751	0.4527	259	1.618	0.1058
DARC	rs3027077	1	159191648	T	C	T	1822	0.501	0.6163	1563	0.204	0.8382	NA	NA	NA	259	0.827	0.4081
DARC	rs863011	1	159194172	T	C	C	4278	-1.431	0.1523	1563	-1.358	0.1743	2456	-0.623	0.5332	259	-0.561	0.5746
DARC	rs10489848	1	159194412	A	C	A	3533	0.388	0.6984	1563	0.244	0.8069	1711	0.092	0.9269	259	0.595	0.5518
FCERA1	rs2511212	1	159244893	T	C	C	3368	-1.742	0.08154	1563	-1.033	0.3015	1546	-1.398	0.1622	259	-0.328	0.7429
FCERA1	rs3893415	1	159244974	A	C	C	2671	-0.342	0.7326	NA	NA	NA	2456	-0.45	0.653	215	0.315	0.7526
FCERA1	rs2494260	1	159246185	T	C	T	3368	1.778	0.07533	1563	1.133	0.2573	1546	1.337	0.1813	259	0.364	0.7156
FCERA1	rs6670082	1	159247518	A	T	T	2671	-0.332	0.7396	NA	NA	NA	2456	-0.44	0.66	215	0.315	0.7526
FCERA1	rs6673514	1	159247722	T	C	T	2671	0.33	0.7412	NA	NA	NA	2456	0.438	0.6616	215	-0.315	0.7526
FCERA1	rs16841956	1	159248132	T	C	C	3345	-1.048	0.2945	674	-1.557	0.1195	2456	-0.292	0.7706	215	-0.393	0.6942
FCERA1	rs12096257	1	159248158	T	C	T	2671	0.325	0.745	NA	NA	NA	2456	0.432	0.6654	215	-0.315	0.7526
FCERA1	rs12086871	1	159248311	A	G	A	2671	0.325	0.7455	NA	NA	NA	2456	0.446	0.6553	215	-0.365	0.7149
FCERA1	rs10489850	1	159248415	C	G	G	2671	-0.314	0.7537	NA	NA	NA	2456	-0.421	0.6741	215	0.315	0.7525
FCERA1	rs12097396	1	159248522	A	C	A	3604	0.726	0.4676	889	0.496	0.62	2456	0.409	0.6829	259	0.533	0.594
FCERA1	rs10489851	1	159248547	T	C	C	2671	-0.311	0.7557	NA	NA	NA	2456	-0.418	0.6761	215	0.315	0.7525
FCERA1	rs10489852	1	159248574	T	C	T	2671	0.309	0.7571	NA	NA	NA	2456	0.416	0.6775	215	-0.315	0.7525
FCERA1	rs10489853	1	159248815	T	C	T	2671	0.296	0.7671	NA	NA	NA	2456	0.402	0.6876	215	-0.315	0.7525

FCERA1	rs10489854	1	159248859	T	C	C	3966	-0.789	0.4301	1251	1.477	0.1397	2456	-2.177	0.02947	259	0.371	0.7108
FCERA1	rs16841967	1	159249066	T	C	C	3604	-1.441	0.1496	889	0.507	0.6124	2456	-2.173	0.02975	259	0.379	0.7044
FCERA1	rs12087219	1	159249138	A	G	G	3604	-0.299	0.7647	889	0.505	0.6139	2456	-0.715	0.4747	259	0.15	0.8809
FCERA1	rs10489855	1	159249187	C	G	C	1104	0.682	0.495	889	0.499	0.6176	NA	NA	NA	215	0.531	0.5954
FCERA1	rs16841970	1	159250860	T	G	G	2671	-0.274	0.7837	NA	NA	NA	2456	-0.379	0.7046	215	0.314	0.7535
FCERA1	rs2494261	1	159251294	A	G	G	3368	-1.77	0.07669	1563	-1.062	0.2883	1546	-1.407	0.1595	259	-0.339	0.735
FCERA1	rs2494262	1	159253672	A	C	C	4278	-0.769	0.4421	1563	-1.906	0.0567	2456	0.803	0.4217	259	-0.917	0.3591
FCERA1	rs2427836	1	159254764	T	C	T	4278	1.105	0.269	1563	2.4	0.0164	2456	-0.919	0.358	259	1.427	0.1535
FCERA1	rs2511214	1	159254866	T	G	G	4278	-0.778	0.4367	1563	-1.891	0.05863	2456	0.785	0.4327	259	-0.932	0.3514
FCERA1	rs2494263	1	159255794	A	G	G	3110	-1.661	0.09671	1563	-1.521	0.1282	1288	-0.645	0.5189	259	-0.58	0.5617
FCERA1	rs12135235	1	159259029	T	G	T	1953	0.506	0.613	674	1.263	0.2066	1064	-0.526	0.5992	215	0.458	0.6473
FCERA1	rs2247584	1	159259680	T	G	T	4278	1.122	0.2618	1563	2.423	0.01541	2456	-0.915	0.3604	259	1.426	0.1538
FCERA1	rs12134212	1	159260463	T	G	G	1953	-0.502	0.616	674	-1.26	0.2075	1064	0.53	0.5962	215	-0.459	0.6465
FCERA1	rs12565775	1	159262155	A	C	C	4278	-0.064	0.949	1563	0.275	0.7835	2456	-0.293	0.7697	259	-0.033	0.9733
FCERA1	rs12134820	1	159263595	T	G	T	1953	0.473	0.636	674	1.213	0.2251	1064	-0.531	0.5955	215	0.46	0.6457
FCERA1	rs12135788	1	159264543	T	G	T	4278	0.176	0.86	1563	0.264	0.7918	2456	0.054	0.9567	259	-0.099	0.9213
FCERA1	rs2427824	1	159265062	T	C	T	3368	1.866	0.062	1563	1.438	0.1505	1546	1.085	0.2779	259	0.547	0.5847
FCERA1	rs16841987	1	159265266	A	G	A	4278	2.289	0.02206	1563	1.767	0.07723	2456	0.997	0.3187	259	1.893	0.05833
FCERA1	rs3845625	1	159265876	T	C	T	1971	1.873	0.06112	1563	1.767	0.07725	149	-1.238	0.2156	259	1.765	0.07762
FCERA1	rs12136904	1	159265892	T	C	T	1953	0.461	0.6449	674	1.208	0.2271	1064	-0.544	0.5867	215	0.46	0.6458
FCERA1	rs2427825	1	159266066	T	C	T	3517	2.09	0.03666	1563	1.46	0.1442	1695	1.399	0.1618	259	0.534	0.5932
FCERA1	rs12140357	1	159266171	A	G	G	1953	-0.457	0.6476	674	-1.206	0.2278	1064	0.547	0.5843	215	-0.46	0.6458
FCERA1	rs2494264	1	159266838	A	T	T	4278	-1.189	0.2345	1563	-2.529	0.01145	2456	0.913	0.3614	259	-1.43	0.1527
FCERA1	rs7548864	1	159267255	A	G	G	4278	-0.158	0.8748	1563	-0.43	0.6669	2456	0.047	0.9624	259	0.272	0.7858
FCERA1	rs16841988	1	159271377	A	C	A	1555	0.418	0.6759	NA	NA	NA	1340	-0.084	0.9331	215	1.334	0.1822
FCERA1	rs2251746	1	159272060	T	C	T	4278	2.688	0.00718	1563	2.889	0.003866	2456	0.43	0.6669	259	2.504	0.01228
FCERA1	rs12119226	1	159272764	T	C	T	3655	0.084	0.9332	1563	-0.532	0.5948	1833	0.363	0.7168	259	0.656	0.5117
FCERA1	rs2427828	1	159273041	A	G	G	3517	-2.158	0.03092	1563	-1.593	0.1112	1695	-1.412	0.1578	259	-0.427	0.6694
FCERA1	rs16841997	1	159273372	T	C	T	3655	0.076	0.9391	1563	-0.533	0.594	1833	0.353	0.7238	259	0.656	0.5116
FCERA1	rs6656586	1	159275015	A	G	G	2671	-2.086	0.03702	NA	NA	NA	2456	-1.911	0.05597	215	-0.891	0.3729
FCERA1	rs2494265	1	159275274	A	T	A	3517	2.128	0.03337	1563	1.566	0.1173	1695	1.393	0.1636	259	0.428	0.6685
FCERA1	rs2269718	1	159275706	A	G	A	1148	0.582	0.5607	889	-0.046	0.9631	NA	NA	NA	259	1.311	0.19
FCERA1	rs2252226	1	159276153	T	C	C	4278	-2.747	0.006023	1563	-2.745	0.006046	2456	-0.944	0.3452	259	-1.512	0.1306
FCERA1	rs2269719	1	159276231	T	C	C	1148	-0.582	0.5604	889	0.047	0.9622	NA	NA	NA	259	-1.314	0.189
FCERA1	rs7549785	1	159277868	A	G	A	1971	1.807	0.07071	1563	1.669	0.09512	149	-1.177	0.2393	259	1.778	0.07536
FCERA1	rs2494250	1	159278251	C	G	G	3517	-2.074	0.03812	1563	-1.467	0.1424	1695	-1.411	0.1582	259	-0.428	0.669
FCERA1	rs16842010	1	159279994	T	C	C	1822	-1.601	0.1094	1563	-1.175	0.2401	NA	NA	NA	259	-1.361	0.1735
FCERA1	rs2494251	1	159281151	A	G	G	4278	-0.742	0.4582	1563	-1.935	0.05295	2456	1.042	0.2975	259	-1.468	0.142
FCERA1	rs2427829	1	159282011	A	G	A	3254	1.224	0.2208	1563	1.831	0.06704	1432	-0.808	0.4191	259	1.741	0.08177
FCERA1	rs11265165	1	159283746	T	C	C	4278	-1.109	0.2674	1563	-0.091	0.9277	2456	-1.237	0.2161	259	-0.476	0.6342
FCERA1	rs7522607	1	159285991	T	C	C	1971	-1.946	0.05161	1563	-1.701	0.08901	149	1.178	0.2386	259	-2.085	0.03703
FCERA1	rs10489856	1	159286245	T	C	T	3655	0.046	0.963	1563	0.165	0.8687	1833	-0.213	0.8312	259	0.335	0.7374
FCERA1	rs12061273	1	159288373	A	G	A	4278	0.676	0.4989	1563	-0.237	0.8124	2456	1.007	0.314	259	0.231	0.8172
FCERA1	rs12062367	1	159288384	T	G	T	2671	2.01	0.04441	NA	NA	NA	2456	1.833	0.06686	215	0.891	0.3728

FCERA1	rs11265167	1	159289320	T	G	G	2671	-2.006	0.04481	NA	NA	NA	2456	-1.829	0.06741	215	-0.891	0.3731
FCERA1	rs4269772	1	159290661	T	C	C	2591	-1.202	0.2295	1563	-0.478	0.6326	769	-1.318	0.1873	259	-0.354	0.7231
FCERA1	rs12724895	1	159291045	A	T	T	4278	-0.735	0.4626	1563	-1.987	0.04694	2456	1.092	0.2749	259	-1.467	0.1424
FCERA1	rs4282816	1	159292850	A	G	G	4278	-0.194	0.846	1563	-1.792	0.07318	2456	1.47	0.1417	259	-0.913	0.3611
RAD50/IL13	rs739719	5	131872865	A	C	C	4278	-0.652	0.5142	1563	-1.937	0.05275	2456	0.632	0.5277	259	0.162	0.8711
RAD50/IL13	rs739718	5	131873073	T	C	T	4234	2.767	0.005654	1563	1.668	0.09523	2456	2.225	0.02608	215	0.261	0.7937
RAD50/IL13	rs2069812	5	131879916	A	G	G	4278	-0.535	0.5929	1563	-0.588	0.5563	2456	0.042	0.9663	259	-0.858	0.3911
RAD50/IL13	rs12652920	5	131885240	C	G	C	4015	1.971	0.04874	1563	2.366	0.01799	2193	1.095	0.2737	259	-1.237	0.2162
RAD50/IL13	rs2706338	5	131895849	T	C	T	4278	2.388	0.01693	1563	2.355	0.01851	2456	1.684	0.09224	259	-1.265	0.206
RAD50/IL13	rs2244012	5	131901225	A	G	G	4278	-3.168	0.001533	1563	-2.38	0.01733	2456	-2.779	0.005449	259	1.527	0.1267
RAD50/IL13	rs2299015	5	131901497	T	G	G	4278	-1.841	0.06558	1563	-2.492	0.01271	2456	-0.826	0.4088	259	1.182	0.2374
RAD50/IL13	rs2706347	5	131905117	T	G	T	4278	2.729	0.006359	1563	2.51	0.01209	2456	2.169	0.03006	259	-1.755	0.07924
RAD50/IL13	rs2706348	5	131905810	A	G	A	4278	3.224	0.001262	1563	2.509	0.0121	2456	2.752	0.005929	259	-1.533	0.1254
RAD50/IL13	rs17166050	5	131915213	A	G	A	4278	2.705	0.006828	1563	2.545	0.01094	2456	1.906	0.0567	259	-1.125	0.2605
RAD50/IL13	rs2522403	5	131915317	T	C	C	4278	-3.545	0.0003925	1563	-2.543	0.01098	2456	-3.178	0.001483	259	1.626	0.1039
RAD50/IL13	rs2522399	5	131916111	C	G	C	2671	1.197	0.2312	NA	NA	NA	2456	1.407	0.1593	215	-0.537	0.5913
RAD50/IL13	rs2246176	5	131917350	A	G	G	4278	-3.535	0.0004076	1563	-2.531	0.01136	2456	-3.171	0.001517	259	1.618	0.1057
RAD50/IL13	rs2252775	5	131918444	T	G	G	4278	-2.651	0.008029	1563	-2.519	0.01177	2456	-1.852	0.06408	259	1.116	0.2644
RAD50/IL13	rs2706357	5	131921958	T	C	C	2671	-1.852	0.06396	NA	NA	NA	2456	-1.955	0.05063	215	0.077	0.9387
RAD50/IL13	rs2706360	5	131925113	A	G	G	2671	-1.853	0.06384	NA	NA	NA	2456	-1.955	0.05053	215	0.077	0.9387
RAD50/IL13	rs2706364	5	131926798	A	G	A	2671	1.862	0.06257	NA	NA	NA	2456	1.966	0.04931	215	-0.081	0.9357
RAD50/IL13	rs10463893	5	131928039	T	C	C	4278	-2.789	0.005285	1563	-2.498	0.01248	2456	-2.123	0.03374	259	1.34	0.1803
RAD50/IL13	rs2706366	5	131928652	A	G	G	2671	-1.854	0.06379	NA	NA	NA	2456	-1.943	0.05197	215	0.035	0.9721
RAD50/IL13	rs2897443	5	131929594	T	G	T	4278	2.599	0.00936	1563	2.492	0.0127	2456	1.807	0.07077	259	-1.125	0.2605
RAD50/IL13	rs17622991	5	131932753	A	G	A	4278	2.218	0.02659	1563	2.555	0.01061	2456	1.358	0.1744	259	-1.448	0.1477
RAD50/IL13	rs2706370	5	131933016	A	C	C	4278	-3.472	0.000516	1563	-2.606	0.009159	2456	-3.022	0.00251	259	1.596	0.1104
RAD50/IL13	rs2706372	5	131935477	T	C	T	4278	3.547	0.0003896	1563	2.52	0.01175	2456	3.193	0.00141	259	-1.605	0.1085
RAD50/IL13	rs12187537	5	131939904	T	G	G	4278	-2.373	0.01763	1563	-2.529	0.01144	2456	-1.514	0.1299	259	1.231	0.2185
RAD50/IL13	rs2522394	5	131944129	A	G	A	4278	3.534	0.0004091	1563	2.485	0.01295	2456	3.203	0.001362	259	-1.604	0.1087
RAD50/IL13	rs10520114	5	131948891	A	G	G	4278	-2.614	0.008942	1563	-2.483	0.01304	2456	-1.913	0.05579	259	1.364	0.1726
RAD50/IL13	rs2301713	5	131951996	T	C	C	4278	-3.742	0.0001827	1563	-2.503	0.01233	2456	-3.407	0.0006561	259	1.433	0.1518
RAD50/IL13	rs6596086	5	131952222	T	C	C	4278	-3.547	0.0003901	1563	-2.451	0.01426	2456	-3.247	0.001166	259	1.605	0.1085
RAD50/IL13	rs2106984	5	131953066	A	T	A	4278	3.554	0.000379	1563	2.456	0.01405	2456	3.253	0.001141	259	-1.606	0.1084
RAD50/IL13	rs7449456	5	131953427	T	C	T	4278	3.811	0.0001386	1563	2.459	0.01392	2456	3.562	0.0003683	259	-1.523	0.1278
RAD50/IL13	rs17772583	5	131953510	A	G	A	3264	0.523	0.6007	1563	0.548	0.5839	1442	-0.259	0.7954	259	1.124	0.2608
RAD50/IL13	rs11955168	5	131956907	T	C	C	1065	-2.297	0.02159	NA	NA	NA	806	-3.345	0.0008218	259	1.243	0.214
RAD50/IL13	rs3798135	5	131965109	T	C	T	4278	3.933	8.38E-05	1563	2.494	0.01265	2456	3.712	0.0002052	259	-1.573	0.1158
RAD50/IL13	rs3798134	5	131965179	A	G	A	4278	3.521	0.0004295	1563	2.496	0.01257	2456	3.245	0.001175	259	-1.812	0.06999
RAD50/IL13	rs6596087	5	131968609	A	G	A	4278	3.481	0.0004988	1563	2.496	0.01257	2456	3.194	0.001401	259	-1.819	0.06895
RAD50/IL13	rs6871536	5	131969874	T	C	C	4278	-3.835	0.0001254	1563	-2.496	0.01257	2456	-3.559	0.0003722	259	1.503	0.1327
RAD50/IL13	rs2237060	5	131970885	T	G	T	4278	1.627	0.1036	1563	1.683	0.09243	2456	0.93	0.3522	259	-0.385	0.7006
RAD50/IL13	rs12653750	5	131971902	T	C	T	4278	2.308	0.02099	1563	2.641	0.008268	2456	1.272	0.2034	259	-1.023	0.3062
RAD50/IL13	rs2040703	5	131972258	C	G	G	4278	-3.69	0.0002245	1563	-2.639	0.008315	2456	-3.29	0.001003	259	1.617	0.1058
RAD50/IL13	rs2040704	5	131973177	A	G	G	4278	-3.383	0.0007176	1563	-2.634	0.00843	2456	-2.885	0.003908	259	1.609	0.1076

RAD50/IL13	rs7737470	5	131974063	A	T	A	4278	2.3	0.02142	1563	2.597	0.009399	2456	1.51	0.1311	259	-1.68	0.09292
RAD50/IL13	rs2240032	5	131977127	T	C	T	4278	2.27	0.02321	1563	2.596	0.009431	2456	1.227	0.2197	259	-0.931	0.3516
RAD50/IL13	rs2158177	5	131984058	A	G	G	4278	-2.771	0.005587	1563	-3.3	0.0009661	2456	-1.403	0.1607	259	1.164	0.2443
RAD50/IL13	rs3091307	5	131989136	A	G	G	4278	-3.724	0.0001961	1563	-2.653	0.00798	2456	-3.318	0.0009057	259	1.601	0.1094
RAD50/IL13	rs2069744	5	131994669	T	C	C	2671	-0.606	0.5443	NA	NA	NA	2456	-0.399	0.6899	215	-0.789	0.4302
RAD50/IL13	rs1295686	5	131995843	T	C	T	4278	3.852	0.0001172	1563	3.663	0.0002492	2456	2.073	0.03819	259	0.274	0.7844
RAD50/IL13	rs20541	5	131995964	A	G	A	4278	2.247	0.02462	1563	3.645	0.0002672	2456	-0.133	0.8945	259	0.587	0.5571
RAD50/IL13	rs1295685	5	131996445	A	G	A	4278	2.589	0.009616	1563	3.67	0.000243	2456	0.283	0.7771	259	0.637	0.5241
RAD50/IL13	rs848	5	131996500	A	C	A	4278	3.78	0.0001568	1563	3.637	0.0002756	2456	2.086	0.03699	259	0.004	0.9966
RAD50/IL13	rs847	5	131996669	T	C	T	4278	1.375	0.1692	1563	3.735	0.000188	2456	-1.424	0.1546	259	0.797	0.4256
RAD50/IL13	rs2069757	5	131998413	A	G	A	1971	2.984	0.002842	1563	3.367	0.0007612	149	0.409	0.6825	259	-0.348	0.728
RAD50/IL13	rs1295683	5	131998876	A	G	A	4278	0.527	0.5983	1563	0.959	0.3378	2456	-0.351	0.7256	259	0.867	0.3859
RAD50/IL13	rs2243204	5	131999494	T	C	T	4278	3.392	0.0006936	1563	3.432	0.000599	2456	2.09	0.03665	259	-1.08	0.2802
RAD50/IL13	rs2243208	5	132001151	A	G	G	4278	-1.254	0.21	1563	-3.405	0.0006625	2456	1.018	0.3086	259	0.134	0.8937
RAD50/IL13	rs2243210	5	132001386	A	G	A	4278	0.724	0.4689	1563	2.894	0.003799	2456	-1.499	0.1339	259	0.449	0.6532
RAD50/IL13	rs2243211	5	132001422	A	C	A	4278	0.838	0.4022	1563	2.868	0.004127	2456	-1.365	0.1722	259	0.561	0.5745
RAD50/IL13	rs2243217	5	132001933	A	T	T	4278	-1.153	0.249	1563	-2.949	0.003183	2456	0.897	0.3696	259	-0.202	0.8399
RAD50/IL13	rs2243218	5	132002024	A	G	A	4278	1.862	0.06264	1563	2.948	0.003199	2456	0.208	0.8348	259	-0.318	0.7508
RAD50/IL13	rs2243219	5	132002125	A	G	G	4278	-3.399	0.0006752	1563	-2.924	0.003457	2456	-2.316	0.02057	259	0.498	0.6186
RAD50/IL13	rs2243300	5	132004086	T	G	T	1822	2.81	0.004952	1563	2.865	0.004166	NA	NA	NA	259	0.415	0.6785
RAD50/IL13	rs762534	5	132004756	A	C	A	1822	3.128	0.001763	1563	3.021	0.002521	NA	NA	NA	259	0.874	0.382
RAD50/IL13	rs2243248	5	132008644	T	G	G	4278	-1.448	0.1477	1563	-2.461	0.01384	2456	-0.01	0.9922	259	0.193	0.8466
RAD50/IL13	rs2070874	5	132009710	T	C	C	4278	-3.261	0.00111	1563	-0.471	0.6378	2456	-3.886	0.0001021	259	-0.132	0.8951
RAD50/IL13	rs734244	5	132010726	T	C	C	4278	-3.24	0.001197	1563	-0.471	0.6375	2456	-3.886	0.000102	259	-0.043	0.9657
RAD50/IL13	rs2227284	5	132012725	T	G	T	4278	0.858	0.3907	1563	1.544	0.1226	2456	0.177	0.8597	259	-0.848	0.3962
RAD50/IL13	rs2227282	5	132013179	C	G	C	4278	0.857	0.3914	1563	1.549	0.1214	2456	0.172	0.8636	259	-0.851	0.3949
RAD50/IL13	rs2243263	5	132013299	C	G	C	4278	3.432	0.000599	1563	3.119	0.001814	2456	2.167	0.03021	259	-0.388	0.6979
RAD50/IL13	rs2243266	5	132013789	A	G	G	4278	-3.125	0.001775	1563	-0.483	0.6294	2456	-3.694	0.0002209	259	-0.142	0.8869
RAD50/IL13	rs2243267	5	132013886	C	G	G	4278	-3.255	0.001135	1563	-0.533	0.5938	2456	-3.825	0.0001308	259	-0.138	0.89
RAD50/IL13	rs2243268	5	132013963	A	C	A	4278	3.07	0.002137	1563	0.498	0.6183	2456	3.689	0.0002255	259	-0.103	0.9176
RAD50/IL13	rs2243270	5	132014109	A	G	A	4278	0.752	0.4521	1563	0.661	0.5087	2456	0.143	0.8863	259	0.992	0.3211
RAD50/IL13	rs2243274	5	132014832	A	G	G	4278	-1.628	0.1036	1563	-0.668	0.5044	2456	-1.38	0.1677	259	-0.727	0.4673
RAD50/IL13	rs2243282	5	132016554	A	C	C	4278	-3.277	0.001048	1563	-0.537	0.5912	2456	-3.851	0.0001176	259	-0.141	0.8878
RAD50/IL13	rs2243283	5	132016593	C	G	C	2671	3.434	0.0005955	NA	NA	NA	2456	3.356	0.0007894	215	0.758	0.4484
RAD50/IL13	rs2243288	5	132017944	A	G	A	4278	1.907	0.05656	1563	0.69	0.4903	2456	1.747	0.08066	259	0.675	0.4996
RAD50/IL13	rs2243289	5	132018132	A	G	A	4278	3.144	0.001667	1563	0.543	0.5873	2456	3.75	0.0001771	259	-0.102	0.9185
RAD50/IL13	rs2243290	5	132018169	A	C	C	4278	-3.298	0.0009751	1563	-0.545	0.586	2456	-3.872	0.000108	259	-0.141	0.8879
RAD50/IL13	rs2243291	5	132018983	C	G	G	4278	-1.906	0.05665	1563	-0.681	0.4956	2456	-1.755	0.07929	259	-0.669	0.5038
RAD50/IL13	rs4426908	5	132022718	C	G	C	4278	0.935	0.3499	1563	1.587	0.1125	2456	0.246	0.8057	259	-0.857	0.3915
RAD50/IL13	rs2406539	5	132023276	A	T	A	4278	0.327	0.7434	1563	-1.785	0.07427	2456	1.62	0.1053	259	0.728	0.4667
RAD50/IL13	rs11747814	5	132024166	T	C	T	4278	0.302	0.7625	1563	-1.789	0.07357	2456	1.589	0.112	259	0.73	0.4654
RAD50/IL13	rs11242123	5	132025487	A	T	A	4278	1.263	0.2066	1563	0.5	0.617	2456	1.114	0.2654	259	0.476	0.6343
RAD50/IL13	rs11242126	5	132030414	A	T	T	4278	-1.369	0.171	1563	-0.469	0.6389	2456	-1.295	0.1952	259	-0.422	0.6731
RAD50/IL13	rs17690965	5	132030667	C	G	C	4278	0.407	0.6839	1563	1.758	0.07877	2456	-0.598	0.5495	259	-0.821	0.4118

RAD50/IL13	rs2023823	5	132032806	A	G	A	4278	0.355	0.7228	1563	1.674	0.09404	2456	-0.598	0.5496	259	-0.829	0.4071
RAD50/IL13	rs6883504	5	132033122	A	G	A	4278	2.419	0.01554	1563	2.883	0.00394	2456	1.175	0.2399	259	-0.868	0.3852
RAD50/IL13	rs2237059	5	132033612	T	C	C	4278	-0.109	0.9129	1563	-0.5	0.6171	2456	0.437	0.6619	259	-0.563	0.5735
RAD50/IL13	rs2023822	5	132034346	A	G	A	4278	2.402	0.01628	1563	2.881	0.003958	2456	1.155	0.2481	259	-0.871	0.3836
RAD50/IL13	rs1468216	5	132036252	T	C	T	4278	1.998	0.04575	1563	2.905	0.003668	2456	0.554	0.5797	259	-0.724	0.4692
RAD50/IL13	rs1468215	5	132036489	A	T	A	4278	0.612	0.5402	1563	1.847	0.06469	2456	-0.372	0.7097	259	-0.903	0.3666
RAD50/IL13	rs3756755	5	132036567	A	C	A	4278	2.217	0.02663	1563	2.977	0.002909	2456	0.784	0.4331	259	-0.718	0.4729
RAD50/IL13	rs3213639	5	132038199	T	C	C	4278	-0.613	0.5399	1563	-1.848	0.06457	2456	0.37	0.7111	259	0.909	0.3635
HLA-G	rs2523409	6	29775662	A	G	A	4278	1.918	0.0551	1563	1.161	0.2458	2456	1.329	0.1839	259	0.853	0.3938
HLA-G	rs3998759	6	29775904	T	G	T	2671	1.202	0.2294	NA	NA	NA	2456	0.887	0.375	215	1.237	0.216
HLA-G	rs2735030	6	29775950	A	C	A	4278	0.937	0.3487	1563	1.161	0.2457	2456	-0.007	0.9942	259	0.979	0.3275
HLA-G	rs1632977	6	29775965	T	C	T	4278	1.655	0.09782	1563	1.604	0.1088	2456	0.46	0.6454	259	1.371	0.1702
HLA-G	rs1736971	6	29776322	T	G	T	4278	2.633	0.008457	1563	1.699	0.0894	2456	1.842	0.06544	259	0.856	0.3918
HLA-G	rs1736969	6	29776390	A	T	T	4278	-2.616	0.008894	1563	-1.7	0.08911	2456	-1.818	0.06901	259	-0.856	0.3918
HLA-G	rs1632973	6	29777171	T	C	T	4278	2.634	0.008428	1563	1.701	0.089	2456	1.842	0.06547	259	0.856	0.3918
HLA-G	rs4098859	6	29777199	A	G	A	2671	0.294	0.769	NA	NA	NA	2456	0.515	0.6064	215	-0.706	0.4799
HLA-G	rs1632972	6	29777346	T	G	T	4278	0.718	0.473	1563	0.168	0.8662	2456	0.635	0.5251	259	0.546	0.5851
HLA-G	rs2735029	6	29777585	A	C	A	4278	2.614	0.008956	1563	1.706	0.08807	2456	1.811	0.07017	259	0.856	0.3918
HLA-G	rs1632971	6	29777911	T	C	T	4278	0.723	0.4697	1563	0.17	0.8646	2456	0.641	0.5217	259	0.546	0.5851
HLA-G	rs1736963	6	29777983	A	G	A	4278	2.632	0.008478	1563	1.709	0.0874	2456	1.833	0.06687	259	0.856	0.3917
HLA-G	rs9357086	6	29778029	C	G	G	4278	-1.672	0.0946	1563	-0.14	0.8885	2456	-1.684	0.09227	259	-1.265	0.2058
HLA-G	rs2523408	6	29778109	A	C	C	4278	-1.668	0.09533	1563	-1.615	0.1064	2456	-0.471	0.6376	259	-1.361	0.1735
HLA-G	rs1611172	6	29778213	C	G	G	4278	-2.641	0.008269	1563	-1.717	0.08601	2456	-1.838	0.06601	259	-0.855	0.3928
HLA-G	rs1610663	6	29778626	T	C	T	4278	1.671	0.09465	1563	1.621	0.1049	2456	0.47	0.6381	259	1.361	0.1735
HLA-G	rs753544	6	29780529	T	C	T	4278	2.642	0.008234	1563	1.72	0.08537	2456	1.837	0.06615	259	0.855	0.3928
HLA-G	rs3888577	6	29780698	T	G	G	3033	-1.892	0.05852	362	-0.426	0.6702	2456	-2.092	0.03643	215	0.518	0.6043
HLA-G	rs1610703	6	29781613	A	T	A	4278	1.601	0.1094	1563	1.764	0.07772	2456	-0.002	0.9985	259	2.179	0.02933
HLA-G	rs1610674	6	29781886	T	C	T	4278	2.643	0.008222	1563	1.719	0.08569	2456	1.838	0.06603	259	0.858	0.3907
HLA-G	rs11753629	6	29782331	A	G	G	4278	-1.328	0.1843	1563	-0.434	0.6645	2456	-1.554	0.1202	259	0.454	0.6496
HLA-G	rs1736959	6	29782470	T	C	T	4278	2.642	0.008231	1563	1.718	0.08587	2456	1.838	0.06605	259	0.86	0.39
HLA-G	rs1736956	6	29782690	A	G	A	4278	1.26	0.2078	1563	1.27	0.204	2456	0.261	0.7939	259	1.194	0.2323
HLA-G	rs1077432	6	29782868	T	C	C	4278	-2.641	0.008256	1563	-1.717	0.08606	2456	-1.837	0.06621	259	-0.861	0.389
HLA-G	rs1318083	6	29783219	A	T	A	4278	2.641	0.008256	1563	1.717	0.08597	2456	1.836	0.0663	259	0.862	0.3886
HLA-G	rs1633105	6	29783382	A	G	G	4278	-1.257	0.2088	1563	-1.266	0.2056	2456	-0.26	0.795	259	-1.199	0.2305
HLA-G	rs3890904	6	29783491	T	C	T	1607	1.207	0.2275	1563	1.16	0.2462	NA	NA	NA	44	0.382	0.7026
HLA-G	rs1111673	6	29783529	A	G	A	4278	2.636	0.008383	1563	1.71	0.08718	2456	1.835	0.06653	259	0.862	0.3886
HLA-G	rs6457057	6	29784503	A	G	A	4278	1.391	0.1642	1563	0.835	0.4037	2456	0.654	0.5128	259	1.586	0.1127
HLA-G	rs7776026	6	29785101	A	G	G	4278	-1.37	0.1706	1563	-0.802	0.4226	2456	-0.656	0.512	259	-1.58	0.1141
HLA-G	rs1620173	6	29785149	A	C	C	4278	-2.631	0.008502	1563	-1.707	0.0879	2456	-1.832	0.06701	259	-0.862	0.3887
HLA-G	rs1619379	6	29785235	T	C	T	4278	1.26	0.2077	1563	1.233	0.2176	2456	0.272	0.7855	259	1.253	0.2101
HLA-G	rs2735028	6	29785538	T	C	T	4278	1.63	0.1032	1563	1.748	0.08052	2456	0.154	0.8778	259	1.856	0.06351
HLA-G	rs1736952	6	29785653	T	C	T	4278	0.863	0.3881	1563	0.223	0.8237	2456	0.795	0.4265	259	0.512	0.6089
HLA-G	rs2517932	6	29785680	C	G	C	3731	-0.59	0.5551	1016	-0.355	0.7225	2456	-0.51	0.6099	259	0.035	0.9719
HLA-G	rs2743933	6	29786220	T	C	C	2671	-1.226	0.2201	NA	NA	NA	2456	-0.913	0.3611	215	-1.236	0.2165

HLA-G	rs2743932	6	29786243	T	C	T	2671	1.228	0.2196	NA	NA	NA	2456	0.914	0.3605	215	1.236	0.2164
HLA-G	rs2743931	6	29787072	T	C	C	4278	-0.381	0.7032	1563	0.04	0.9681	2456	-0.341	0.7328	259	-0.595	0.5519
HLA-G	rs2394176	6	29787238	A	G	G	4278	-0.498	0.6186	1563	-0.572	0.5671	2456	-0.015	0.9877	259	-0.57	0.5687
HLA-G	rs2394177	6	29787369	A	G	A	4278	0.861	0.3894	1563	0.872	0.3832	2456	0.258	0.7963	259	0.561	0.5745
HLA-G	rs3873245	6	29788537	T	C	C	1607	-1.205	0.2284	1563	-1.158	0.2469	NA	NA	NA	44	-0.378	0.7052
HLA-G	rs1633017	6	29788770	T	C	C	4278	-0.772	0.4402	1563	-0.209	0.8345	2456	-0.675	0.4998	259	-0.545	0.5854
HLA-G	rs1610677	6	29789171	T	C	C	4278	-1.782	0.0747	1563	-0.997	0.3187	2456	-1.66	0.09682	259	0.319	0.7497
HLA-G	rs1610678	6	29789190	T	C	C	4278	-0.933	0.3509	1563	-0.887	0.3749	2456	-0.3	0.7641	259	-0.687	0.492
HLA-G	rs1611146	6	29789523	T	C	C	2671	-1.225	0.2208	NA	NA	NA	2456	-0.909	0.3635	215	-1.245	0.2131
HLA-G	rs1611149	6	29789999	T	C	T	4278	0.929	0.353	1563	0.883	0.3771	2456	0.298	0.7655	259	0.687	0.492
HLA-G	rs2735024	6	29792488	T	C	C	4278	-2.247	0.02461	1563	-1.365	0.1723	2456	-1.835	0.06658	259	-0.132	0.8951
HLA-G	rs2249571	6	29792575	A	G	G	4278	-2.306	0.0211	1563	-1.027	0.3044	2456	-2.327	0.01995	259	0.317	0.7512
HLA-G	rs1736939	6	29793385	A	G	A	4278	2.252	0.02433	1563	1.378	0.1683	2456	1.831	0.06714	259	0.13	0.8968
HLA-G	rs1632949	6	29793724	T	C	C	4278	-2.591	0.009562	1563	-1.562	0.1182	2456	-2.143	0.03213	259	-0.095	0.9244
HLA-G	rs1736936	6	29794317	A	G	A	4278	1.763	0.07792	1563	0.988	0.3231	2456	1.649	0.09921	259	-0.34	0.7339
HLA-G	rs1736935	6	29794443	A	G	G	4278	-0.897	0.3699	1563	-0.855	0.3923	2456	-0.278	0.7811	259	-0.687	0.4919
HLA-G	rs3115630	6	29794501	T	C	T	1690	0.267	0.7891	1563	0.261	0.794	127	0.06	0.9525	NA	NA	NA
HLA-G	rs1233334	6	29794897	C	G	G	4278	-0.745	0.4565	1563	-0.224	0.8228	2456	-0.624	0.5327	259	-0.555	0.5789
HLA-G	rs1233333	6	29795421	A	G	G	4278	-0.062	0.9505	1563	0.225	0.8223	2456	-0.434	0.6642	259	0.533	0.5941
HLA-G	rs1632942	6	29796640	T	C	C	4278	-0.878	0.3801	1563	-0.833	0.4048	2456	-0.271	0.7867	259	-0.688	0.4917
HLA-G	rs1736920	6	29797173	A	G	G	4278	-0.874	0.3822	1563	-0.828	0.4076	2456	-0.27	0.7875	259	-0.688	0.4917
HLA-G	rs1611627	6	29797782	T	C	C	4278	-2.153	0.03134	1563	-1.452	0.1464	2456	-1.546	0.122	259	-0.419	0.6754
HLA-G	rs1632933	6	29797933	T	C	T	4278	1.738	0.08214	1563	0.959	0.3375	2456	1.633	0.1025	259	-0.319	0.7499
HLA-G	rs915668	6	29798459	C	G	G	4278	-0.863	0.3879	1563	-0.819	0.413	2456	-0.263	0.7924	259	-0.688	0.4916
HLA-G	rs1063320	6	29798749	C	G	G	4278	-0.843	0.399	1563	-0.787	0.4311	2456	-0.262	0.7935	259	-0.688	0.4916
HLA-G	rs1233330	6	29799103	A	G	G	4278	-0.054	0.9568	1563	0.242	0.8086	2456	-0.437	0.6624	259	0.529	0.5967
HLA-G	rs2517897	6	29800101	A	C	C	4278	-0.073	0.9415	1563	-0.43	0.6674	2456	0.663	0.5071	259	-1.286	0.1985
HLA-G	rs2517896	6	29800142	T	C	T	4278	0.642	0.5207	1563	0.436	0.6626	2456	0.508	0.6116	259	-0.025	0.9799
HLA-G	rs2517892	6	29801474	T	C	T	4278	1.199	0.2305	1563	0.694	0.4875	2456	0.943	0.3454	259	0.262	0.7931
HLA-G	rs2523793	6	29802550	T	C	C	4278	-0.717	0.4737	1563	-0.141	0.8881	2456	-1.029	0.3034	259	0.603	0.5467
HLA-G	rs2735020	6	29802985	A	C	A	3731	0.638	0.5233	1016	0.468	0.6395	2456	0.418	0.6762	259	0.209	0.8345
HLA-G	rs2523790	6	29803650	T	G	T	4278	1.205	0.2281	1563	0.699	0.4846	2456	0.947	0.3437	259	0.265	0.7907
HLA-G	rs16896049	6	29803730	C	G	C	903	0.232	0.8167	859	0.151	0.8798	NA	NA	NA	44	0.382	0.7027
HLA-G	rs1233326	6	29804071	A	G	G	4278	-0.799	0.4245	1563	-0.32	0.7492	2456	-0.632	0.5272	259	-0.514	0.6076
HLA-G	rs9404952	6	29804165	A	G	G	4278	-2.163	0.0305	1563	-1.306	0.1916	2456	-1.548	0.1216	259	-0.818	0.4133
HLA-G	rs16896052	6	29804176	A	G	A	903	0.231	0.817	859	0.151	0.88	NA	NA	NA	44	0.382	0.7027
HLA-G	rs2523786	6	29805149	T	C	T	4278	1.19	0.2339	1563	0.69	0.49	2456	0.932	0.3512	259	0.271	0.7866
HLA-G	rs2394179	6	29805166	T	C	C	4278	-1.187	0.2352	1563	-0.689	0.4908	2456	-0.929	0.3529	259	-0.271	0.7863
HLA-G	rs2394180	6	29805199	T	C	T	4278	1.233	0.2174	1563	0.594	0.5528	2456	1.36	0.174	259	-0.632	0.5272
HLA-G	rs2523783	6	29805480	A	T	T	4278	-0.462	0.6441	1563	-0.453	0.6508	2456	-0.251	0.802	259	0.007	0.9946
HLA-G	rs2394182	6	29805551	A	G	A	4278	1.18	0.238	1563	0.684	0.4942	2456	0.923	0.3562	259	0.275	0.7833
HLA-G	rs2735015	6	29805741	A	T	T	4278	-1.175	0.2402	1563	-0.676	0.4987	2456	-0.921	0.3571	259	-0.276	0.7825
HLA-G	rs2735014	6	29805809	A	C	C	4278	-0.683	0.4944	1563	-0.123	0.9025	2456	-0.999	0.318	259	0.599	0.5493
HLA-G	rs2253981	6	29805922	A	G	G	4278	-1.169	0.2425	1563	-0.671	0.5025	2456	-0.914	0.3609	259	-0.289	0.7729

HLA-G	rs7755504	6	29806033	C	G	C	3389	1.514	0.1299	674	1.291	0.1966	2456	1.723	0.08484	259	-1.912	0.05592
HLA-G	rs2254071	6	29806062	T	C	T	4278	1.165	0.244	1563	0.671	0.5025	2456	0.909	0.3631	259	0.287	0.7738
HLA-G	rs1233324	6	29806107	T	C	T	4278	0.794	0.4271	1563	0.316	0.7522	2456	0.631	0.5279	259	0.508	0.6114
HLA-G	rs2254077	6	29806194	T	C	T	4278	1.161	0.2456	1563	0.671	0.5025	2456	0.904	0.3659	259	0.287	0.7738
HLA-G	rs2523781	6	29806274	T	C	T	4278	0.484	0.6284	1563	0.456	0.6485	2456	0.279	0.7803	259	-0.012	0.9908
HLA-G	rs2523780	6	29806331	A	G	A	4278	1.156	0.2476	1563	0.671	0.5025	2456	0.898	0.3694	259	0.287	0.7738
HLA-G	rs2523779	6	29806622	T	C	T	4278	0.494	0.6216	1563	0.456	0.6485	2456	0.292	0.7705	259	-0.012	0.9902
HLA-G	rs407238	6	29806901	C	G	C	4278	2.402	0.01632	1563	1.815	0.06946	2456	1.339	0.1805	259	1.177	0.2392
HLA-G	rs2735011	6	29807006	T	C	T	4278	0.634	0.5263	1563	0.119	0.9053	2456	0.924	0.3555	259	-0.562	0.5742
HLA-G	rs2517887	6	29807393	C	G	G	4278	-0.655	0.5127	1563	-0.119	0.9053	2456	-0.963	0.3358	259	0.596	0.5512
HLA-G	rs2743937	6	29807923	T	C	T	4278	0.653	0.5141	1563	0.119	0.9053	2456	0.96	0.337	259	-0.597	0.5504
HLA-G	rs2735008	6	29808013	A	G	G	4278	-1.202	0.2295	1563	-0.118	0.9058	2456	-1.657	0.0976	259	0.509	0.611
HLA-G	rs2735007	6	29808199	A	G	G	4278	-0.651	0.515	1563	-0.117	0.9068	2456	-0.96	0.3372	259	0.597	0.5504
HLA-G	rs2735005	6	29808464	A	G	G	4278	-1.142	0.2534	1563	-0.667	0.5046	2456	-0.882	0.378	259	-0.287	0.7738
HLA-G	rs2735003	6	29808634	T	G	T	4278	0.649	0.5166	1563	0.114	0.9091	2456	0.959	0.3376	259	-0.597	0.5504
HLA-G	rs2735002	6	29808718	A	G	A	4278	1.141	0.2539	1563	0.667	0.505	2456	0.881	0.3785	259	0.287	0.7738
HLA-G	rs2735001	6	29808729	A	G	G	4278	-0.501	0.6162	1563	-0.456	0.6487	2456	-0.303	0.7618	259	0.016	0.9876
HLA-G	rs2735000	6	29808775	T	C	T	4278	0.646	0.5185	1563	0.115	0.9088	2456	0.955	0.3397	259	-0.597	0.5504
HLA-G	rs9258540	6	29808905	T	C	T	1607	0.854	0.3933	1563	0.815	0.4152	NA	NA	NA	44	0.304	0.7615
HLA-G	rs2734999	6	29808917	T	C	T	4278	0.508	0.6113	1563	0.456	0.6487	2456	0.313	0.7546	259	-0.016	0.987
HLA-G	rs2734998	6	29808951	C	G	C	4278	0.637	0.5239	1563	0.113	0.9097	2456	0.945	0.3449	259	-0.597	0.5504
HLA-G	rs2523777	6	29809087	T	C	C	4278	-0.636	0.5248	1563	-0.114	0.9095	2456	-0.943	0.3459	259	0.597	0.5504
HLA-G	rs2523776	6	29809194	T	G	G	4278	-0.512	0.6089	1563	-0.455	0.6488	2456	-0.318	0.7508	259	0.017	0.9862
HLA-G	rs4314521	6	29809508	T	C	C	903	-0.229	0.8189	859	-0.148	0.8821	NA	NA	NA	44	-0.382	0.7026
HLA-G	rs2523774	6	29809578	T	C	C	4278	-0.625	0.5321	1563	-0.114	0.9094	2456	-0.92	0.3577	259	0.573	0.5669
HLA-G	rs3900925	6	29809956	T	C	C	903	-0.229	0.8189	859	-0.148	0.8821	NA	NA	NA	44	-0.382	0.7026
HLA-G	rs2523773	6	29810113	T	C	C	4278	-0.653	0.5139	1563	-0.123	0.9023	2456	-0.958	0.3383	259	0.597	0.5505
HLA-G	rs2734996	6	29810288	A	T	T	4278	-0.513	0.6079	1563	-0.037	0.9705	2456	-0.911	0.3621	259	0.812	0.4167
HLA-G	rs2523772	6	29810325	T	C	C	4278	-0.497	0.6194	1563	-0.456	0.6487	2456	-0.298	0.7654	259	0.019	0.9849
HLA-G	rs4607472	6	29810543	A	G	A	4278	0.274	0.7839	1563	-0.032	0.9748	2456	0.18	0.8575	259	0.639	0.5228
HLA-G	rs2523771	6	29810712	C	G	G	4278	-0.503	0.6147	1563	-0.462	0.644	2456	-0.302	0.7627	259	0.02	0.9844
HLA-G	rs2734995	6	29810945	A	G	G	4278	-0.579	0.5626	1563	-0.127	0.8986	2456	-1.144	0.2528	259	1.482	0.1385
HLA-G	rs2523769	6	29811022	A	C	A	4278	1.063	0.2877	1563	0.641	0.5217	2456	0.805	0.4207	259	0.267	0.7891
HLA-G	rs2844827	6	29811237	T	C	T	4278	0.083	0.9339	1563	0.203	0.8394	2456	-0.483	0.6294	259	1.325	0.185
HLA-G	rs16896081	6	29811709	T	C	C	903	-0.229	0.819	859	-0.148	0.8822	NA	NA	NA	44	-0.382	0.7026
HLA-G	rs4084097	6	29811750	T	C	T	903	0.227	0.8204	859	0.146	0.8836	NA	NA	NA	44	0.382	0.7026
HLA-G	rs4084096	6	29811868	T	G	G	4278	-0.564	0.5727	1563	-0.876	0.3812	2456	0.312	0.755	259	-1.103	0.2702
HLA-G	rs2734994	6	29812030	T	C	T	4278	0.551	0.5819	1563	0.57	0.5685	2456	0.279	0.7804	259	-0.022	0.9826
HLA-G	rs2734992	6	29812156	T	C	C	4278	-0.251	0.8019	1563	-0.531	0.5953	2456	0.349	0.7274	259	-0.788	0.4305
HLA-G	rs2734991	6	29812454	T	C	T	4278	0.551	0.5818	1563	0.57	0.5686	2456	0.279	0.7801	259	-0.022	0.9826
HLA-G	rs2734990	6	29812505	A	T	A	4278	0.164	0.8701	1563	0.256	0.7976	2456	-0.423	0.6722	259	1.338	0.181
HLA-G	rs2523767	6	29812807	A	G	A	4278	0.101	0.9194	1563	0.302	0.7623	2456	-0.542	0.5878	259	1.337	0.1811
HLA-G	rs2523766	6	29812834	A	G	G	4278	-0.551	0.5817	1563	-0.57	0.5685	2456	-0.279	0.78	259	0.022	0.9826
HLA-G	rs9258555	6	29813016	C	G	C	4278	0.551	0.5817	1563	0.57	0.5685	2456	0.279	0.7801	259	-0.022	0.9826

HLA-G	rs2517878	6	29813380	T	C	T	4278	2.204	0.02754	1563	1.858	0.06311	2456	1.14	0.2541	259	0.88	0.3791
HLA-G	rs3873260	6	29813682	A	G	A	4278	0.164	0.8695	1563	0.259	0.796	2456	-0.424	0.6717	259	1.338	0.1811
HLA-G	rs9258557	6	29813942	T	C	T	4278	0.557	0.5777	1563	0.58	0.5617	2456	0.279	0.7803	259	-0.022	0.9826
HLA-G	rs9258558	6	29814057	C	G	G	4278	-0.561	0.5746	1563	-0.585	0.5585	2456	-0.281	0.7786	259	0.022	0.9826
HLA-G	rs4081563	6	29814364	A	G	A	1607	1.247	0.2123	1563	1.201	0.2299	NA	NA	NA	44	0.382	0.7023
HLA-G	rs1611750	6	29814778	T	G	G	4278	-1.901	0.05726	1563	-1.656	0.09765	2456	-0.902	0.367	259	-0.88	0.3787
HLA-G	rs3128912	6	29815637	T	C	T	4278	0.789	0.4301	1563	0.282	0.7779	2456	0.659	0.51	259	0.485	0.6274
HLA-G	rs3115629	6	29815713	T	C	C	4278	-0.789	0.4299	1563	-0.282	0.7778	2456	-0.659	0.5098	259	-0.485	0.6277
HLA-G	rs2394185	6	29816371	T	G	T	1822	0.896	0.3701	1563	0.51	0.6103	NA	NA	NA	259	1.125	0.2606
HLA-G	rs2394186	6	29816421	A	G	A	4278	0.576	0.5647	1563	0.472	0.6372	2456	0.288	0.773	259	0.294	0.7688
HLA-G	rs2523765	6	29817106	A	T	T	4278	-0.984	0.3252	1563	-1.01	0.3125	2456	0.138	0.8901	259	-1.943	0.05201
HLA-G	rs3886811	6	29817379	T	C	T	1607	1.151	0.2497	1563	1.103	0.27	NA	NA	NA	44	0.382	0.7026
HLA-G	rs11759549	6	29817923	C	G	G	3027	-1.522	0.1279	312	-1.923	0.05447	2456	-1.625	0.1041	259	1.911	0.05598
HLA-G	rs2734986	6	29818568	T	C	C	1607	-1.144	0.2525	1563	-1.117	0.264	NA	NA	NA	44	-0.258	0.7967
HLA-G	rs2734985	6	29818662	T	C	T	4278	0.47	0.638	1563	-0.595	0.5517	2456	0.583	0.5601	259	1.58	0.1141
HLA-G	rs3893527	6	29818868	A	G	G	4278	-1.046	0.2954	1563	-1.295	0.1952	2456	-0.355	0.7229	259	0.022	0.9823
HLA-G	rs2523758	6	29819198	A	G	A	4278	1.404	0.1604	1563	-0.262	0.793	2456	1.437	0.1508	259	1.926	0.05407
HLA-G	rs2517868	6	29819338	A	C	A	1822	0.758	0.4482	1563	1.164	0.2446	NA	NA	NA	259	-0.847	0.397
HLA-G	rs7451408	6	29819541	A	C	A	2978	0.496	0.6202	1563	0.5	0.6169	1156	1.07	0.2847	259	-1.808	0.07054
HLA-G	rs1317834	6	29819554	T	C	C	3655	-0.454	0.65	1563	-0.488	0.6257	1833	-0.837	0.4026	259	1.72	0.08538
HLA-G	rs2107198	6	29819662	A	G	G	4278	-0.728	0.4664	1563	0.444	0.6567	2456	-0.957	0.3388	259	-1.106	0.2687
HLA-G	rs2508052	6	29820002	A	C	A	1822	0.721	0.4712	1563	0.96	0.3372	NA	NA	NA	259	-0.446	0.6554
HLA-G	rs2508051	6	29820034	T	C	T	4278	0.463	0.6433	1563	-0.44	0.6596	2456	0.473	0.6364	259	1.509	0.1314
HLA-G	rs2508050	6	29820047	T	C	C	3655	-1.023	0.3063	1563	-0.211	0.8326	1833	-0.205	0.8379	259	-2.779	0.005448
HLA-G	rs9258606	6	29820170	C	G	C	2978	0.39	0.6963	1563	0.413	0.6798	1156	0.985	0.3247	259	-1.771	0.07654
HLA-G	rs9258610	6	29820253	A	G	A	2978	0.37	0.7112	1563	0.401	0.6882	1156	0.966	0.334	259	-1.771	0.0765
HLA-G	rs3115627	6	29820278	A	G	A	4278	1.415	0.1572	1563	1.194	0.2325	2456	0.79	0.4298	259	0.385	0.7006
HLA-G	rs5013087	6	29820329	C	G	G	2978	-0.357	0.7208	1563	-0.389	0.6974	1156	-0.96	0.3372	259	1.771	0.07656
HLA-G	rs5013088	6	29820389	T	C	C	2978	-0.355	0.7227	1563	-0.387	0.6988	1156	-0.958	0.3382	259	1.771	0.07664
HLA-G	rs3862293	6	29820466	A	G	A	4278	1.044	0.2965	1563	1.165	0.2442	2456	0.631	0.5283	259	-0.56	0.5754
HLA-G	rs5013091	6	29820487	C	G	C	4015	0.347	0.7288	1563	0.518	0.6044	2193	0.523	0.6007	259	-1.431	0.1525
HLA-G	rs5013093	6	29820586	T	C	T	2978	0.35	0.7263	1563	0.382	0.7025	1156	0.953	0.3405	259	-1.765	0.07753
HLA-G	rs3128910	6	29820670	T	C	C	2978	-0.365	0.7152	1563	-0.394	0.6936	1156	-0.966	0.3339	259	1.772	0.07639
HLA-G	rs2523756	6	29820717	A	G	G	4278	-1.081	0.2799	1563	-1.305	0.192	2456	-0.93	0.3524	259	1.677	0.09351
HLA-G	rs2734984	6	29820831	T	C	C	2978	-0.357	0.721	1563	-0.382	0.7024	1156	-0.963	0.3354	259	1.763	0.07791
HLA-G	rs2734983	6	29820951	A	T	A	1822	0.621	0.5345	1563	0.879	0.3792	NA	NA	NA	259	-0.513	0.6083
HLA-G	rs2517866	6	29821032	T	C	T	1822	0.646	0.5182	1563	0.879	0.3792	NA	NA	NA	259	-0.446	0.6555
HLA-G	rs17179213	6	29821221	A	G	G	1607	-0.858	0.3906	1563	-0.806	0.42	NA	NA	NA	44	-0.382	0.7026
HLA-G	rs9258631	6	29821293	A	C	C	4278	-1.893	0.05834	1563	-1.075	0.2822	2456	-1.521	0.1282	259	-0.367	0.7134
HLA-G	rs2247719	6	29821384	A	T	T	2485	-0.108	0.9143	1563	-0.382	0.7022	663	-0.723	0.4698	259	1.763	0.07797
HLA-G	rs2734982	6	29821567	T	G	G	4278	-1.259	0.208	1563	-0.937	0.3488	2456	-0.493	0.6219	259	-1.297	0.1948
HLA-G	rs2734981	6	29821692	A	G	G	4278	-0.493	0.6221	1563	0.383	0.702	2456	-0.47	0.6383	259	-1.496	0.1347
HLA-G	rs9258636	6	29821837	T	C	T	1822	0.646	0.5184	1563	0.879	0.3794	NA	NA	NA	259	-0.446	0.6555
HLA-G	rs2734980	6	29821896	A	G	G	4278	-0.492	0.6224	1563	0.383	0.7019	2456	-0.47	0.6387	259	-1.496	0.1347

HLA-G	rs2517862	6	29821937	T	C	T	1822	0.646	0.5184	1563	0.879	0.3795	NA	NA	NA	259	-0.446	0.6555
HLA-G	rs2517861	6	29821982	T	C	C	4278	-0.155	0.8767	1563	0.395	0.693	2456	-0.054	0.9566	259	-1.433	0.1519
HLA-G	rs3115626	6	29822061	T	C	C	4278	-1.272	0.2034	1563	-0.761	0.4469	2456	-0.373	0.7092	259	-2.152	0.03141
HLA-G	rs9258642	6	29822070	T	C	T	1822	0.64	0.522	1563	0.887	0.3749	NA	NA	NA	259	-0.482	0.63
HLA-G	rs2975033	6	29822261	A	G	G	4278	-1.271	0.2036	1563	-0.955	0.3393	2456	-0.495	0.6209	259	-1.297	0.1947
HLA-G	rs9258651	6	29822355	T	C	T	4278	1.187	0.2352	1563	1.311	0.19	2456	1	0.3172	259	-1.475	0.1402
HLA-G	rs2517860	6	29822521	A	G	G	2485	-0.175	0.8608	1563	-0.389	0.6972	663	-0.843	0.3992	259	1.761	0.07818
HLA-G	rs2517859	6	29822571	A	G	A	2485	0.176	0.8601	1563	0.388	0.698	663	0.846	0.3974	259	-1.761	0.07819
HLA-G	rs2428510	6	29823027	A	G	A	4278	1.086	0.2776	1563	1.303	0.1926	2456	0.843	0.3992	259	-1.385	0.1662
HLA-G	rs2734979	6	29823161	A	G	G	4278	-1.086	0.2775	1563	-1.303	0.1926	2456	-0.843	0.399	259	1.384	0.1663
HLA-G	rs16896139	6	29823191	A	C	C	1607	-0.855	0.3926	1563	-0.803	0.4221	NA	NA	NA	44	-0.382	0.7026
HLA-G	rs3128909	6	29823571	A	T	A	4278	1.23	0.2188	1563	0.782	0.4342	2456	0.446	0.6559	259	1.705	0.08826
HLA-G	rs3132726	6	29823606	A	G	A	4278	0.264	0.7921	1563	-0.157	0.8749	2456	-0.289	0.7727	259	2.347	0.0189
HLA-G	rs2517852	6	29823729	A	G	A	4278	1.086	0.2773	1563	1.302	0.1928	2456	0.844	0.3988	259	-1.383	0.1668
HLA-G	rs2517851	6	29823782	T	C	T	4278	0.773	0.4398	1563	0.84	0.401	2456	0.729	0.466	259	-1.168	0.2427
HLA-G	rs2517850	6	29823800	T	G	G	4278	-0.488	0.6255	1563	0.389	0.6971	2456	-0.469	0.6389	259	-1.495	0.1349
HLA-G	rs2517849	6	29823819	A	G	A	4278	1.087	0.2772	1563	1.302	0.193	2456	0.844	0.3985	259	-1.382	0.1671
HLA-G	rs2508049	6	29823883	A	G	G	1822	-0.651	0.5153	1563	-0.884	0.3767	NA	NA	NA	259	0.446	0.6555
HLA-G	rs6919513	6	29823994	T	C	T	4278	1.087	0.2771	1563	1.302	0.193	2456	0.844	0.3984	259	-1.381	0.1672
HLA-G	rs9258679	6	29824059	A	G	G	4278	-1.084	0.2784	1563	-1.302	0.1931	2456	-0.845	0.3981	259	1.394	0.1633
HLA-G	rs9258687	6	29824235	C	G	G	4278	-1.564	0.1178	1563	-1.153	0.249	2456	-1.254	0.2098	259	0.337	0.736
HLA-G	rs3128908	6	29824267	A	G	A	4278	0.522	0.6014	1563	0.273	0.7849	2456	0.35	0.7262	259	0.374	0.7082
HLA-G	rs9258689	6	29824287	C	G	G	4278	-1.087	0.277	1563	-1.301	0.1933	2456	-0.845	0.3982	259	1.379	0.1678
HLA-G	rs9258690	6	29824340	C	G	G	4278	-0.485	0.6275	1563	0.394	0.6938	2456	-0.469	0.639	259	-1.495	0.135
HLA-G	rs1611666	6	29824845	A	T	A	4278	1.087	0.2769	1563	1.301	0.1934	2456	0.845	0.3981	259	-1.378	0.1682
HLA-G	rs3128907	6	29824994	T	C	T	4278	0.539	0.5896	1563	0.532	0.5947	2456	0.067	0.9469	259	0.68	0.4964
HLA-G	rs1611670	6	29825239	T	C	T	4278	1.088	0.2767	1563	1.3	0.1935	2456	0.845	0.3979	259	-1.377	0.1684
HLA-G	rs1611674	6	29825434	A	G	G	4278	-1.488	0.1368	1563	-1.662	0.09656	2456	-0.802	0.4226	259	0.505	0.6139
HLA-G	rs1611678	6	29825510	A	G	G	1822	-0.656	0.5121	1563	-0.889	0.3738	NA	NA	NA	259	0.446	0.6554
HLA-G	rs9258725	6	29826214	T	C	T	4278	0.822	0.411	1563	-0.264	0.7918	2456	0.879	0.3796	259	1.284	0.199
HLA-G	rs1611689	6	29826726	A	T	A	1822	0.656	0.5116	1563	0.89	0.3733	NA	NA	NA	259	-0.446	0.6554
HLA-G	rs9258738	6	29827390	A	C	C	4278	-0.511	0.6097	1563	-0.661	0.5086	2456	-0.505	0.6136	259	1.104	0.2696
HLA-G	rs9258739	6	29827663	A	G	A	4278	0.52	0.6033	1563	0.66	0.509	2456	0.523	0.6011	259	-1.12	0.2626
HLA-G	rs1611699	6	29827753	A	T	A	4278	1.088	0.2764	1563	1.299	0.1939	2456	0.846	0.3976	259	-1.373	0.1698
HLA-G	rs9258740	6	29827899	T	C	T	4278	1.559	0.119	1563	1.14	0.2544	2456	1.256	0.2092	259	-0.33	0.7415
HLA-G	rs1611701	6	29827956	T	C	T	1822	0.66	0.5091	1563	0.893	0.3718	NA	NA	NA	259	-0.443	0.6577
HLA-G	rs3094657	6	29828310	C	G	C	4278	0.236	0.8136	1563	-0.173	0.8623	2456	-0.3	0.7643	259	2.308	0.021
HLA-G	rs1611703	6	29828435	A	G	G	1822	-0.66	0.5093	1563	-0.894	0.3712	NA	NA	NA	259	0.446	0.6554
HLA-G	rs1611705	6	29828493	T	G	G	4278	-1.09	0.2758	1563	-1.3	0.1934	2456	-0.847	0.3972	259	1.373	0.1697
HLA-G	rs6937645	6	29828584	A	G	A	4278	1.809	0.07046	1563	0.73	0.4655	2456	1.715	0.08632	259	0.277	0.7815
HLA-G	rs3094171	6	29828790	C	G	C	4278	0.234	0.8152	1563	-0.172	0.8635	2456	-0.303	0.7616	259	2.306	0.02109
HLA-G	rs9295822	6	29828880	T	C	T	4278	1.809	0.07049	1563	0.73	0.4654	2456	1.715	0.08638	259	0.277	0.7815
HLA-G	rs1611710	6	29828916	T	C	T	4278	1.092	0.2746	1563	1.305	0.1919	2456	0.847	0.397	259	-1.374	0.1695
HLA-G	rs9258750	6	29828972	A	G	G	4278	-1.568	0.1169	1563	-1.136	0.256	2456	-1.271	0.2038	259	0.331	0.7404

HLA-G	rs3094170	6	29829265	T	C	T	4278	0.471	0.638	1563	0.285	0.776	2456	0.257	0.797	259	0.421	0.6735
HLA-G	rs1611714	6	29829407	A	G	A	1822	0.655	0.5127	1563	0.88	0.3788	NA	NA	NA	259	-0.426	0.6702
HLA-G	rs16896166	6	29829450	C	G	C	1607	0.816	0.4144	1563	0.764	0.4451	NA	NA	NA	44	0.382	0.7026
HLA-G	rs9468643	6	29829871	T	C	T	4278	1.848	0.0646	1563	0.73	0.4651	2456	1.713	0.08676	259	0.442	0.6583
HLA-G	rs3094169	6	29829986	T	C	T	3576	1.258	0.2082	1378	1.059	0.2898	2198	0.767	0.443	NA	NA	NA
HLA-G	rs7760172	6	29830074	T	C	T	3212	1.146	0.2519	497	2.156	0.03106	2456	0.888	0.3746	259	-1.687	0.09167
HLA-G	rs9258766	6	29830411	A	G	A	4278	0.541	0.5883	1563	0.636	0.5248	2456	0.535	0.5923	259	-1.011	0.3119
HLA-G	rs1611723	6	29830505	A	G	G	4278	-1.017	0.3093	1563	-0.995	0.3199	2456	-0.985	0.3246	259	1.345	0.1787
HLA-G	rs2517829	6	29830529	C	G	G	3611	-0.85	0.3953	1563	-0.268	0.789	1833	-0.22	0.826	215	-2.12	0.03399
HLA-G	rs9258771	6	29830652	A	G	G	4278	-0.54	0.5893	1563	-0.635	0.5253	2456	-0.534	0.5932	259	1.011	0.312
HLA-G	rs3094656	6	29830751	T	C	T	4278	0.538	0.5906	1563	0.284	0.7761	2456	0.36	0.7185	259	0.378	0.7056
HLA-G	rs1611732	6	29831008	T	C	T	4278	1.076	0.282	1563	1.24	0.215	2456	0.841	0.4001	259	-1.265	0.206
HLA-G	rs3128904	6	29831466	A	G	A	4278	0.535	0.5927	1563	0.284	0.7761	2456	0.356	0.7215	259	0.378	0.7055
HLA-G	rs1611737	6	29831571	C	G	G	4278	-1.07	0.2846	1563	-1.233	0.2175	2456	-0.839	0.4014	259	1.265	0.206
HLA-G	rs3094168	6	29831577	C	G	C	4278	0.653	0.5138	1563	0.099	0.9215	2456	0.441	0.6593	259	1.054	0.2919
HLA-G	rs1611738	6	29831706	A	C	A	1822	0.657	0.5112	1563	0.883	0.3772	NA	NA	NA	259	-0.427	0.6695
HLA-G	rs1611739	6	29831798	T	G	G	4278	-1.093	0.2743	1563	-1.229	0.219	2456	-0.874	0.3823	259	1.267	0.205
HLA-G	rs9258795	6	29832016	A	G	A	4278	0.535	0.5925	1563	0.591	0.5545	2456	0.564	0.573	259	-1.012	0.3113
HLA-G	rs9258798	6	29832197	A	C	C	4278	-1.551	0.1208	1563	-1.063	0.2878	2456	-1.268	0.2049	259	0.21	0.8338
HLA-G	rs2524035	6	29832332	A	G	G	4278	-0.438	0.6613	1563	-0.731	0.465	2456	-0.446	0.6557	259	1.387	0.1653
HLA-G	rs9258811	6	29832526	T	C	C	4278	-1.124	0.2609	1563	-0.494	0.6211	2456	-1.432	0.1522	259	1.055	0.2916
HLA-G	rs9468645	6	29832867	A	C	C	4278	-1.842	0.06554	1563	-0.727	0.467	2456	-1.706	0.08792	259	-0.442	0.6582
HLA-G	rs2508046	6	29833033	T	C	T	4278	2.218	0.02654	1563	0.671	0.5025	2456	1.754	0.07945	259	1.967	0.04921
HLA-G	rs3094165	6	29833541	A	G	A	4278	1.619	0.1054	1563	0.855	0.3924	2456	1.467	0.1424	259	-0.037	0.9706
HLA-G	rs2734974	6	29833779	A	G	G	4278	-1.868	0.06181	1563	-1.259	0.208	2456	-1.436	0.151	259	-0.076	0.9395
HLA-G	rs2734973	6	29833948	T	C	T	3655	0.974	0.3302	1563	0.561	0.5746	1833	0.023	0.9814	259	2.217	0.02665
HLA-G	rs2734971	6	29834449	A	G	G	4278	-1.566	0.1174	1563	-1.307	0.1912	2456	-1.116	0.2643	259	0.285	0.7759
HLA-G	rs2734970	6	29834472	T	C	T	4151	0.436	0.6626	1563	0.961	0.3366	2329	0	0.9998	259	-0.615	0.5386
HLA-G	rs1611630	6	29834805	A	G	G	1822	-0.705	0.4808	1563	-0.956	0.3391	NA	NA	NA	259	0.478	0.6325
HLA-G	rs1611631	6	29835654	T	C	T	2952	0.618	0.5368	1563	-0.091	0.9274	1174	0.42	0.6745	215	1.553	0.1204
HLA-G	rs3094159	6	29835834	A	G	A	4278	0.804	0.4216	1563	0.782	0.4344	2456	0.329	0.7425	259	0.334	0.7385
HLA-G	rs3094157	6	29836239	C	G	C	4278	0.484	0.6284	1563	0.303	0.7617	2456	0.257	0.7974	259	0.432	0.6659
HLA-G	rs1611634	6	29836366	T	C	T	2952	0.589	0.5559	1563	-0.005	0.9957	1174	0.314	0.7537	215	1.464	0.1432
HLA-G	rs1611635	6	29836463	T	C	T	1822	0.737	0.4611	1563	0.973	0.3306	NA	NA	NA	259	-0.435	0.6635
HLA-G	rs3132718	6	29836577	T	C	C	4278	-0.803	0.4222	1563	-0.782	0.4339	2456	-0.327	0.744	259	-0.334	0.7385
HLA-G	rs1611638	6	29836853	C	G	C	2952	0.617	0.5376	1563	-0.093	0.9257	1174	0.421	0.674	215	1.553	0.1204
HLA-G	rs3893468	6	29837882	A	C	C	903	-0.205	0.8376	859	-0.124	0.9012	NA	NA	NA	44	-0.38	0.704
HLA-G	rs9258913	6	29838243	T	C	T	4278	0.802	0.4223	1563	0.782	0.4339	2456	0.326	0.7441	259	0.334	0.7385
HLA-G	rs9258915	6	29838346	T	C	T	4278	0.792	0.4284	1563	0.782	0.434	2456	0.32	0.7488	259	0.31	0.7566
HLA-G	rs1611644	6	29838463	A	G	G	2996	-0.53	0.5962	1563	-0.945	0.3445	1174	0.067	0.9462	259	0.377	0.7065
HLA-G	rs2844821	6	29838642	T	C	T	4278	1.71	0.08736	1563	0.821	0.4116	2456	1.313	0.1892	259	0.887	0.3749
HLA-G	rs886398	6	29839268	T	C	T	3611	0.855	0.3925	1563	0.202	0.8403	1833	0.297	0.7664	215	2.094	0.03625
HLA-G	rs3128894	6	29839360	A	C	C	4278	-0.82	0.4123	1563	-0.782	0.434	2456	-0.41	0.682	259	-0.148	0.8823
HLA-G	rs3094654	6	29839816	T	C	C	4278	-0.802	0.4224	1563	-0.782	0.434	2456	-0.326	0.7443	259	-0.334	0.7385

HLA-G	rs1611647	6	29840156	A	G	A	1822	0.741	0.459	1563	0.974	0.33	NA	NA	NA	259	-0.429	0.668
HLA-G	rs3132714	6	29840648	T	C	C	4278	-0.802	0.4224	1563	-0.782	0.434	2456	-0.326	0.7442	259	-0.334	0.7385
HLA-G	rs3128890	6	29840838	C	G	C	4278	0.799	0.424	1563	0.782	0.4344	2456	0.321	0.7482	259	0.34	0.7336
HLA-G	rs3132712	6	29841021	A	G	G	4278	-0.802	0.4228	1563	-0.78	0.4354	2456	-0.327	0.7435	259	-0.334	0.7385
HLA-G	rs9258995	6	29841801	A	G	A	4278	0.8	0.4236	1563	0.776	0.4377	2456	0.328	0.7426	259	0.334	0.7384
HLA-G	rs3128886	6	29842783	A	C	A	4278	0.799	0.4242	1563	0.773	0.4397	2456	0.33	0.7416	259	0.334	0.7381
HLA-G	rs2523809	6	29849619	T	G	T	3655	0.722	0.4701	1563	0.625	0.5319	1833	-0.004	0.9972	259	1.187	0.2351
HLA-G	rs1611628	6	29857772	T	C	C	2271	-0.79	0.4293	1563	0.087	0.9307	493	-0.837	0.4027	215	-1.536	0.1246
HLA-G	rs2734942	6	29859135	A	G	A	2271	1.017	0.3089	1563	0	0.9999	493	1.423	0.1547	215	1.151	0.2497
HLA-G	rs2517817	6	29859517	T	C	T	2803	0.784	0.4328	1563	-0.239	0.8108	1025	1.085	0.2778	215	1.108	0.2678
HLA-G	rs1611567	6	29866200	T	G	T	2271	1.069	0.285	1563	0.108	0.9139	493	1.394	0.1632	215	1.072	0.2839
HLA-G	rs9468650	6	29867639	A	T	T	4278	-0.822	0.4113	1563	-0.492	0.6231	2456	-0.624	0.5325	259	-0.209	0.8341
HLA-G	rs1611575	6	29867809	T	C	C	2952	-0.808	0.4191	1563	-0.026	0.9792	1174	-0.622	0.5336	215	-1.469	0.1418
HLA-G	rs2517904	6	29868984	A	G	G	2952	-0.808	0.4188	1563	-0.027	0.9785	1174	-0.622	0.5338	215	-1.469	0.1418
HLA-G	rs4123016	6	29869110	T	C	C	2056	-0.916	0.3595	1563	-1.237	0.2162	493	0.331	0.7409	NA	NA	NA
HLA-A	rs2253523	6	29876959	T	C	C	3254	-0.027	0.9783	1563	-0.46	0.6452	1432	0.581	0.5611	259	-0.332	0.7399
HLA-A	rs2524024	6	29879529	T	C	C	4278	-0.448	0.6539	1563	-0.373	0.7092	2456	-0.282	0.7782	259	-0.038	0.9693
HLA-A	rs1611442	6	29880825	T	C	T	4278	0.47	0.6385	1563	0.689	0.491	2456	-0.053	0.9578	259	0.38	0.7037
HLA-A	rs2394243	6	29880853	T	C	T	1607	0.529	0.5965	1563	0.46	0.6452	NA	NA	NA	44	0.455	0.6488
HLA-A	rs2571410	6	29881464	C	G	C	4278	0.862	0.3887	1563	1.205	0.2281	2456	0.878	0.38	259	-2.161	0.0307
HLA-A	rs2734924	6	29882174	C	G	G	4278	-0.547	0.5846	1563	-0.262	0.7933	2456	-0.367	0.7133	259	-0.447	0.6551
HLA-A	rs3132689	6	29882530	T	G	G	4278	-1.334	0.1823	1563	-1.007	0.3138	2456	-1.077	0.2813	259	0.372	0.71
HLA-A	rs2734922	6	29882798	A	G	A	4278	0.515	0.6064	1563	0.247	0.8053	2456	0.83	0.4066	259	-1.067	0.286
HLA-A	rs422055	6	29885546	T	C	C	4278	-1.123	0.2613	1563	-1.857	0.06333	2456	-0.71	0.4777	259	2.183	0.02907
HLA-A	rs1655944	6	29888396	T	C	T	4278	0.459	0.6459	1563	0.403	0.6873	2456	0.179	0.8583	259	0.329	0.7425
HLA-A	rs406316	6	29888621	A	G	G	3027	-1.067	0.2861	312	-1.921	0.05471	2456	-1.019	0.3081	259	1.6	0.1096
HLA-A	rs11970226	6	29890249	T	C	C	2500	-1.802	0.07152	NA	NA	NA	2456	-1.74	0.0818	44	-0.582	0.5605
HLA-A	rs2471869	6	29890406	A	G	A	4278	0.684	0.494	1563	1.05	0.2937	2456	0.282	0.7776	259	-0.67	0.5031
HLA-A	rs1611400	6	29890918	T	C	C	4278	-0.956	0.3393	1563	-0.554	0.5796	2456	-0.32	0.7489	259	-1.537	0.1243
HLA-A	rs389600	6	29896999	T	C	T	4278	1.156	0.2475	1563	1.083	0.2789	2456	0.837	0.4026	259	-0.538	0.5907
HLA-A	rs2517749	6	29897259	A	T	T	4278	-1.461	0.1441	1563	-0.343	0.7314	2456	-1.467	0.1423	259	-0.575	0.5651
HLA-A	rs4087726	6	29898897	T	C	T	1607	0.438	0.6613	1563	0.38	0.7038	NA	NA	NA	44	0.382	0.7026
HLA-A	rs1655927	6	29899493	T	C	C	4278	-1.17	0.2421	1563	-1.088	0.2766	2456	-0.851	0.395	259	0.538	0.5905
HLA-A	rs2524005	6	29899677	A	G	A	4278	0.421	0.674	1563	0.013	0.9894	2456	0.318	0.7502	259	0.697	0.4861
HLA-A	rs2860580	6	29906691	A	G	A	4278	1.816	0.06938	1563	0.826	0.4085	2456	2.04	0.04136	259	-0.932	0.3514
HLA-A	rs439935	6	29907961	C	G	C	4278	1.346	0.1782	1563	1.065	0.287	2456	1.048	0.2948	259	-0.369	0.7118
HLA-A	rs3094141	6	29909807	T	G	T	4278	0.461	0.6446	1563	0.409	0.6825	2456	0.21	0.8336	259	0.223	0.8237
HLA-A	rs2916801	6	29910286	T	C	C	4278	-1.364	0.1725	1563	-0.409	0.6826	2456	-1.496	0.1345	259	0.068	0.9456
HLA-A	rs2571381	6	29912830	T	C	T	4278	1.347	0.1778	1563	0.408	0.6829	2456	1.475	0.1403	259	-0.068	0.946
HLA-A	rs2499	6	29913542	T	G	T	4278	0.455	0.6494	1563	0.408	0.6835	2456	0.204	0.8387	259	0.219	0.8263
HLA-A	rs6921314	6	29914220	A	G	A	2500	1.566	0.1175	NA	NA	NA	2456	1.502	0.133	44	0.577	0.5641
HLA-A	rs2975046	6	29915149	A	G	G	4278	-0.519	0.6037	1563	-0.347	0.7287	2456	-0.374	0.7082	259	-0.105	0.9167
HLA-A	rs7745413	6	29915469	T	C	T	4278	0.703	0.4818	1563	0.155	0.8769	2456	1.192	0.2334	259	-1.192	0.2334
HLA-A	rs2735096	6	29915751	A	G	G	4278	-0.692	0.4892	1563	-0.506	0.6132	2456	-0.307	0.7587	259	-0.623	0.5335

HLA-A	rs1632883	6	29915993	A	C	C	4278	-0.872	0.3833	1563	0.522	0.6019	2456	-1.083	0.2787	259	-1.489	0.1366
HLA-A	rs9260285	6	29916098	T	C	C	4234	-0.632	0.5277	1563	-0.092	0.9269	2456	-0.47	0.6383	215	-0.967	0.3337
HLA-A	rs2517719	6	29916253	C	G	G	4278	-0.58	0.5622	1563	-0.606	0.5443	2456	0.059	0.9529	259	-1.048	0.2946
HLA-A	rs1632882	6	29916368	T	G	T	4278	0.774	0.4388	1563	0.708	0.4791	2456	0.995	0.3197	259	-1.657	0.09757
HLA-A	rs417162	6	29916505	T	C	C	4278	-1.66	0.09689	1563	-0.925	0.3548	2456	-1.891	0.05864	259	1.349	0.1773
HLA-A	rs1655900	6	29916618	A	G	A	4278	1.407	0.1593	1563	1.093	0.2746	2456	1.106	0.2689	259	-0.369	0.7124
HLA-A	rs1655903	6	29917005	T	C	C	4278	-0.875	0.3818	1563	-0.649	0.5166	2456	-0.559	0.576	259	-0.239	0.811
HLA-A	rs1655904	6	29917146	T	C	T	4278	0.454	0.65	1563	0.426	0.6699	2456	0.188	0.8506	259	0.217	0.8282
HLA-A	rs2517716	6	29917260	T	C	C	4278	-0.715	0.4747	1563	-0.769	0.4421	2456	-0.943	0.3455	259	1.888	0.05901
HLA-A	rs1632879	6	29917703	A	G	G	4278	-1.297	0.1948	1563	-0.426	0.67	2456	-1.394	0.1634	259	0.07	0.9444
HLA-A	rs2517713	6	29918099	T	G	G	4278	-1.575	0.1153	1563	-0.93	0.3526	2456	-1.784	0.07437	259	1.378	0.1683
HLA-A	rs9260384	6	29918236	A	G	A	4234	0.805	0.4208	1563	0	1	2456	0.773	0.4395	215	0.96	0.3373
HLA-A	rs1655906	6	29918254	A	T	A	4278	0.829	0.4074	1563	0.426	0.6704	2456	0.841	0.4002	259	-0.269	0.7881
HLA-A	rs2508037	6	29918436	T	C	T	4278	1.655	0.09799	1563	0.933	0.3508	2456	1.891	0.05858	259	-1.391	0.1641
HLA-A	rs3115637	6	29918453	A	G	G	4234	-0.834	0.4043	1563	0.004	0.9965	2456	-0.695	0.4869	215	-1.362	0.1731
HLA-A	rs3094674	6	29918538	C	G	G	4234	-0.833	0.4049	1563	0.004	0.9967	2456	-0.694	0.4877	215	-1.362	0.1731
HLA-A	rs1632876	6	29918619	T	C	C	4278	-0.454	0.6497	1563	-0.423	0.672	2456	-0.193	0.8467	259	-0.21	0.8333
HLA-A	rs7747114	6	29919774	A	G	A	4278	1.648	0.09935	1563	0.932	0.3513	2456	1.885	0.05948	259	-1.396	0.1628
HLA-A	rs9260466	6	29919900	A	T	T	3472	-0.066	0.9476	1016	1.516	0.1296	2456	-1.053	0.2924	NA	NA	NA
HLA-A	rs9260475	6	29920126	T	C	C	4278	-1.588	0.1122	1563	-1.117	0.2642	2456	-1.652	0.09845	259	1.376	0.1688
HLA-A	rs9260480	6	29920163	T	C	C	4234	-0.66	0.5091	1563	0.006	0.9953	2456	-0.469	0.6393	215	-1.362	0.1732
HLA-A	rs9260484	6	29920253	A	C	A	4278	1.644	0.1001	1563	0.936	0.3495	2456	1.876	0.06069	259	-1.392	0.164
HLA-A	rs1655912	6	29920465	A	C	A	4278	1.282	0.1999	1563	0.417	0.6765	2456	1.387	0.1655	259	-0.087	0.931
HLA-A	rs2975042	6	29920536	T	G	G	4278	-1.568	0.1169	1563	-0.936	0.3493	2456	-1.775	0.07597	259	1.392	0.164
HLA-A	rs9260528	6	29921192	A	G	G	2641	-0.57	0.5688	185	-0.012	0.9905	2456	-0.588	0.5568	NA	NA	NA
HLA-A	rs9260535	6	29921259	A	G	A	2641	0.569	0.5694	185	0.011	0.9908	2456	0.587	0.5573	NA	NA	NA
HLA-A	rs1632874	6	29922123	T	G	G	4278	-0.311	0.7554	1563	-0.392	0.695	2456	-0.033	0.9737	259	-0.201	0.8407
HLA-A	rs9260570	6	29922138	A	G	A	2641	0.655	0.5125	185	0.01	0.9922	2456	0.676	0.4988	NA	NA	NA
HLA-A	rs9260575	6	29922299	T	G	G	4234	-0.545	0.5855	1563	0.366	0.7142	2456	-0.593	0.5532	215	-1.404	0.1604
HLA-A	rs9260579	6	29922391	T	C	T	4278	1.568	0.117	1563	0.909	0.3633	2456	1.798	0.07222	259	-1.398	0.162
HLA-A	rs9260587	6	29922492	A	G	G	4234	-0.366	0.7143	1563	0.431	0.6665	2456	-0.413	0.6797	215	-1.391	0.1642
HLA-A	rs9260599	6	29922653	A	C	A	4278	1.563	0.1181	1563	0.908	0.3639	2456	1.792	0.07306	259	-1.399	0.162
HLA-A	rs16896742	6	29922740	A	G	A	4278	1.419	0.1558	1563	1.435	0.1513	2456	0.906	0.3649	259	-0.547	0.5845
HLA-A	rs9260606	6	29922817	A	C	C	2641	-0.555	0.5787	185	-0.008	0.9939	2456	-0.574	0.5661	NA	NA	NA
HLA-A	rs9260607	6	29922856	T	C	C	4234	-0.359	0.7195	1563	0.433	0.665	2456	-0.405	0.6853	215	-1.391	0.1641
HLA-A	rs7767668	6	29923023	T	C	C	4278	-1.898	0.05774	1563	-1.129	0.2591	2456	-2.031	0.04228	259	1.313	0.1891
HLA-A	rs9260632	6	29923290	T	G	T	4278	0.735	0.4623	1563	0.718	0.4727	2456	0.883	0.3771	259	-1.497	0.1343
HLA-A	rs2904758	6	29923351	A	G	G	4278	-1.273	0.203	1563	0.524	0.6	2456	-1.666	0.09574	259	-1.332	0.1828
HLA-A	rs9260648	6	29923722	A	C	C	2641	-0.532	0.5945	185	-0.001	0.9991	2456	-0.552	0.5812	NA	NA	NA
HLA-A	rs9260652	6	29923769	A	T	T	2641	-0.529	0.5966	185	0	0.9998	2456	-0.549	0.5831	NA	NA	NA
HLA-A	rs2571391	6	29923838	A	C	A	4278	1.096	0.273	1563	0.775	0.4381	2456	0.642	0.5206	259	0.572	0.5674
HLA-A	rs410406	6	29923890	T	C	C	2641	-0.527	0.5979	185	0.002	0.9985	2456	-0.547	0.5841	NA	NA	NA
HLA-A	rs397099	6	29923923	A	T	A	4234	0.317	0.7513	1563	-0.447	0.6548	2456	0.361	0.7181	215	1.392	0.164
HLA-A	rs3893538	6	29924425	T	C	T	4278	0.129	0.8974	1563	0.26	0.7951	2456	-0.213	0.831	259	0.543	0.5869

HLA-A	rs12665039	6	29924779	T	C	T	3168	0.659	0.5101	497	2.087	0.03691	2456	-0.118	0.906	215	-0.245	0.8066
HLA-A	rs2523942	6	29925086	T	G	G	4234	-0.583	0.5601	1563	0.094	0.9251	2456	-0.437	0.6621	215	-1.362	0.1731
HLA-A	rs9260676	6	29926139	A	C	C	4278	-0.12	0.9046	1563	0.555	0.5791	2456	-0.655	0.5127	259	0.166	0.8679
HLA-A	rs9260682	6	29926476	A	T	T	4093	-0.504	0.6144	1378	-0.315	0.7526	2456	-0.337	0.7362	259	-0.238	0.8116
HLA-A	rs1632994	6	29926597	T	C	T	4278	0.305	0.7607	1563	0.986	0.3243	2456	-0.621	0.5349	259	0.727	0.467
HLA-A	rs2735085	6	29927095	A	G	G	4278	-0.084	0.9329	1563	0.065	0.9484	2456	0.141	0.8883	259	-0.934	0.3504
HLA-A	rs2523937	6	29927221	C	G	C	4278	0.16	0.8728	1563	-0.065	0.9479	2456	-0.033	0.9734	259	0.914	0.3607
HLA-A	rs2571400	6	29927722	C	G	G	4278	-0.616	0.538	1563	-0.968	0.3331	2456	0.11	0.9125	259	-0.463	0.6431
HLA-A	rs2517689	6	29929253	T	C	C	4278	-0.52	0.6033	1563	-0.976	0.329	2456	0.236	0.8133	259	-0.441	0.6591
HLA-A	rs9260706	6	29929336	A	G	A	4278	0.646	0.5181	1563	0.547	0.5845	2456	0.365	0.7148	259	0.158	0.8746
HLA-A	rs2517688	6	29930323	T	C	T	4234	0.583	0.5599	1563	-0.073	0.9417	2456	0.421	0.674	215	1.362	0.1731
HLA-A	rs7739434	6	29930619	A	G	G	4278	-0.321	0.7481	1563	0.526	0.5988	2456	-0.52	0.6028	259	-0.995	0.3197
HLA-A	rs2394247	6	29930706	A	C	A	4278	0.493	0.6221	1563	0.937	0.3488	2456	-0.316	0.7523	259	0.674	0.5006
HLA-A	rs2517681	6	29932330	T	C	T	4278	0.895	0.3706	1563	1.716	0.0862	2456	-0.079	0.9372	259	-0.333	0.7391
HLA-A	rs9260734	6	29932666	A	G	A	4278	0.485	0.6277	1563	0.251	0.8015	2456	0.545	0.5857	259	-0.325	0.745
HLA-A	rs9393984	6	29932738	C	G	G	4278	-1.174	0.2403	1563	-0.924	0.3552	2456	-0.483	0.6292	259	-1.014	0.3106
HLA-A	rs3903160	6	29932897	A	G	G	4278	-0.812	0.4169	1563	-0.919	0.3582	2456	0.064	0.9488	259	-1.239	0.2152
HLA-A	rs3873283	6	29933000	A	G	G	4278	-0.246	0.806	1563	0.143	0.8864	2456	-0.544	0.5868	259	0.325	0.7454
HLA-A	rs2517679	6	29933169	A	T	T	4278	-0.708	0.479	1563	-1.934	0.05312	2456	-0.068	0.9461	259	2.082	0.03734
HLA-A	rs6457109	6	29933261	T	C	C	4278	-0.561	0.5746	1563	0.266	0.7904	2456	-1.073	0.2832	259	0.371	0.7109
HLA-A	rs2844806	6	29933439	T	C	T	4278	1.2	0.23	1563	1.157	0.2474	2456	0.875	0.3817	259	-0.657	0.5113
HLA-A	rs9260742	6	29933549	T	G	G	4278	-0.104	0.917	1563	0.5	0.6168	2456	-0.591	0.5545	259	0.167	0.8671
HLA-A	rs7776152	6	29933621	A	T	A	3731	0.107	0.9147	1016	0.405	0.6852	2456	-0.357	0.7213	259	0.702	0.4825
HLA-DQA2	rs9276105	6	32440525	A	T	T	4278	-0.481	0.6306	1563	0.075	0.9403	2456	-0.485	0.6278	259	-0.645	0.5188
HLA-DQA2	rs2859118	6	32440844	A	G	G	4278	-1.554	0.1201	1563	-1.107	0.2685	2456	-1.062	0.2881	259	-0.328	0.7432
HLA-DRB1	rs701831	6	32549395	T	C	C	4278	-2.477	0.01326	1563	-1.956	0.05042	2456	-1.311	0.19	259	-1.223	0.2211
HLA-DRB1	rs9270657	6	32566021	T	G	G	4278	-1.297	0.1945	1563	-0.691	0.4894	2456	-0.772	0.44	259	-1.197	0.2313
HLA-DRB1	rs2516049	6	32570400	T	C	T	4278	0.663	0.5071	1563	0.829	0.4069	2456	-0.027	0.9781	259	0.743	0.4577
HLA-DRB1	rs9270986	6	32574060	A	C	C	4278	-2.745	0.006043	1563	-1.601	0.1093	2456	-1.906	0.05666	259	-1.355	0.1753
HLA-DRB1	rs615672	6	32574171	C	G	C	4278	1.147	0.2513	1563	0.87	0.3843	2456	0.454	0.6499	259	1.128	0.2594
HLA-DRB1	rs660895	6	32577380	A	G	A	4278	0.92	0.3575	1563	1.736	0.08251	2456	-0.284	0.7762	259	0.35	0.7265
HLA-DQA2	rs2647009	6	32661615	A	T	A	4278	0.901	0.3674	1563	0.888	0.3746	2456	0.016	0.9868	259	1.431	0.1524
HLA-DQA2	rs3129719	6	32661779	T	G	G	4278	-3.444	0.000574	1563	-1.763	0.07782	2456	-1.911	0.05596	259	-3.777	0.0001584
HLA-DQA2	rs2858317	6	32662280	A	C	A	4278	3.035	0.002407	1563	1.36	0.174	2456	1.816	0.06934	259	3.401	0.000671
HLA-DQA2	rs9275292	6	32663289	A	C	A	4278	2.38	0.01729	1563	0.892	0.3723	2456	1.746	0.08081	259	2.106	0.03521
HLA-DQA2	rs9275293	6	32663308	T	C	T	2227	1.901	0.05734	1563	1.053	0.2924	405	0.641	0.5216	259	2.186	0.02883
HLA-DQA2	rs2647019	6	32663355	C	G	G	4278	-0.04	0.9681	1563	0.002	0.9982	2456	0.145	0.885	259	-0.614	0.5394
HLA-DQA2	rs5000634	6	32663564	A	G	G	4278	-0.057	0.9543	1563	0.614	0.5393	2456	-0.56	0.5753	259	-0.016	0.9872
HLA-DQA2	rs3129720	6	32663631	T	C	C	4278	-3.45	0.0005609	1563	-1.771	0.07658	2456	-1.913	0.05574	259	-3.779	0.0001573
HLA-DQA2	rs17427431	6	32663644	A	G	A	4278	3.456	0.0005487	1563	2.58	0.009876	2456	1.643	0.1004	259	2.648	0.008096
HLA-DQA2	rs5000632	6	32663688	T	C	C	4278	-1.667	0.09548	1563	-0.41	0.6818	2456	-1.615	0.1064	259	-0.796	0.4259
HLA-DQA2	rs6457617	6	32663851	T	C	T	4278	2.42	0.01552	1563	0.905	0.3656	2456	1.842	0.06548	259	1.941	0.05225
HLA-DQA2	rs6457620	6	32663999	C	G	C	4278	2.427	0.01523	1563	0.874	0.382	2456	1.875	0.06075	259	1.941	0.05225
HLA-DQA2	rs2647015	6	32664093	T	G	G	4278	-0.905	0.3656	1563	-0.89	0.3736	2456	-0.02	0.9842	259	-1.43	0.1527

HLA-DQA2	rs7745040	6	32664332	T	C	C	4278	-0.121	0.9035	1563	0.648	0.5171	2456	-0.639	0.5227	259	-0.116	0.9076
HLA-DQA2	rs2647012	6	32664458	T	C	C	4278	-3.148	0.001643	1563	-1.459	0.1445	2456	-1.814	0.06967	259	-3.624	0.0002905
HLA-DQA2	rs2395522	6	32664722	A	T	T	4278	-2.252	0.0243	1563	-0.868	0.3853	2456	-1.6	0.1096	259	-2.095	0.03614
HLA-DQA2	rs2647003	6	32664880	T	G	G	4278	-3.151	0.001628	1563	-1.461	0.1441	2456	-1.816	0.0693	259	-3.624	0.0002905
HLA-DQA2	rs9357152	6	32664960	A	G	G	4278	-1.753	0.07969	1563	-0.36	0.7185	2456	-1.766	0.07739	259	-0.799	0.4245
HLA-DQA2	rs9348891	6	32664971	A	G	G	4278	-1.753	0.07956	1563	-0.36	0.7185	2456	-1.767	0.07724	259	-0.799	0.4243
HLA-DQA2	rs9275307	6	32664990	A	T	A	1822	1.783	0.07453	1563	1.036	0.3003	NA	NA	NA	259	2.186	0.02883
HLA-DQA2	rs17499411	6	32665002	C	G	G	4278	-3.818	0.0001344	1563	-2.58	0.009871	2456	-2.128	0.03336	259	-2.627	0.008609
HLA-DQA2	rs17212469	6	32665153	T	G	T	4278	3.326	0.0008826	1563	2.58	0.009871	2456	1.492	0.1358	259	2.583	0.009798
HLA-DQA2	rs9394113	6	32665167	A	G	G	4278	-1.755	0.07929	1563	-0.36	0.7187	2456	-1.769	0.07688	259	-0.799	0.4241
HLA-DQA2	rs10484561	6	32665420	T	G	G	4278	-3.595	0.0003239	1563	-2.58	0.009871	2456	-1.895	0.05813	259	-2.439	0.01472
HLA-DQA2	rs2856665	6	32665597	A	G	G	4278	-0.794	0.427	1563	-0.909	0.3633	2456	0.032	0.9748	259	-1.092	0.2747
HLA-DQA2	rs9275312	6	32665728	A	G	A	4278	2.028	0.04252	1563	1.305	0.192	2456	1.489	0.1365	259	0.454	0.6499
HLA-DQA2	rs2646994	6	32665813	T	C	T	4278	0.879	0.3793	1563	0.911	0.3621	2456	-0.048	0.9619	259	1.481	0.1385
HLA-DQA2	rs9275319	6	32666295	A	G	A	4278	1.729	0.08381	1563	0.965	0.3344	2456	1.385	0.1661	259	0.391	0.6957
HLA-DQA2	rs9275323	6	32666609	T	C	C	4278	-0.903	0.3663	1563	-0.633	0.5264	2456	-0.308	0.7578	259	-1.166	0.2437
HLA-DQA2	rs9275324	6	32666635	T	C	C	2354	-2.056	0.0398	1563	-0.914	0.3606	532	-1.375	0.1693	259	-1.982	0.04745
HLA-DQA2	rs2856726	6	32666721	A	T	T	4278	-2.13	0.03317	1563	-0.911	0.3622	2456	-1.565	0.1175	259	-1.598	0.11
HLA-DQA2	rs9275329	6	32666831	T	G	T	4278	0.907	0.3642	1563	0.632	0.5271	2456	0.314	0.7532	259	1.166	0.2437
HLA-DQA2	rs9275330	6	32666875	A	G	A	4278	1.964	0.04951	1563	1.259	0.2082	2456	1.439	0.1502	259	0.46	0.6456
HLA-DQA2	rs9275332	6	32666943	A	G	A	4278	0.909	0.3631	1563	0.632	0.5276	2456	0.318	0.7507	259	1.166	0.2436
HLA-DQA2	rs17427564	6	32667067	T	C	C	4278	-3.587	0.0003348	1563	-2.565	0.01031	2456	-1.895	0.05808	259	-2.44	0.01469
HLA-DQA2	rs9275334	6	32667107	T	C	T	1822	1.793	0.07295	1563	1.046	0.2955	NA	NA	NA	259	2.186	0.0288
HLA-DQA2	rs3135006	6	32667119	T	C	C	4278	-3.481	0.0005003	1563	-1.775	0.07586	2456	-1.951	0.05108	259	-3.777	0.0001586
HLA-DQA2	rs2858312	6	32667230	C	G	C	4278	2.154	0.03123	1563	1.164	0.2446	2456	1.394	0.1634	259	1.605	0.1085
HLA-DQA2	rs2647040	6	32667280	A	G	G	4278	-3.047	0.002309	1563	-1.467	0.1424	2456	-1.67	0.095	259	-3.639	0.0002734
HLA-DQA2	rs9275338	6	32667343	A	T	A	4278	2.01	0.04446	1563	1.313	0.1891	2456	1.457	0.1451	259	0.454	0.6495
HLA-DQA2	rs17427599	6	32667364	T	C	T	4278	2.825	0.004727	1563	1.019	0.3083	2456	1.636	0.1019	259	3.941	8.12E-05
HLA-DQA2	rs9275351	6	32667793	A	C	C	1822	-1.796	0.07254	1563	-1.049	0.2942	NA	NA	NA	259	-2.186	0.0288
HLA-DQA2	rs9275356	6	32667850	C	G	C	1822	1.796	0.07243	1563	1.05	0.2939	NA	NA	NA	259	2.186	0.02878
HLA-DQA2	rs2647044	6	32667910	A	G	A	4278	0.011	0.9916	1563	0.021	0.983	2456	0.188	0.8507	259	-0.589	0.5557
HLA-DQA2	rs9275371	6	32668296	T	C	C	4278	-1.088	0.2767	1563	-0.628	0.5298	2456	-0.557	0.5778	259	-1.164	0.2445
HLA-DQA2	rs2858310	6	32668323	A	G	A	4278	3.061	0.002208	1563	1.44	0.1499	2456	1.708	0.08756	259	3.642	0.0002709
HLA-DQA2	rs2647046	6	32668336	A	C	C	4278	-3.065	0.002179	1563	-1.435	0.1512	2456	-1.717	0.08593	259	-3.642	0.000271
HLA-DQA2	rs9275379	6	32668804	T	C	T	4278	2.085	0.03708	1563	0.999	0.318	2456	1.164	0.2443	259	2.435	0.01491
HLA-DQA2	rs9275384	6	32668898	T	C	C	4278	-1.606	0.1082	1563	-0.94	0.3472	2456	-0.532	0.5946	259	-2.58	0.00989
HLA-DQA2	rs9275390	6	32669156	T	C	C	4278	-1.587	0.1124	1563	-0.909	0.3636	2456	-0.533	0.5943	259	-2.579	0.009898
HLA-DQA2	rs9275393	6	32669439	A	G	A	4278	1.588	0.1124	1563	0.909	0.3636	2456	0.533	0.5942	259	2.579	0.009896
HLA-DQA2	rs9275396	6	32669528	A	T	A	4278	2.054	0.03999	1563	0.908	0.3637	2456	1.191	0.2335	259	2.447	0.0144
HLA-DQA2	rs2647050	6	32669767	T	C	C	4278	-1.994	0.0462	1563	-0.833	0.4046	2456	-1.453	0.1461	259	-1.579	0.1143
HLA-DQA2	rs2858308	6	32670000	T	G	T	4278	0.758	0.4486	1563	0.792	0.4284	2456	-0.073	0.9419	259	1.358	0.1744
HLA-DQA2	rs9275407	6	32670037	T	G	T	4278	1.597	0.1104	1563	0.908	0.364	2456	0.534	0.5933	259	2.614	0.008946
HLA-DQA2	rs9275417	6	32670214	A	C	C	4278	-1.588	0.1123	1563	-0.908	0.3641	2456	-0.534	0.5932	259	-2.579	0.009908
HLA-DQA2	rs9275418	6	32670244	A	G	G	4278	-0.934	0.3504	1563	-0.628	0.5303	2456	-0.353	0.724	259	-1.166	0.2436

HLA-DQA2	rs2856718	6	32670255	T	C	T	4278	1.994	0.04618	1563	0.833	0.4046	2456	1.454	0.1461	259	1.579	0.1142
HLA-DQA2	rs9275421	6	32670477	A	C	A	4278	1.588	0.1123	1563	0.907	0.3643	2456	0.534	0.5933	259	2.58	0.009893
HLA-DQA2	rs9275424	6	32670576	A	G	G	4278	-1.488	0.1367	1563	-0.894	0.3712	2456	-0.526	0.5988	259	-2.232	0.02561
HLA-DQA2	rs9275425	6	32670874	A	C	A	4278	1.654	0.09817	1563	0.951	0.3417	2456	0.531	0.5952	259	2.749	0.00597
HLA-DQA2	rs9275427	6	32670915	T	C	T	4278	2.033	0.04201	1563	1.319	0.1871	2456	0.552	0.5808	259	3.323	0.0008901
HLA-DQA2	rs2856705	6	32670956	T	C	T	4278	0.618	0.5366	1563	0.836	0.4034	2456	-0.235	0.8141	259	1.183	0.2369
HLA-DQA2	rs9275428	6	32670978	A	G	G	4278	-1.653	0.09825	1563	-0.95	0.3422	2456	-0.531	0.5952	259	-2.751	0.005949
HLA-DQA2	rs13192471	6	32671103	T	C	C	4278	-2.664	0.007733	1563	-1.827	0.06773	2456	-1.201	0.2298	259	-2.639	0.008312
HLA-DQA2	rs9275431	6	32671140	A	G	A	4278	2.184	0.02898	1563	1.827	0.06774	2456	0.531	0.5953	259	2.752	0.005928
HLA-DQA2	rs9275432	6	32671185	T	G	T	4278	2.184	0.02899	1563	1.827	0.06773	2456	0.531	0.5955	259	2.752	0.005921
HLA-DQA2	rs1794275	6	32671248	A	G	A	4278	2.531	0.01136	1563	1.765	0.07763	2456	1.128	0.2594	259	2.48	0.01313
HLA-DQA2	rs9275438	6	32671508	T	C	T	4278	2.195	0.02817	1563	1.828	0.06761	2456	0.534	0.5934	259	2.787	0.005324
HLA-DQA2	rs9275439	6	32671521	T	C	C	4278	-2.185	0.02891	1563	-1.828	0.06756	2456	-0.531	0.5956	259	-2.755	0.005878
HLA-DQA2	rs9275441	6	32671676	A	C	A	4278	2.184	0.02895	1563	1.828	0.0676	2456	0.53	0.5958	259	2.754	0.00589
HLA-DQA2	rs9275468	6	32672412	A	G	A	4278	2.665	0.007694	1563	1.826	0.06787	2456	1.209	0.2265	259	2.622	0.008733
HLA-DQA2	rs9275475	6	32672556	A	G	G	4278	-2.668	0.00764	1563	-1.825	0.06794	2456	-1.212	0.2256	259	-2.626	0.008647
HLA-DQA2	rs9275480	6	32672668	A	G	A	4278	2.674	0.007492	1563	1.825	0.06804	2456	1.22	0.2226	259	2.63	0.008549
HLA-DQA2	rs9275482	6	32672932	T	G	T	4278	2.166	0.03035	1563	1.824	0.06814	2456	0.873	0.3829	259	1.633	0.1024
HLA-DQA2	rs9275492	6	32673446	T	C	T	4278	2.669	0.007607	1563	1.824	0.06818	2456	1.215	0.2244	259	2.626	0.008631
HLA-DQA2	rs9275517	6	32674649	A	G	G	4278	-2.38	0.01731	1563	-1.624	0.1044	2456	-1.334	0.1823	259	-1.577	0.1148
HLA-DQA2	rs9275521	6	32674952	T	C	C	4278	-3.104	0.00191	1563	-1.396	0.1626	2456	-1.791	0.07334	259	-3.67	0.0002424
HLA-DQA2	rs9275522	6	32674970	T	C	T	4278	0.538	0.5903	1563	0.932	0.3516	2456	-0.015	0.988	259	-0.054	0.957
HLA-DQA2	rs9275523	6	32674994	A	C	A	4278	0.568	0.5702	1563	0.931	0.3516	2456	0.024	0.981	259	-0.054	0.957
HLA-DQA2	rs9275524	6	32675109	T	C	C	4278	-2.379	0.01735	1563	-1.623	0.1046	2456	-1.333	0.1825	259	-1.577	0.1148
HLA-DQA2	rs12525220	6	32675470	A	G	A	2715	1.103	0.27	NA	NA	NA	2456	0.606	0.5448	259	1.707	0.08791
HLA-DQA2	rs9275555	6	32677088	T	C	T	4278	0.535	0.5925	1563	0.931	0.3517	2456	-0.019	0.9849	259	-0.054	0.9568
HLA-DQA2	rs16898262	6	32677397	A	G	G	4278	-0.686	0.4927	1563	-0.852	0.3942	2456	0.214	0.8303	259	-1.355	0.1754
HLA-DQA2	rs17615220	6	32677413	A	G	G	1607	-3.11	0.001868	1563	-2.688	0.007194	NA	NA	NA	44	-2.779	0.005457
HLA-DQA2	rs10947332	6	32677440	A	G	A	4278	3.272	0.001067	1563	2.587	0.009668	2456	1.42	0.1555	259	2.569	0.0102
HLA-DQA2	rs9380318	6	32677669	T	C	T	4278	2.384	0.01713	1563	1.633	0.1025	2456	1.332	0.1829	259	1.577	0.1149
HLA-DQA2	rs9275561	6	32677789	T	C	T	4278	0.543	0.587	1563	0.945	0.3445	2456	-0.02	0.9843	259	-0.054	0.9567
HLA-DQA2	rs4947344	6	32677846	T	C	C	4278	-2.502	0.01233	1563	-1.865	0.06217	2456	-1.387	0.1653	259	-1.316	0.1881
HLA-DQA2	rs9275563	6	32677912	T	C	T	4278	0.395	0.6932	1563	0.106	0.9154	2456	0.511	0.609	259	-0.233	0.8161
HLA-DQA2	rs9275564	6	32677927	A	C	A	4278	0.55	0.5823	1563	0.951	0.3416	2456	-0.015	0.9881	259	-0.055	0.9565
HLA-DQA2	rs9275565	6	32677938	T	C	C	4278	-2.387	0.01697	1563	-1.639	0.1012	2456	-1.332	0.183	259	-1.576	0.115
HLA-DQA2	rs9275566	6	32678087	A	T	A	4278	0.843	0.399	1563	0.954	0.3401	2456	0.424	0.6719	259	-0.22	0.8262
HLA-DQA2	rs4273729	6	32678597	C	G	G	4278	-2.388	0.01692	1563	-1.641	0.1008	2456	-1.331	0.183	259	-1.576	0.115
HLA-DQA2	rs17581326	6	32678753	A	G	G	4278	-1.995	0.04604	1563	-0.832	0.4055	2456	-1.457	0.1451	259	-1.577	0.1147
HLA-DQA2	rs9275572	6	32678999	A	G	G	4278	-2.389	0.01688	1563	-1.643	0.1005	2456	-1.331	0.1831	259	-1.576	0.115
HLA-DQA2	rs9275573	6	32679146	C	G	G	4278	-2.386	0.01704	1563	-1.643	0.1004	2456	-1.326	0.1849	259	-1.578	0.1147
HLA-DQA2	rs9275576	6	32679326	T	C	C	4278	-0.034	0.973	1563	0.106	0.9158	2456	0.136	0.8915	259	-0.817	0.4137
HLA-DQA2	rs9275578	6	32679384	T	G	T	4278	0.601	0.5479	1563	0.959	0.3374	2456	0.125	0.9006	259	-0.299	0.7649
HLA-DQA2	rs9275580	6	32679462	A	G	G	4278	-0.594	0.5524	1563	-0.972	0.3313	2456	0.049	0.9605	259	-0.18	0.8568
HLA-DQA2	rs12203586	6	32679591	C	G	C	4278	1.987	0.04687	1563	0.831	0.4062	2456	1.448	0.1476	259	1.578	0.1146

HLA-DQA2	rs2647083	6	32679722	C	G	G	4278	-1.947	0.05159	1563	-0.83	0.4068	2456	-1.393	0.1635	259	-1.582	0.1136
HLA-DQA2	rs2647084	6	32679779	A	T	T	4278	-2.022	0.04322	1563	-0.829	0.407	2456	-1.493	0.1354	259	-1.581	0.1139
HLA-DQA2	rs12527228	6	32679992	T	C	T	2715	1.122	0.2617	NA	NA	NA	2456	0.655	0.5126	259	1.617	0.1058
HLA-DQA2	rs9275582	6	32680070	T	C	T	4278	0.71	0.4775	1563	0.965	0.3346	2456	0.24	0.8102	259	-0.223	0.8236
HLA-DQA2	rs9391744	6	32680227	T	C	T	4278	2.407	0.01609	1563	1.83	0.06731	2456	1.389	0.1649	259	1.011	0.3119
HLA-DQA2	rs9275585	6	32680350	T	C	C	4278	-0.468	0.6397	1563	-0.966	0.3339	2456	0.115	0.9085	259	0.117	0.9066
HLA-DQA2	rs9275588	6	32680423	A	G	A	4278	2.834	0.004604	1563	2.408	0.01602	2456	1.542	0.1231	259	0.852	0.3943
HLA-DQA2	rs9275590	6	32680480	T	C	C	4278	-0.684	0.494	1563	-0.967	0.3336	2456	-0.204	0.8382	259	0.224	0.8224
HLA-DQA2	rs7764819	6	32680576	T	G	G	4278	-0.217	0.8281	1563	1.613	0.1068	2456	-0.809	0.4187	259	-2.354	0.01858
HLA-DQA2	rs17581425	6	32680585	T	C	C	4278	-2.409	0.016	1563	-1.828	0.06754	2456	-1.392	0.164	259	-1.014	0.3108
HLA-DQA2	rs9275592	6	32680620	T	G	G	1822	-1.771	0.07654	1563	-1.029	0.3036	NA	NA	NA	259	-2.17	0.02998
HLA-DQA2	rs7764856	6	32680640	A	T	A	4278	0.782	0.4345	1563	-0.279	0.7804	2456	0.738	0.4606	259	1.589	0.112
HLA-DQA2	rs9275593	6	32680843	A	G	A	4278	0.647	0.5175	1563	0.969	0.3325	2456	0.154	0.8779	259	-0.224	0.8231
HLA-DQA2	rs7765379	6	32680928	T	G	G	4278	-0.227	0.8207	1563	1.612	0.107	2456	-0.821	0.4115	259	-2.351	0.01872
HLA-DQA2	rs7745656	6	32680970	T	G	T	4278	2.409	0.016	1563	1.827	0.06773	2456	1.393	0.1637	259	1.014	0.3106
HLA-DQA2	rs2647087	6	32681049	A	C	C	4278	-2.409	0.01598	1563	-1.827	0.06774	2456	-1.393	0.1635	259	-1.014	0.3105
HLA-DQA2	rs2858332	6	32681161	T	G	T	4278	2.677	0.007428	1563	2.41	0.01594	2456	1.277	0.2015	259	1.026	0.305
HLA-DQA2	rs2858331	6	32681277	A	G	G	4278	-4.516	6.30E-06	1563	-3.202	0.001364	2456	-2.569	0.01021	259	-2.578	0.009936
HLA-DQA2	rs9275595	6	32681355	T	C	C	4278	-0.635	0.5255	1563	-1.014	0.3107	2456	-0.102	0.9185	259	0.226	0.8215
HLA-DQA2	rs7454108	6	32681483	T	C	T	2227	1.778	0.07538	1563	0.968	0.3332	405	0.536	0.5918	259	2.166	0.03027
HLA-DQA2	rs2647088	6	32681518	A	G	G	4278	-2.452	0.01421	1563	-1.833	0.06675	2456	-1.443	0.1489	259	-1.017	0.3091
HLA-DQA2	rs3957146	6	32681530	T	C	T	2227	1.776	0.07581	1563	0.967	0.3336	405	0.532	0.5946	259	2.166	0.03032
HLA-DQA2	rs2647089	6	32681568	T	C	C	4278	-2.472	0.01345	1563	-1.834	0.06671	2456	-1.468	0.142	259	-1.019	0.3082
HLA-DQA2	rs9275596	6	32681631	T	C	T	4278	3.185	0.001449	1563	1.472	0.141	2456	1.838	0.06605	259	3.667	0.0002458
HLA-DQA2	rs3916766	6	32681645	A	T	A	4278	2.489	0.0128	1563	1.831	0.06714	2456	1.494	0.1352	259	1.019	0.3082
HLA-DQA2	rs6935723	6	32681669	T	C	C	4278	-2.521	0.01169	1563	-1.876	0.06065	2456	-1.499	0.134	259	-1.023	0.3061
HLA-DQA2	rs3998158	6	32681992	T	C	C	4278	-0.038	0.9701	1563	-0.942	0.346	2456	0.311	0.7555	259	1.204	0.2287
HLA-DQA2	rs3957148	6	32682137	A	G	A	3660	2.447	0.01441	1563	1.51	0.1309	1838	1.287	0.198	259	2.059	0.03954
HLA-DQA2	rs3104404	6	32682174	A	C	A	4278	2.758	0.005823	1563	1.539	0.1237	2456	2.043	0.04101	259	1.133	0.2572
HLA-DQA2	rs3104405	6	32682308	A	C	A	4278	1.423	0.1547	1563	0.467	0.6403	2456	1.433	0.1519	259	0.224	0.8228
HLA-DQA2	rs3997848	6	32682394	T	G	G	4278	-1.047	0.2952	1563	-1.114	0.2653	2456	-0.093	0.926	259	-1.232	0.2178
HLA-DQA2	rs3997849	6	32682402	T	C	T	4278	1.079	0.2804	1563	1.089	0.276	2456	0.1	0.9203	259	1.403	0.1607
HLA-DQA2	rs9275599	6	32682429	T	C	C	3918	-2.031	0.0423	1563	-0.853	0.3937	2096	-1.44	0.1498	259	-1.706	0.08809
HLA-DQA2	rs9275601	6	32682664	T	C	T	4278	0.035	0.9718	1563	-0.339	0.7349	2456	-0.268	0.7888	259	1.801	0.07177
HLA-DQA2	rs3873444	6	32682724	T	C	C	4278	-0.532	0.5948	1563	0.376	0.707	2456	-0.416	0.6776	259	-1.805	0.07104
HLA-DQA2	rs9275602	6	32682812	A	C	C	4278	-0.34	0.734	1563	0.337	0.736	2456	-0.345	0.7298	259	-1.146	0.252
HLA-DQA2	rs3892710	6	32682862	T	C	C	4278	-0.83	0.4064	1563	0.767	0.4429	2456	-1.318	0.1876	259	-1.201	0.2296
HLA-DQA2	rs3997854	6	32682915	T	G	T	4278	2.035	0.04182	1563	0.561	0.5745	2456	1.984	0.04721	259	0.782	0.4345
HLA-DQA2	rs3104410	6	32683324	T	C	C	4278	-0.091	0.9273	1563	0.272	0.7855	2456	-0.549	0.5832	259	0.65	0.5155
HLA-DQA2	rs6935940	6	32683691	A	C	A	4278	0.505	0.6136	1563	0.229	0.819	2456	1.066	0.2864	259	-1.793	0.07298
HLA-DQA2	rs6915986	6	32683898	T	C	C	2671	-1.599	0.1098	NA	NA	NA	2456	-0.989	0.3229	215	-2.295	0.02173
HLA-DQA2	rs6936863	6	32684029	C	G	C	4278	0.269	0.7879	1563	0.095	0.924	2456	0.991	0.3218	259	-2.192	0.02838
HLA-DQA2	rs6936707	6	32684069	T	C	T	2671	1.604	0.1087	NA	NA	NA	2456	0.994	0.3203	215	2.295	0.02172
HLA-DQA2	rs9275614	6	32684257	A	G	A	4278	1.561	0.1186	1563	0.329	0.7423	2456	1.874	0.06098	259	-0.234	0.8148

HLA-DQA2	rs9275615	6	32684272	A	T	T	4278	-1.556	0.1196	1563	-0.33	0.7414	2456	-1.867	0.06195	259	0.234	0.8151
HLA-DQA2	rs6916779	6	32684317	T	C	T	4278	0.363	0.7169	1563	0.33	0.7414	2456	0.773	0.4394	259	-1.718	0.08586
HLA-DQA2	rs5024431	6	32684344	A	G	G	4278	-0.223	0.8234	1563	-0.1	0.92	2456	-0.924	0.3556	259	2.184	0.02894
HLA-DQA2	rs5024432	6	32684468	T	C	T	4278	0.148	0.882	1563	0.16	0.8732	2456	-0.281	0.7789	259	1.076	0.282
HLA-DQA2	rs3104395	6	32685426	A	G	A	4278	0.296	0.7671	1563	-0.139	0.8897	2456	0.262	0.7935	259	0.738	0.4604
HLA-DQA2	rs3129734	6	32685503	T	C	T	4278	0.529	0.5969	1563	-0.082	0.9345	2456	0.508	0.6116	259	0.788	0.4309
HLA-DQA2	rs3916765	6	32685550	A	G	G	1971	-1.023	0.3064	1563	-0.248	0.8041	149	-2.37	0.01779	259	-0.415	0.6783
HLA-DQA2	rs3104397	6	32685673	A	G	A	4278	0.544	0.5867	1563	-0.052	0.9584	2456	0.504	0.6142	259	0.785	0.4323
HLA-DQA2	rs3104398	6	32685685	A	G	A	4278	0.399	0.6897	1563	-0.479	0.6323	2456	0.687	0.4922	259	0.684	0.4942
HLA-DQA2	rs9275652	6	32685822	C	G	C	4278	0.067	0.9469	1563	0.48	0.6311	2456	-0.472	0.6369	259	0.545	0.5859
HLA-DQA2	rs9275653	6	32685865	A	G	A	4278	1.377	0.1684	1563	1.461	0.144	2456	0.452	0.6515	259	0.618	0.5367
HLA-DQA2	rs3129736	6	32685953	T	C	T	4278	1.921	0.05476	1563	1.624	0.1045	2456	0.797	0.4256	259	1.365	0.1724
HLA-DQA2	rs12183091	6	32685999	A	T	T	4278	-1.469	0.1417	1563	-1.097	0.2728	2456	-0.985	0.3244	259	-0.244	0.8073
HLA-DQA2	rs12177980	6	32686084	A	G	A	4278	1.455	0.1457	1563	1.096	0.2731	2456	0.966	0.3341	259	0.247	0.8051
HLA-DQA2	rs9275659	6	32686103	A	C	A	4278	0.071	0.9433	1563	0.484	0.6286	2456	-0.468	0.6396	259	0.543	0.5869
HLA-DQA2	rs3104401	6	32687358	A	G	G	4278	-0.468	0.6397	1563	0.076	0.9397	2456	-0.424	0.6716	259	-0.783	0.4335
HLA-DQA2	rs9469225	6	32687435	A	T	T	4278	-0.466	0.6411	1563	0.076	0.9397	2456	-0.421	0.6741	259	-0.785	0.4322
HLA-DQA2	rs9275686	6	32687570	A	G	A	4278	0.09	0.9284	1563	0.485	0.6274	2456	-0.445	0.6561	259	0.544	0.5865
HLA-DQA2	rs9275692	6	32687766	A	T	T	4278	-0.467	0.6406	1563	0.075	0.9402	2456	-0.421	0.6739	259	-0.786	0.432
HLA-DQA2	rs9469228	6	32687890	A	G	G	4278	-1.5	0.1336	1563	-1.096	0.2732	2456	-1.01	0.3123	259	-0.292	0.7699
HLA-DQA2	rs9275698	6	32687973	A	G	G	4278	-0.409	0.6826	1563	-0.355	0.7227	2456	0.079	0.937	259	-1.033	0.3014
HLA-DQA2	rs9275704	6	32688133	C	G	G	4278	-0.449	0.6535	1563	0.075	0.9405	2456	-0.438	0.6616	259	-0.66	0.5092
HLA-DQA2	rs9275715	6	32688288	A	G	A	4278	0.469	0.639	1563	-0.075	0.9404	2456	0.423	0.672	259	0.786	0.4317
HLA-DQA2	rs9275716	6	32688302	T	C	C	4278	-1.536	0.1246	1563	-1.627	0.1038	2456	-0.233	0.8158	259	-1.529	0.1264
HLA-DQA2	rs9275733	6	32688779	A	G	A	1690	0.29	0.7716	1563	-0.075	0.9406	127	1.32	0.1867	NA	NA	NA
HLA-DQA2	rs9275738	6	32688839	T	C	T	4278	0.075	0.9402	1563	0.487	0.6262	2456	-0.466	0.6411	259	0.544	0.5864
HLA-DQA2	rs9275741	6	32688872	A	G	A	4278	0.076	0.9398	1563	0.488	0.6257	2456	-0.469	0.639	259	0.553	0.5803
HLA-DQA2	rs9275765	6	32689324	A	T	T	4278	-1.949	0.05129	1563	-1.628	0.1035	2456	-0.805	0.4208	259	-1.443	0.1491
HLA-DQA2	rs9275766	6	32689362	A	G	G	4278	-0.463	0.6431	1563	-0.177	0.8595	2456	-0.075	0.9403	259	-1.218	0.2233
HLA-DQA2	rs9275772	6	32689503	T	C	C	4278	-1.958	0.05019	1563	-1.628	0.1035	2456	-0.817	0.4138	259	-1.443	0.1491
HLA-DQA2	rs9461799	6	32689529	T	C	C	4278	-1.545	0.1225	1563	-1.095	0.2736	2456	-1.066	0.2866	259	-0.306	0.7595
HLA-DQA2	rs9275793	6	32690027	A	G	A	4278	1.957	0.05039	1563	1.628	0.1035	2456	0.815	0.415	259	1.443	0.1491
HLA-DQA2	rs9275828	6	32690740	T	C	T	4278	0.479	0.6317	1563	-0.072	0.9428	2456	0.434	0.6641	259	0.787	0.4311
HLA-DQA2	rs763026	6	32691745	T	C	T	4278	0.049	0.9613	1563	0.486	0.6271	2456	-0.497	0.6194	259	0.533	0.5939
HLA-DQA2	rs9469246	6	32692227	T	G	G	4278	-1.587	0.1124	1563	-1.121	0.2623	2456	-1.063	0.2877	259	-0.424	0.6714
HLA-DQA2	rs9275903	6	32692273	T	C	T	4278	0.45	0.6529	1563	-0.105	0.9167	2456	0.463	0.6436	259	0.66	0.5095
HLA-DQA2	rs2859064	6	32692812	T	C	C	4278	-1.561	0.1186	1563	-1.119	0.2631	2456	-1.064	0.2873	259	-0.317	0.7512
HLA-DQA2	rs9275936	6	32692933	A	G	A	4278	0.031	0.9756	1563	0.484	0.6283	2456	-0.518	0.6046	259	0.53	0.5963
HLA-DQA2	rs2858892	6	32693242	A	G	G	4278	-1.56	0.1189	1563	-1.117	0.264	2456	-1.063	0.2878	259	-0.321	0.7482
HLA-DQA2	rs9275970	6	32693615	T	C	C	4278	-0.023	0.9815	1563	-0.482	0.6296	2456	0.526	0.5987	259	-0.53	0.5963
HLA-DQA2	rs9276002	6	32694540	T	C	C	4278	-0.481	0.6308	1563	0.094	0.9253	2456	-0.503	0.6153	259	-0.636	0.5247
HLA-DQA2	rs9276013	6	32694724	A	T	A	4278	1.932	0.05335	1563	1.628	0.1035	2456	0.783	0.4338	259	1.442	0.1492
HLA-DQA2	rs9276014	6	32694738	T	C	C	4278	-1.931	0.0535	1563	-1.628	0.1035	2456	-0.781	0.4347	259	-1.442	0.1492
HLA-DQA2	rs9276015	6	32694759	C	G	G	4278	-1.849	0.06448	1563	-1.501	0.1334	2456	-0.765	0.4442	259	-1.471	0.1412

HLA-DQA2	rs5029394	6	32695082	A	G	G	4278	-1.928	0.0538	1563	-1.628	0.1035	2456	-0.778	0.4366	259	-1.442	0.1492
HLA-DQA2	rs5029393	6	32695168	A	G	A	4278	1.928	0.05392	1563	1.628	0.1035	2456	0.777	0.4373	259	1.442	0.1492
HLA-DQA2	rs9276024	6	32695264	T	C	C	4278	-1.834	0.06662	1563	-1.579	0.1143	2456	-0.775	0.4383	259	-1.189	0.2345
HLA-DQA2	rs9276132	6	32697755	A	G	G	4278	-0.013	0.9898	1563	-0.474	0.6353	2456	0.533	0.5937	259	-0.53	0.5963
HLA-DQA2	rs2859113	6	32697785	C	G	G	4278	-1.814	0.06965	1563	-1.043	0.2968	2456	-1.298	0.1943	259	-0.814	0.4158
HLA-DQA2	rs2859112	6	32698013	T	C	T	4278	1.55	0.1212	1563	1.099	0.2717	2456	1.062	0.2884	259	0.329	0.7421
HLA-DQA2	rs9276145	6	32698026	A	C	C	4278	-0.498	0.6186	1563	0.055	0.9565	2456	-0.492	0.6226	259	-0.642	0.521
HLA-DQA2	rs9276149	6	32698156	T	C	T	4278	0.017	0.9868	1563	0.468	0.6394	2456	-0.524	0.6003	259	0.53	0.5962
HLA-DQA2	rs2859109	6	32698207	A	G	G	4278	-1.547	0.1219	1563	-1.096	0.2732	2456	-1.06	0.2892	259	-0.331	0.7407
HLA-DQA2	rs9276158	6	32698391	T	C	C	4278	-0.509	0.6107	1563	0.045	0.9641	2456	-0.501	0.6167	259	-0.638	0.5234
HLA-DQA2	rs9276160	6	32698421	T	C	C	4278	-1.947	0.05155	1563	-1.628	0.1035	2456	-0.802	0.4224	259	-1.443	0.1491
HLA-DQA2	rs17840161	6	32698603	C	G	G	2671	-0.145	0.8846	NA	NA	NA	2456	-0.131	0.8959	215	-0.069	0.9447
HLA-DQA2	rs7771946	6	32698800	T	C	T	4278	1.193	0.233	1563	1.628	0.1035	2456	-0.168	0.8669	259	1.364	0.1725
HLA-DQA2	rs7751699	6	32698899	A	G	A	4278	2.17	0.02999	1563	1.522	0.128	2456	1.168	0.2427	259	1.484	0.1379
HLA-DQA2	rs9276171	6	32698918	A	G	G	4278	-0.064	0.9489	1563	-0.337	0.7363	2456	0.33	0.7417	259	-0.448	0.654
HLA-DQA2	rs9276172	6	32698947	C	G	C	4278	0	0.9997	1563	0.453	0.6509	2456	-0.533	0.5943	259	0.53	0.5961
HLA-DQA2	rs7751856	6	32698988	A	C	A	4278	1.905	0.05674	1563	1.058	0.2901	2456	1.331	0.183	259	1.045	0.2962
HLA-DQA2	rs2859102	6	32699054	C	G	C	4278	2.141	0.03231	1563	1.522	0.128	2456	1.178	0.2389	259	1.335	0.182
HLA-DQA2	rs9276180	6	32699116	T	C	C	4278	-1.951	0.05101	1563	-1.628	0.1036	2456	-0.808	0.4189	259	-1.443	0.1491
HLA-DQA2	rs9276181	6	32699125	C	G	C	4278	1.952	0.05095	1563	1.628	0.1036	2456	0.809	0.4185	259	1.443	0.1491
HLA-DQA2	rs9276185	6	32699179	A	C	C	4278	-1.918	0.05513	1563	-1.628	0.1036	2456	-0.766	0.4437	259	-1.437	0.1508
HLA-DQA2	rs9276186	6	32699197	A	G	A	4278	1.974	0.04834	1563	1.628	0.1036	2456	0.839	0.4016	259	1.443	0.1492
HLA-DQA2	rs9469257	6	32699216	A	G	A	4278	1.557	0.1194	1563	1.062	0.2882	2456	1.153	0.2488	259	0.168	0.8662
HLA-DQA2	rs9276189	6	32699325	A	G	G	4234	-1.023	0.3062	1563	-1.79	0.0734	2456	0.471	0.6376	215	-1.306	0.1917
HLA-DQA2	rs9276190	6	32699350	T	C	C	4278	-0.053	0.9577	1563	0.446	0.6553	2456	-0.598	0.5497	259	0.53	0.5961
HLA-DQA2	rs2859100	6	32699479	C	G	C	4278	1.333	0.1824	1563	0.964	0.3348	2456	0.96	0.3372	259	0.094	0.9247
HLA-DQA2	rs9276193	6	32699532	A	T	A	4278	0.67	0.5027	1563	0.037	0.9706	2456	0.552	0.581	259	0.934	0.3505
HLA-DQA2	rs9276197	6	32699587	T	C	C	4278	-1.95	0.05121	1563	-1.064	0.2875	2456	-1.404	0.1604	259	-0.988	0.3231
HLA-DQA2	rs9276212	6	32699974	A	T	A	4278	0.655	0.5124	1563	0.041	0.9671	2456	0.554	0.5794	259	0.855	0.3928
HLA-DQA2	rs9276213	6	32700009	T	G	T	4278	0.606	0.5443	1563	0.044	0.965	2456	0.554	0.5798	259	0.651	0.5149
HLA-DQA2	rs2858884	6	32700083	A	C	A	4278	0.073	0.9421	1563	-0.443	0.6578	2456	0.645	0.5189	259	-0.603	0.5464
HLA-DQA2	rs9276227	6	32700684	T	C	T	4278	0.671	0.5025	1563	0.048	0.9616	2456	0.57	0.5687	259	0.852	0.3944
HLA-DQA2	rs9276228	6	32700700	T	C	C	4278	-1.954	0.05071	1563	-1.628	0.1036	2456	-0.812	0.417	259	-1.443	0.149
HLA-DQA2	rs2859090	6	32700833	A	G	G	4278	-0.078	0.9375	1563	0.443	0.6579	2456	-0.652	0.5141	259	0.603	0.5467
HLA-DQA2	rs9276234	6	32700848	A	T	T	4278	-1.989	0.04672	1563	-1.067	0.286	2456	-1.453	0.1463	259	-0.988	0.323
HLA-DQA2	rs9276239	6	32701083	C	G	C	4278	1.954	0.0507	1563	1.628	0.1036	2456	0.812	0.4169	259	1.443	0.149
HLA-DQA2	rs9276240	6	32701098	T	G	G	4278	-1.955	0.05056	1563	-1.628	0.1036	2456	-0.813	0.416	259	-1.443	0.149
HLA-DQA2	rs2859079	6	32702381	T	G	T	4278	0.089	0.929	1563	-0.439	0.6606	2456	0.664	0.5069	259	-0.603	0.5466
HLA-DQA2	rs2859078	6	32702449	A	G	A	4278	0.092	0.9267	1563	-0.439	0.6606	2456	0.667	0.5045	259	-0.603	0.5467
HLA-DQA2	rs9276278	6	32702470	T	C	T	4278	1.965	0.04941	1563	1.627	0.1037	2456	0.827	0.4084	259	1.443	0.149
HLA-DQA2	rs9276279	6	32702498	T	C	T	4278	2.165	0.03042	1563	1.522	0.1281	2456	1.159	0.2464	259	1.49	0.1363
HLA-DQA2	rs9276280	6	32702527	T	C	T	4278	1.966	0.04936	1563	1.627	0.1037	2456	0.827	0.408	259	1.443	0.149
HLA-DQA2	rs2859077	6	32702562	A	G	G	4278	-1.947	0.05156	1563	-1.627	0.1037	2456	-0.841	0.4003	259	-1.325	0.1851
HLA-DQA2	rs2859076	6	32702586	A	T	T	4278	-0.088	0.9297	1563	0.442	0.6586	2456	-0.665	0.5062	259	0.603	0.5466

HLA-DQA2	rs9276287	6	32702745	A	C	C	4278	-1.966	0.0493	1563	-1.627	0.1038	2456	-0.829	0.4074	259	-1.443	0.1491
HLA-DQA2	rs9276288	6	32702769	C	G	C	4278	1.966	0.04927	1563	1.627	0.1038	2456	0.829	0.4072	259	1.443	0.1491
HLA-DQA2	rs9276291	6	32702813	T	C	C	4278	-1.966	0.04924	1563	-1.627	0.1038	2456	-0.829	0.407	259	-1.443	0.1491
HLA-DQA2	rs9276295	6	32702891	A	G	G	4278	-1.968	0.04911	1563	-1.627	0.1038	2456	-0.831	0.4062	259	-1.443	0.1489
HLA-DQA2	rs9276296	6	32702930	T	C	T	4278	1.968	0.04909	1563	1.626	0.1039	2456	0.831	0.406	259	1.443	0.1489
HLA-DQA2	rs9276297	6	32702946	C	G	C	4278	1.968	0.04905	1563	1.626	0.1039	2456	0.831	0.4057	259	1.443	0.1489
HLA-DQA2	rs9276298	6	32703021	A	G	A	4278	2.166	0.0303	1563	1.521	0.1281	2456	1.162	0.2454	259	1.489	0.1364
HLA-DQA2	rs9276299	6	32703108	C	G	G	4278	-0.732	0.464	1563	-0.087	0.9308	2456	-0.62	0.5352	259	-0.854	0.3934
HLA-DQA2	rs2859072	6	32703313	A	G	A	4278	1.473	0.1406	1563	1.498	0.1341	2456	0.878	0.3801	259	-0.395	0.6932
HLA-DQA2	rs2859071	6	32703366	T	C	C	4278	-1.96	0.04999	1563	-1.06	0.2893	2456	-1.459	0.1446	259	-0.871	0.384
HLA-DQA2	rs6457638	6	32703407	C	G	G	4278	-1.24	0.2148	1563	-1.35	0.1771	2456	-0.35	0.7263	259	-0.648	0.5171
HLA-DQA2	rs6457639	6	32703581	T	C	T	4278	1.549	0.1215	1563	1.01	0.3123	2456	1.128	0.2595	259	0.339	0.7348
HLA-DQA2	rs2858881	6	32703845	T	C	C	2671	-0.103	0.9177	NA	NA	NA	2456	-0.01	0.992	215	-0.33	0.7412
HLA-DQA2	rs6925725	6	32703942	A	C	C	2671	-0.098	0.9223	NA	NA	NA	2456	-0.081	0.9351	215	-0.069	0.9454
HLA-DQA2	rs7744593	6	32704326	A	T	T	4278	-2.166	0.03029	1563	-1.521	0.1284	2456	-1.162	0.2452	259	-1.49	0.1362
HLA-DQA2	rs6457643	6	32704414	T	G	T	4278	1.524	0.1274	1563	0.968	0.3332	2456	1.119	0.2633	259	0.373	0.7089
HLA-DQA2	rs9276310	6	32704523	A	G	A	4278	0.773	0.4394	1563	0.154	0.8772	2456	0.62	0.535	259	0.853	0.3938
HLA-DQA2	rs10947336	6	32704574	A	C	A	4278	1.513	0.1304	1563	0.965	0.3343	2456	1.116	0.2644	259	0.339	0.7345
HLA-DQA2	rs12183007	6	32704630	A	G	G	4278	-1.512	0.1307	1563	-0.965	0.3346	2456	-1.115	0.2649	259	-0.339	0.7345
HLA-DQA2	rs9276311	6	32704659	T	C	C	4278	-1.961	0.0499	1563	-1.052	0.293	2456	-1.428	0.1532	259	-0.987	0.3237
HLA-DQA2	rs9276313	6	32704706	A	G	G	4278	-0.08	0.9362	1563	0.456	0.6484	2456	-0.619	0.5362	259	0.46	0.6458
HLA-DQA2	rs9276315	6	32704900	A	G	A	4278	0.769	0.4417	1563	0.157	0.8752	2456	0.613	0.5397	259	0.852	0.394
HLA-DQA2	rs9276319	6	32705002	T	C	T	4278	2.167	0.03025	1563	1.52	0.1284	2456	1.163	0.2449	259	1.49	0.1361
HLA-DQA2	rs13199553	6	32705104	T	C	T	4278	1.535	0.1247	1563	1.073	0.2831	2456	1.034	0.3011	259	0.419	0.675
HLA-DQA2	rs13214143	6	32705127	T	G	G	4278	-1.498	0.1342	1563	-0.96	0.3372	2456	-1.101	0.2709	259	-0.339	0.7344
HLA-DQA2	rs13214069	6	32705248	T	C	C	4278	-1.497	0.1345	1563	-0.959	0.3375	2456	-1.1	0.2713	259	-0.339	0.7344
HLA-DQA2	rs13199787	6	32705276	T	C	T	4278	1.497	0.1345	1563	0.959	0.3375	2456	1.1	0.2713	259	0.339	0.7344
HLA-DQA2	rs17840170	6	32705338	T	C	C	2671	-0.1	0.9203	NA	NA	NA	2456	-0.084	0.933	215	-0.068	0.9454
HLA-DQA2	rs2157324	6	32705828	C	G	C	4278	0.762	0.4459	1563	0.161	0.8724	2456	0.601	0.5477	259	0.852	0.3942
HLA-DQA2	rs6457644	6	32706128	T	C	T	4278	1.516	0.1294	1563	0.958	0.3383	2456	1.162	0.2451	259	0.231	0.8174
HLA-DQA2	rs7773068	6	32706234	A	G	A	4278	2.168	0.03016	1563	1.52	0.1285	2456	1.165	0.2442	259	1.491	0.136
HLA-DQA2	rs7773694	6	32706334	A	G	G	4278	-2.167	0.03022	1563	-1.52	0.1285	2456	-1.163	0.2447	259	-1.491	0.136
HLA-DQA2	rs7773407	6	32706398	A	C	C	4278	-1.528	0.1266	1563	-0.952	0.341	2456	-1.146	0.2517	259	-0.34	0.7341
HLA-DQA2	rs9276351	6	32706416	A	C	C	4278	-0.046	0.963	1563	0.347	0.7285	2456	-0.466	0.6414	259	0.393	0.6943
HLA-DQA2	rs7755597	6	32706480	T	C	T	4278	2.012	0.04427	1563	1.518	0.1291	2456	0.976	0.3292	259	1.442	0.1492
HLA-DQA2	rs7773441	6	32706495	A	T	A	4278	1.524	0.1276	1563	0.943	0.3457	2456	1.148	0.2509	259	0.34	0.7341
HLA-DQA2	rs9276357	6	32706559	T	G	T	4278	0.081	0.9357	1563	-0.47	0.6381	2456	0.631	0.5278	259	-0.461	0.6447
HLA-DQA2	rs7773955	6	32706719	T	C	C	4278	-1.522	0.1281	1563	-0.939	0.3475	2456	-1.149	0.2507	259	-0.34	0.7339
HLA-DQA2	rs9276359	6	32706770	T	C	T	4278	0.746	0.4555	1563	0.169	0.8659	2456	0.574	0.5662	259	0.851	0.3945
HLA-DQA2	rs9276366	6	32707071	A	G	G	4278	-0.744	0.4568	1563	-0.17	0.865	2456	-0.57	0.5687	259	-0.851	0.3946
HLA-DQA2	rs2894287	6	32707282	A	G	G	4278	-1.519	0.1289	1563	-0.935	0.3498	2456	-1.148	0.251	259	-0.34	0.7339
HLA-DQA2	rs9276370	6	32707295	T	G	T	4278	1.948	0.05142	1563	1.034	0.3013	2456	1.426	0.1539	259	0.987	0.3238
HLA-DQA2	rs2395249	6	32707360	A	G	A	4278	0.74	0.459	1563	0.173	0.8625	2456	0.563	0.5736	259	0.851	0.3947
HLA-DQA2	rs2894288	6	32707427	C	G	C	4278	0.738	0.4605	1563	0.174	0.862	2456	0.559	0.5762	259	0.851	0.3947

HLA-DQA2	rs9276373	6	32707508	T	C	C	4278	-0.737	0.4613	1563	-0.174	0.8617	2456	-0.557	0.5777	259	-0.851	0.3947
HLA-DQA2	rs9276375	6	32707585	A	G	G	4278	-0.303	0.762	1563	0.519	0.6041	2456	-0.687	0.4924	259	-0.391	0.696
HLA-DQA2	rs9276376	6	32707613	A	G	G	4278	-0.731	0.4646	1563	-0.179	0.8582	2456	-0.546	0.5848	259	-0.851	0.3948
HLA-DQA2	rs5021448	6	32707706	T	C	C	4278	-0.007	0.9948	1563	0.384	0.7009	2456	-0.443	0.6578	259	0.394	0.6937
HLA-DQA2	rs9276381	6	32707740	T	C	C	4278	-0.728	0.4663	1563	-0.18	0.8573	2456	-0.542	0.588	259	-0.851	0.395
HLA-DQA2	rs9276394	6	32708467	A	T	A	4278	2.147	0.03179	1563	1.506	0.132	2456	1.148	0.2511	259	1.492	0.1357
HLA-DQA2	rs9276395	6	32708504	C	G	G	4278	-2.146	0.03184	1563	-1.506	0.1321	2456	-1.147	0.2514	259	-1.492	0.1357
HLA-DQA2	rs9276398	6	32708798	T	C	C	4278	-0.723	0.4699	1563	-0.182	0.8557	2456	-0.532	0.5945	259	-0.85	0.3951
HLA-DQA2	rs9276399	6	32708890	A	G	G	4278	-0.722	0.4705	1563	-0.183	0.8547	2456	-0.53	0.596	259	-0.85	0.3951
HLA-DQA2	rs9276401	6	32709204	C	G	G	4278	-0.02	0.9838	1563	0.563	0.5735	2456	-0.548	0.5837	259	0.222	0.8242
HLA-DQA2	rs2051600	6	32709309	A	G	G	4278	-2.142	0.03216	1563	-1.501	0.1333	2456	-1.145	0.252	259	-1.492	0.1356
HLA-DQA2	rs7771968	6	32709532	T	C	C	2671	-0.108	0.9137	NA	NA	NA	2456	-0.093	0.926	215	-0.068	0.9457
HLA-DQA2	rs9276402	6	32709586	A	G	A	4278	0.724	0.4692	1563	0.206	0.8367	2456	0.515	0.6067	259	0.85	0.3952
HLA-DQA2	rs4403295	6	32710010	T	G	T	4278	1.096	0.273	1563	0.525	0.5999	2456	0.686	0.493	259	1.056	0.2912
HLA-DQA2	rs5018343	6	32710119	A	T	T	4278	-2.606	0.009163	1563	-1.574	0.1154	2456	-1.712	0.08696	259	-1.453	0.1463
HLA-DQA2	rs9276407	6	32710307	A	G	A	4278	1.498	0.1343	1563	0.281	0.7787	2456	1.027	0.3045	259	2.234	0.0255
HLA-DQA2	rs9276425	6	32711050	T	C	C	4278	-1.154	0.2483	1563	0.61	0.5418	2456	-1.553	0.1204	259	-1.408	0.159
HLA-DQA2	rs17432921	6	32711162	T	C	C	2671	-0.104	0.9168	NA	NA	NA	2456	-0.088	0.9296	215	-0.069	0.9447
HLA-DQA2	rs17500468	6	32711178	A	G	G	1822	-1.554	0.1201	1563	-1.276	0.2021	NA	NA	NA	259	-0.989	0.3226
HLA-DQA2	rs17500482	6	32711179	T	C	C	3399	-0.632	0.5277	1563	-0.62	0.5353	1792	-0.273	0.7848	44	-0.114	0.9095
HLA-DQA2	rs2395252	6	32711322	C	G	G	4278	-2.622	0.008742	1563	-0.689	0.4906	2456	-2.197	0.028	259	-2.196	0.02806
HLA-DQA2	rs2227128	6	32711400	T	C	C	4278	-2.588	0.009659	1563	-0.688	0.4913	2456	-2.145	0.03192	259	-2.22	0.02643
HLA-DQA2	rs2213567	6	32711655	C	G	C	4278	2.472	0.01344	1563	0.795	0.4266	2456	1.98	0.04766	259	1.994	0.04613
HLA-DQA2	rs16870693	6	32711691	A	C	A	2671	0.225	0.822	NA	NA	NA	2456	0.105	0.916	215	0.437	0.6623
HLA-DQA2	rs2227127	6	32711782	A	G	G	4278	-1.254	0.2099	1563	-0.521	0.6026	2456	-1.178	0.2387	259	-0.189	0.8503
HLA-DQA2	rs9276428	6	32712085	T	G	T	4278	2.582	0.009835	1563	0.668	0.5042	2456	2.153	0.03128	259	2.22	0.02643
HLA-DQA2	rs9276429	6	32712104	A	G	A	4278	2.578	0.009949	1563	0.658	0.5105	2456	2.156	0.03108	259	2.22	0.02643
HLA-DQA2	rs9276430	6	32712182	T	C	C	4278	-2.44	0.01469	1563	-0.782	0.4342	2456	-1.961	0.0499	259	-1.957	0.05038
HLA-DQA2	rs9276431	6	32712247	T	C	C	4278	-2.54	0.01107	1563	-0.656	0.512	2456	-2.109	0.03496	259	-2.22	0.02643
HLA-DQA2	rs9276432	6	32712384	T	C	C	4278	-2.557	0.01056	1563	-0.624	0.5328	2456	-2.156	0.03109	259	-2.22	0.02643
HLA-DQA2	rs17500510	6	32712818	A	G	G	1822	-0.738	0.4603	1563	-0.603	0.5465	NA	NA	NA	259	-0.477	0.6335
HLA-DQA2	rs9469266	6	32713099	A	G	A	2671	0.758	0.4487	NA	NA	NA	2456	0.675	0.5	215	0.39	0.6962
HLA-DQA2	rs2239800	6	32713267	A	G	G	4278	-0.905	0.3656	1563	-0.316	0.7521	2456	-1.438	0.1505	259	1.526	0.127
HLA-DQA2	rs9276435	6	32713867	T	C	T	3270	0.212	0.8324	1563	0.712	0.4762	1448	0.157	0.8752	259	-1.369	0.1709
HLA-DQA2	rs9276436	6	32714083	T	C	C	4278	-1.174	0.2403	1563	-0.985	0.3244	2456	-0.429	0.668	259	-1.031	0.3024
HLA-DQA2	rs2071800	6	32714143	A	G	G	1822	-1.07	0.2847	1563	-1.168	0.2426	NA	NA	NA	259	0.033	0.9739
HLA-DQA2	rs2071799	6	32714175	T	C	T	4278	1.67	0.09483	1563	0.116	0.9076	2456	1.696	0.08994	259	1.282	0.1999
HLA-DQA2	rs9276438	6	32714516	A	G	A	4278	1.182	0.2371	1563	0.999	0.3177	2456	0.428	0.6685	259	1.032	0.3022
HLA-DQA2	rs9276440	6	32714783	A	T	T	4278	-2.531	0.01136	1563	-0.625	0.5323	2456	-2.179	0.02935	259	-2.045	0.04089
HLA-DQA2	rs9276447	6	32715569	T	G	T	4278	2.527	0.0115	1563	0.622	0.5337	2456	2.175	0.02963	259	2.045	0.04089
HLA-DQA2	rs9276448	6	32715629	A	G	G	4278	-1.234	0.2171	1563	-1.02	0.3076	2456	-0.48	0.6313	259	-1.033	0.3018
HLA-DQA2	rs9276449	6	32715653	T	C	T	4278	1.335	0.1818	1563	1.249	0.2117	2456	0.436	0.6632	259	1.017	0.309
HLA-DQA2	rs9276452	6	32715722	A	G	G	4278	-1.192	0.2334	1563	-1.021	0.3074	2456	-0.423	0.6722	259	-1.033	0.3018
HLA-DQA2	rs9276454	6	32715846	A	G	G	4278	-2.631	0.008516	1563	-0.619	0.5357	2456	-2.235	0.02541	259	-2.288	0.02212

HLA-DQA2	rs9276455	6	32715933	A	G	A	4278	1.253	0.2104	1563	1.021	0.3072	2456	0.495	0.6204	259	1.057	0.2905
HLA-DQA2	rs2213573	6	32716022	A	G	A	4278	2.104	0.0354	1563	1.315	0.1885	2456	1.244	0.2136	259	1.489	0.1364
HLA-DQA2	rs9276460	6	32716127	A	G	G	4278	-1.191	0.2337	1563	-1.022	0.3066	2456	-0.421	0.6739	259	-1.033	0.3018
HLA-DQA2	rs9276464	6	32716294	T	C	T	4278	1.19	0.2342	1563	1.022	0.3065	2456	0.419	0.6753	259	1.033	0.3018
HLA-DQA2	rs11758312	6	32716372	A	C	A	4278	1.648	0.0994	1563	0.094	0.925	2456	1.687	0.0917	259	1.272	0.2033
HLA-DQA2	rs9276465	6	32716409	A	G	G	4278	-1.189	0.2346	1563	-1.023	0.3065	2456	-0.417	0.6764	259	-1.033	0.3018
HLA-DQA2	rs9276466	6	32716452	T	G	G	4278	-2.623	0.008713	1563	-0.621	0.5347	2456	-2.224	0.02618	259	-2.288	0.02212
HLA-DQA2	rs2894291	6	32716827	T	C	C	4278	-1.187	0.2351	1563	-1.023	0.3063	2456	-0.415	0.6779	259	-1.033	0.3018
HLA-DQA2	rs4415152	6	32717024	T	C	C	4278	-1.187	0.2352	1563	-1.023	0.3061	2456	-0.415	0.6782	259	-1.033	0.3018
HLA-DQA2	rs9276472	6	32717224	A	G	G	4278	-1.186	0.2355	1563	-1.023	0.3061	2456	-0.414	0.679	259	-1.033	0.3018
HLA-DQA2	rs4370403	6	32717515	A	G	A	4278	1.186	0.2357	1563	1.023	0.3061	2456	0.413	0.6793	259	1.033	0.3018
HLA-DQA2	rs4548006	6	32717604	A	G	A	4278	1.186	0.2358	1563	1.023	0.3061	2456	0.413	0.6796	259	1.033	0.3018
HLA-DQA2	rs4351242	6	32717722	T	C	T	4278	1.185	0.2359	1563	1.023	0.3061	2456	0.413	0.6798	259	1.033	0.3018
HLA-DQA2	rs9276482	6	32718162	T	C	T	4278	2.549	0.01082	1563	0.642	0.5206	2456	2.142	0.03217	259	2.183	0.02905
HLA-DQA2	rs9276483	6	32718329	T	C	C	4278	-1.185	0.2362	1563	-1.023	0.3061	2456	-0.412	0.6806	259	-1.033	0.3018
HLA-DQA2	rs10947340	6	32718387	T	G	T	4278	1.663	0.09639	1563	0.127	0.8993	2456	1.68	0.0929	259	1.272	0.2033
HLA-DQA2	rs9276484	6	32718452	A	G	G	4278	-1.184	0.2364	1563	-1.023	0.3061	2456	-0.411	0.6812	259	-1.033	0.3018
HLA-DQA2	rs9276487	6	32718594	A	T	A	4278	1.184	0.2365	1563	1.023	0.3061	2456	0.41	0.6814	259	1.033	0.3018
HLA-DQA2	rs9276489	6	32718620	T	C	T	4278	1.183	0.2366	1563	1.023	0.3061	2456	0.41	0.6817	259	1.033	0.3018
HLA-DQA2	rs9276490	6	32718681	A	G	G	4278	-2.526	0.01154	1563	-0.658	0.5107	2456	-2.145	0.03196	259	-2.045	0.0409
HLA-DQA2	rs9276493	6	32718869	T	G	G	4278	-1.183	0.237	1563	-1.023	0.3061	2456	-0.409	0.6825	259	-1.033	0.3018
HLA-DQA2	rs2858879	6	32719117	C	G	G	4278	-1.274	0.2025	1563	-0.938	0.3484	2456	-0.602	0.547	259	-1.021	0.3072
HLA-DQA2	rs5014418	6	32719381	A	C	C	4278	-1.181	0.2375	1563	-1.023	0.3061	2456	-0.407	0.6838	259	-1.033	0.3018
HLA-DQA2	rs5014411	6	32719634	C	G	G	4278	-1.182	0.2373	1563	-1.025	0.3054	2456	-0.407	0.6841	259	-1.033	0.3018
HLA-DQA2	rs9469268	6	32719635	A	G	A	3268	0.056	0.9555	1563	-0.25	0.8023	1705	0.317	0.7512	NA	NA	NA
HLA-DQA2	rs9276502	6	32719666	A	C	C	4278	-1.182	0.2371	1563	-1.026	0.3047	2456	-0.406	0.6845	259	-1.033	0.3018
HLA-DQA2	rs9276504	6	32719745	T	C	C	4278	-1.263	0.2066	1563	-1.027	0.3045	2456	-0.418	0.6758	259	-1.322	0.1861
HLA-DQA2	rs2213572	6	32719804	A	G	G	4278	-2.65	0.008039	1563	-0.693	0.4883	2456	-2.203	0.02757	259	-2.284	0.02237
HLA-DQA2	rs9276506	6	32719914	T	C	T	4278	2.834	0.004597	1563	1.01	0.3127	2456	2.437	0.01482	259	1.534	0.125
HLA-DQA2	rs2213571	6	32719937	C	G	G	4278	-2.701	0.006913	1563	-0.694	0.488	2456	-2.27	0.02321	259	-2.284	0.0224
HLA-DQA2	rs9276511	6	32720037	T	G	G	4278	-1.299	0.1939	1563	-1.03	0.3031	2456	-0.464	0.6429	259	-1.322	0.1861
HLA-DQA2	rs9276516	6	32720302	T	C	C	4278	-1.301	0.1932	1563	-1.031	0.3028	2456	-0.466	0.6415	259	-1.322	0.1861
HLA-DQA2	rs9276517	6	32720366	T	C	C	4278	-1.301	0.1931	1563	-1.031	0.3025	2456	-0.466	0.6414	259	-1.322	0.1862
HLA-DQA2	rs9276518	6	32720385	A	G	G	4278	-1.302	0.193	1563	-1.032	0.3022	2456	-0.466	0.6414	259	-1.322	0.1862
HLA-DQA2	rs9276522	6	32720462	T	C	T	4278	2.706	0.006816	1563	0.694	0.4875	2456	2.276	0.02285	259	2.283	0.02246
HLA-DQA2	rs9276524	6	32720531	A	G	A	4278	2.708	0.006773	1563	0.694	0.4874	2456	2.279	0.02269	259	2.282	0.02247
HLA-DQA2	rs9276526	6	32720589	T	G	T	4278	1.304	0.1924	1563	1.034	0.3012	2456	0.466	0.6409	259	1.322	0.1862
HLA-DQA2	rs10947342	6	32720780	A	G	G	4278	-1.473	0.1408	1563	0.028	0.9776	2456	-1.765	0.07764	259	-0.62	0.535
HLA-DQA2	rs9276529	6	32720971	T	C	T	4278	1.305	0.1918	1563	1.036	0.3004	2456	0.467	0.6404	259	1.322	0.1862
HLA-DQA2	rs7450989	6	32721043	T	C	C	4278	-1.709	0.08751	1563	-0.17	0.8648	2456	-1.708	0.0877	259	-1.267	0.205
HLA-DQA2	rs9276534	6	32721195	T	C	T	4278	2.711	0.006708	1563	0.696	0.4867	2456	2.282	0.02247	259	2.281	0.02254
HLA-DQA2	rs2213569	6	32721574	T	C	T	4278	2.712	0.006691	1563	0.696	0.4865	2456	2.283	0.02242	259	2.281	0.02255
HLA-DQA2	rs2894292	6	32721656	A	G	A	4278	1.308	0.191	1563	1.039	0.2989	2456	0.468	0.6398	259	1.322	0.1862
HLA-DQA2	rs7774435	6	32721948	T	C	T	4278	1.711	0.08712	1563	0.17	0.8653	2456	1.711	0.08705	259	1.267	0.2052

HLA-DQA2	rs9276546	6	32722129	T	C	T	4278	1.305	0.1918	1563	1.027	0.3043	2456	0.473	0.636	259	1.323	0.1857
HLA-DQA2	rs9276547	6	32722155	A	G	A	4278	1.309	0.1906	1563	1.04	0.2982	2456	0.468	0.6396	259	1.322	0.1861
HLA-DQA2	rs10807113	6	32722186	A	C	A	4278	1.698	0.08949	1563	0.173	0.8624	2456	1.702	0.08871	259	1.234	0.2173
HLA-DQA2	rs6918223	6	32722532	A	C	C	4278	-1.711	0.08715	1563	-0.168	0.8669	2456	-1.713	0.08674	259	-1.266	0.2054
HLA-DQA2	rs6918401	6	32722625	T	C	C	4278	-2.712	0.006685	1563	-0.695	0.4871	2456	-2.285	0.02232	259	-2.28	0.02264
HLA-DQA2	rs9276554	6	32722702	T	C	T	4278	1.186	0.2356	1563	1.043	0.2968	2456	0.398	0.6908	259	1.032	0.3021
HLA-DQA2	rs9276555	6	32722754	A	G	G	4278	-1.147	0.2516	1563	0.612	0.5405	2456	-1.559	0.1189	259	-1.361	0.1734
HLA-DQA2	rs9276556	6	32723233	C	G	G	4278	-1.145	0.2521	1563	0.612	0.5403	2456	-1.557	0.1195	259	-1.366	0.1721
HLA-DQA2	rs7770024	6	32723341	A	G	G	4278	-1.703	0.08853	1563	-0.164	0.8698	2456	-1.706	0.088	259	-1.266	0.2056
HLA-DQA2	rs7769974	6	32723518	T	C	C	4278	-1.701	0.08888	1563	-0.163	0.8703	2456	-1.704	0.08835	259	-1.266	0.2056
HLA-DQA2	rs7769979	6	32723572	A	G	A	4278	1.701	0.08902	1563	0.162	0.8711	2456	1.704	0.08838	259	1.266	0.2057
HLA-DQA2	rs3656	6	32724043	A	G	A	1822	1.572	0.1159	1563	1.276	0.202	NA	NA	NA	259	1.036	0.3003
HLA-DQA2	rs7774954	6	32724189	A	C	A	4278	1.201	0.2296	1563	1.082	0.2794	2456	0.388	0.6981	259	1.031	0.3027
HLA-DQA2	rs3213484	6	32725062	A	T	A	4278	2.533	0.01132	1563	0.688	0.4912	2456	2.138	0.03252	259	2.018	0.04354
HLA-DQA2	rs2301271	6	32725193	A	G	G	4278	-2.709	0.006754	1563	-0.688	0.4915	2456	-2.25	0.02448	259	-2.392	0.01678
HLA-DQA2	rs1023449	6	32727905	A	C	C	4278	-2.87	0.004101	1563	-0.681	0.496	2456	-2.523	0.01164	259	-2.224	0.02617
HLA-DQA2	rs2006165	6	32728787	A	G	A	4278	2.107	0.03509	1563	0.449	0.6536	2456	1.792	0.07311	259	1.943	0.05198
HLA-DQA2	rs7768538	6	32729821	A	C	A	4278	2.664	0.007724	1563	0.636	0.525	2456	2.32	0.02034	259	2.121	0.03394
HLA-DQA2	rs7453920	6	32730012	A	G	G	4278	-2.848	0.004397	1563	-0.632	0.5276	2456	-2.486	0.01292	259	-2.368	0.01786
HLA-DQA2	rs2051549	6	32730086	A	G	A	4278	2.738	0.00618	1563	0.633	0.5265	2456	2.34	0.01929	259	2.367	0.01795
HLA-DQA2	rs2071550	6	32730940	A	C	A	4278	2.04	0.0414	1563	1.596	0.1106	2456	1.612	0.1069	259	-0.595	0.5518
HLA-DQA2	rs1573649	6	32731258	A	G	A	4278	2.576	0.009995	1563	0.835	0.4037	2456	2.297	0.0216	259	1.344	0.179
HLA-DQA2	rs1978029	6	32731710	A	G	G	4278	-2.605	0.009174	1563	-0.853	0.3936	2456	-2.293	0.02186	259	-1.433	0.1519
HLA-DQA2	rs6902723	6	32731960	A	G	A	4278	2.438	0.01478	1563	0.858	0.3907	2456	2.17	0.03	259	1.117	0.2641
HLA-DQA2	rs6903130	6	32732210	A	G	A	4278	2.44	0.01469	1563	0.862	0.3888	2456	2.17	0.03	259	1.117	0.2641
HLA-DQA2	rs6919798	6	32732890	A	G	G	4278	-1.326	0.1848	1563	-1.32	0.1869	2456	-0.371	0.7105	259	-1.004	0.3152
HLA-DQA2	rs9276586	6	32732937	A	G	A	4278	2.618	0.008846	1563	0.858	0.3907	2456	2.302	0.02131	259	1.441	0.1496
HLA-DQA2	rs7382794	6	32734030	T	C	C	4278	-2.598	0.00938	1563	-0.86	0.3898	2456	-2.304	0.02122	259	-1.351	0.1767
HLA-DQA2	rs9276601	6	32734304	A	G	A	1822	0.57	0.5688	1563	-0.212	0.8318	NA	NA	NA	259	2.033	0.04202
HLA-DQA2	rs9276602	6	32734327	A	G	A	4278	2.603	0.009241	1563	0.863	0.3881	2456	2.307	0.02103	259	1.353	0.1759
STAT6	rs17119418	12	57472749	T	C	T	4278	0.124	0.9015	1563	-0.365	0.7155	2456	0.684	0.4941	259	-0.708	0.4792
STAT6	rs2035545	12	57477431	A	T	A	4278	0.075	0.9401	1563	-0.554	0.5799	2456	0.857	0.3917	259	-0.972	0.3309
STAT6	rs324010	12	57482252	A	G	A	4278	3.044	0.002337	1563	1.552	0.1206	2456	3.064	0.002183	259	-0.879	0.3794
STAT6	rs324020	12	57486033	A	C	C	4278	-3.814	0.0001366	1563	-2.596	0.009419	2456	-3.027	0.002467	259	0.199	0.8423
STAT6	rs3024979	12	57488293	A	T	T	1822	-0.609	0.5428	1563	-0.821	0.4119	NA	NA	NA	259	0.402	0.6879
STAT6	rs1059513	12	57489709	T	C	T	1949	2.524	0.01159	1563	2.482	0.01307	127	-1.315	0.1884	259	1.749	0.08027
STAT6	rs703817	12	57489828	T	C	T	4278	3.799	0.0001452	1563	2.339	0.01933	2456	3.112	0.00186	259	0.112	0.9105
STAT6	rs324015	12	57490100	T	C	C	4278	-2.105	0.03533	1563	-1.011	0.3119	2456	-2.145	0.03194	259	0.537	0.5914
STAT6	rs3024975	12	57491863	A	G	G	4278	-0.199	0.8424	1563	-0.544	0.5865	2456	0.35	0.7266	259	-0.548	0.5835
STAT6	rs3024974	12	57492745	A	G	G	4278	-0.191	0.8482	1563	-0.53	0.5961	2456	0.349	0.7271	259	-0.55	0.582
STAT6	rs841718	12	57492996	A	G	A	4278	3.605	0.0003126	1563	1.058	0.2899	2456	4.019	5.84E-05	259	-0.327	0.7439
STAT6	rs3024971	12	57493727	T	G	T	2350	2.12	0.03399	1563	2.508	0.01214	528	-0.961	0.3367	259	1.597	0.1103
STAT6	rs324011	12	57502182	T	C	T	4278	4.37	1.24E-05	1563	2.36	0.0183	2456	3.767	0.0001655	259	0.365	0.7153
STAT6	rs167769	12	57503775	T	C	T	4278	4.217	2.48E-05	1563	1.9	0.05741	2456	3.921	8.81E-05	259	0.394	0.6933

STAT6	rs2598483	12	57506905	T	C	C	1822	-0.188	0.851	1563	-0.064	0.9493	NA	NA	NA	259	-0.342	0.7322
STAT6	rs324013	12	57510661	T	C	T	4278	1.182	0.2373	1563	0.802	0.4227	2456	0.893	0.3721	259	0.085	0.9325
STAT6	rs12368672	12	57512470	C	G	G	4278	-3.056	0.002242	1563	-2.101	0.03568	2456	-2.234	0.02549	259	-0.381	0.7028
STAT6	rs11172106	12	57512875	C	G	G	4278	-2.038	0.0415	1563	-2.009	0.04456	2456	-1.024	0.3057	259	-0.196	0.8447
STAT6	rs12298170	12	57515363	A	G	G	4278	-1.538	0.1242	1563	-1.526	0.127	2456	-0.713	0.4758	259	-0.304	0.7612
STAT6	rs17119494	12	57516933	A	G	A	1822	0.271	0.7865	1563	0.026	0.9796	NA	NA	NA	259	0.655	0.5122
STAT6	rs12307379	12	57518665	T	C	C	2715	-1.069	0.285	NA	NA	NA	2456	-0.973	0.3307	259	-0.466	0.6412
STAT6	rs7306742	12	57520687	T	C	T	2715	1.068	0.2854	NA	NA	NA	2456	0.972	0.3311	259	0.466	0.6415
IL4R	rs8059713	16	27306644	A	T	A	3655	0.655	0.5125	1563	0.541	0.5887	1833	0.653	0.514	259	-0.604	0.5458
IL4R	rs4395078	16	27310618	C	G	C	3655	0.637	0.5243	1563	0.505	0.6133	1833	0.653	0.5135	259	-0.588	0.5567
IL4R	rs4238954	16	27314111	A	G	A	3655	0.128	0.898	1563	-0.503	0.6149	1833	0.281	0.779	259	0.971	0.3316
IL4R	rs4523933	16	27316283	T	C	C	3655	-0.558	0.577	1563	-0.434	0.6642	1833	-0.73	0.4656	259	0.912	0.3617
IL4R	rs4547336	16	27316401	A	C	C	3655	-0.574	0.5663	1563	-0.441	0.6595	1833	-0.907	0.3645	259	1.34	0.1802
IL4R	rs4787947	16	27318765	T	G	T	1822	0.461	0.6444	1563	0.681	0.496	NA	NA	NA	259	-0.448	0.6539
IL4R	rs12933283	16	27319378	T	C	T	3655	0.716	0.4737	1563	0.708	0.4791	1833	0.806	0.4202	259	-1.191	0.2336
IL4R	rs8057585	16	27320369	C	G	C	3655	0.06	0.9521	1563	0.473	0.6364	1833	0.151	0.8803	259	-1.336	0.1814
IL4R	rs2057768	16	27322095	T	C	T	3655	0.867	0.3859	1563	0.722	0.4702	1833	1.009	0.3129	259	-1.202	0.2295
IL4R	rs8052962	16	27326842	T	G	T	3655	1.143	0.253	1563	0.53	0.5959	1833	1.374	0.1694	259	-0.664	0.5067
IL4R	rs6498011	16	27331894	A	G	A	3655	1.182	0.2371	1563	0.54	0.5889	1833	1.411	0.1583	259	-0.64	0.5224
IL4R	rs6498012	16	27331974	C	G	C	3655	1.198	0.2311	1563	0.581	0.5611	1833	1.394	0.1633	259	-0.637	0.5239
IL4R	rs1110470	16	27336427	A	G	G	3655	-0.245	0.8062	1563	-0.473	0.636	1833	-0.174	0.8618	259	0.704	0.4816
IL4R	rs7192673	16	27345121	T	C	C	2092	-0.489	0.6246	NA	NA	NA	1833	-1.258	0.2086	259	1.955	0.05063
IL4R	rs3024535	16	27352121	T	C	C	2092	-0.175	0.8608	NA	NA	NA	1833	-0.99	0.3221	259	2.136	0.0327
IL4R	rs3024537	16	27352819	A	G	G	3655	-0.299	0.7651	1563	-0.333	0.7394	1833	-0.234	0.8147	259	0.318	0.7501
IL4R	rs3024543	16	27353230	A	G	G	3655	-0.326	0.7447	1563	-0.264	0.7921	1833	-0.196	0.8445	259	-0.054	0.9571
IL4R	rs3024544	16	27353357	T	C	C	3655	-0.243	0.8079	1563	-0.25	0.8024	1833	-0.218	0.8272	259	0.282	0.778
IL4R	rs3024547	16	27354361	T	C	T	3655	0.418	0.676	1563	-0.259	0.7955	1833	0.718	0.4729	259	0.297	0.7665
IL4R	rs3024554	16	27355285	T	G	G	3655	-0.247	0.805	1563	-0.276	0.7829	1833	-0.195	0.8453	259	0.269	0.7882
IL4R	rs3024570	16	27357784	A	G	A	1822	0.737	0.4612	1563	0.63	0.5287	NA	NA	NA	259	0.407	0.6841
IL4R	rs3024576	16	27358190	A	G	A	3655	0.95	0.3423	1563	0.17	0.8654	1833	1.011	0.3119	259	0.461	0.6449
IL4R	rs3024578	16	27358351	A	G	A	1822	0.736	0.4618	1563	0.632	0.5275	NA	NA	NA	259	0.4	0.6895
IL4R	rs2239349	16	27358888	A	G	A	3108	0.681	0.496	1016	-0.731	0.4646	1833	1.76	0.07832	259	-0.877	0.3807
IL4R	rs2239347	16	27359021	A	C	C	3655	-0.849	0.396	1563	-0.513	0.6079	1833	-0.492	0.6229	259	-0.62	0.5353
IL4R	rs3024585	16	27359844	A	G	A	3655	1.045	0.2962	1563	-0.115	0.9085	1833	1.825	0.06794	259	-0.649	0.5162
IL4R	rs2283561	16	27361167	A	C	C	3655	-0.364	0.716	1563	0.399	0.69	1833	-0.663	0.5074	259	-0.583	0.5601
IL4R	rs3024604	16	27363230	T	C	C	3655	-0.28	0.7797	1563	-0.081	0.9352	1833	-0.245	0.8066	259	-0.199	0.8421
IL4R	rs3024607	16	27363611	A	G	A	3655	0.258	0.7966	1563	0.078	0.938	1833	0.212	0.8321	259	0.213	0.8313
IL4R	rs3024608	16	27363686	C	G	C	2907	2.674	0.00749	859	1.906	0.0566	1833	1.751	0.07998	215	0.911	0.3623
IL4R	rs3024612	16	27364233	A	G	A	2907	3.014	0.002576	859	1.909	0.05632	1833	2.41	0.01596	215	0.232	0.8163
IL4R	rs3024613	16	27364253	T	C	T	3655	1.563	0.118	1563	0.795	0.4266	1833	1.614	0.1065	259	-0.375	0.7073
IL4R	rs3024614	16	27364345	A	G	A	2907	3.018	0.002546	859	1.91	0.05619	1833	2.414	0.01577	215	0.231	0.8176
IL4R	rs3024619	16	27364806	A	G	A	3655	0.312	0.755	1563	-0.449	0.6531	1833	0.708	0.4791	259	0.394	0.6938
IL4R	rs3024620	16	27364918	C	G	C	2907	2.703	0.006876	859	1.91	0.05616	1833	1.745	0.08105	215	1.027	0.3045
IL4R	rs3024622	16	27365453	C	G	G	3655	-0.323	0.7469	1563	0.452	0.6514	1833	-0.732	0.4644	259	-0.376	0.7068

IL4R	rs3024623	16	27365468	A	G	G	3506	-1.383	0.1665	1563	-0.607	0.544	1684	-1.347	0.178	259	-0.165	0.8693
IL4R	rs3024630	16	27366126	A	G	G	3655	-0.529	0.5968	1563	-0.079	0.9372	1833	-0.708	0.4792	259	0.089	0.9294
IL4R	rs3024633	16	27366499	A	G	G	3506	-0.974	0.3301	1563	-0.335	0.7374	1684	-1.166	0.2438	259	0.213	0.8317
IL4R	rs3024636	16	27366982	T	C	C	1822	-0.129	0.8971	1563	-0.241	0.8097	NA	NA	NA	259	0.249	0.8035
IL4R	rs4787423	16	27367334	T	C	C	3655	-0.236	0.8131	1563	0.085	0.9324	1833	-0.472	0.6372	259	0.158	0.8746
IL4R	rs3024647	16	27367972	A	G	A	3655	0.405	0.6855	1563	0.516	0.6056	1833	-0.04	0.9677	259	0.361	0.7182
IL4R	rs3024648	16	27367999	T	C	T	2951	1.739	0.08195	859	1.734	0.08293	1833	0.963	0.3357	259	0.153	0.8786
IL4R	rs3024658	16	27370454	A	G	G	2951	-2.089	0.03667	859	-1.715	0.08639	1833	-1.446	0.1482	259	-0.083	0.9336
IL4R	rs3024660	16	27371158	T	C	T	3655	1.691	0.09087	1563	0.336	0.7368	1833	2.113	0.03461	259	-0.095	0.9245
IL4R	rs3024668	16	27371949	A	G	G	2951	-1.75	0.0801	859	-1.699	0.08929	1833	-1.271	0.2037	259	0.568	0.5698
IL4R	rs3024672	16	27373131	A	G	G	3108	-0.262	0.7932	1016	0.434	0.6645	1833	-0.708	0.479	259	0.116	0.9076
IL4R	rs3024676	16	27373558	A	C	C	3655	-2.307	0.02108	1563	-1.702	0.08882	1833	-1.667	0.09557	259	-0.051	0.9595
IL4R	rs1805011	16	27373872	A	C	A	3655	2.966	0.003017	1563	2.548	0.01084	1833	1.879	0.06018	259	-0.117	0.9067
IL4R	rs2234898	16	27373915	T	G	G	3655	-2.839	0.004519	1563	-2.556	0.01058	1833	-1.689	0.09129	259	0.105	0.9161
IL4R	rs1805013	16	27373980	T	C	T	3470	0.761	0.4469	1378	0.666	0.5057	1833	0.724	0.4691	259	-0.677	0.4983
IL4R	rs1805015	16	27374180	T	C	T	3655	1.65	0.0989	1563	1.735	0.08279	1833	0.592	0.5537	259	0.362	0.7173
IL4R	rs1805016	16	27374927	T	G	G	3470	-0.623	0.533	1378	-0.96	0.3368	1833	0.464	0.6429	259	-1.3	0.1936
IL4R	rs1049631	16	27375542	A	G	A	3655	0.692	0.4888	1563	0.779	0.4358	1833	0.061	0.9513	259	0.523	0.6008
IL4R	rs8832	16	27375787	A	G	G	3655	-0.71	0.4774	1563	-0.798	0.4251	1833	-0.112	0.9109	259	-0.412	0.6805
IL4R	rs1029489	16	27376217	A	G	G	3655	-0.104	0.9172	1563	0.192	0.8478	1833	-0.119	0.9054	259	-0.546	0.5851
IL4R	rs3024685	16	27376910	T	C	T	3655	0.022	0.9824	1563	-0.177	0.8596	1833	-0.027	0.9787	259	0.589	0.556
IL4R	rs12102586	16	27378053	T	C	T	3655	0.167	0.867	1563	1.205	0.2284	1833	-1.357	0.1748	259	1.28	0.2006
IL4R	rs4787956	16	27378249	A	G	A	3655	0.276	0.7823	1563	0.477	0.6332	1833	-0.428	0.6689	259	1.004	0.3156
IL4R	rs16976728	16	27381712	T	C	C	3655	-0.375	0.7079	1563	-0.685	0.4935	1833	0.161	0.8719	259	-0.155	0.8772
IL4R	rs4787426	16	27384731	T	G	T	3655	1.675	0.094	1563	1.028	0.3041	1833	1.533	0.1253	259	-0.312	0.755
IL4R	rs4787427	16	27386394	C	G	C	3655	1.85	0.06435	1563	0.587	0.5569	1833	1.976	0.04818	259	0.249	0.8031
IL4R	rs7191188	16	27389411	A	G	G	3655	-0.111	0.9114	1563	0.81	0.4182	1833	-0.74	0.4594	259	-0.439	0.6608
IL4R	rs6498015	16	27391624	A	G	A	1822	0.718	0.4727	1563	0.833	0.4047	NA	NA	NA	259	-0.142	0.887
IL4R	rs6498016	16	27391788	A	G	A	3655	0.667	0.5048	1563	0.229	0.8185	1833	0.817	0.4137	259	-0.233	0.816
IL4R	rs8062714	16	27391891	A	G	A	3655	0.745	0.4562	1563	0.371	0.7109	1833	0.795	0.4266	259	-0.226	0.8208
IL4R	rs2382722	16	27392626	A	G	G	3655	-0.851	0.3947	1563	-0.196	0.8443	1833	-1.176	0.2398	259	0.413	0.68
IL4R	rs2040788	16	27392942	A	G	A	3655	0.832	0.4055	1563	0.195	0.8451	1833	1.15	0.2503	259	-0.413	0.6796
IL21R	rs9944340	16	27393591	T	C	T	3655	0.782	0.434	1563	0.576	0.5648	1833	0.953	0.3403	259	-1.012	0.3115
IL21R	rs6498017	16	27394858	A	G	A	2207	0.836	0.403	1563	0.676	0.4989	385	1.266	0.2054	259	-0.764	0.445
IL21R	rs722516	16	27396461	A	G	A	3655	0.228	0.8198	1563	0.165	0.869	1833	-0.09	0.9283	259	0.69	0.4901
IL21R	rs722517	16	27396595	T	C	T	2207	0.745	0.4565	1563	0.503	0.6149	385	1.275	0.2022	259	-0.617	0.5372
IL21R	rs1107788	16	27397235	A	G	A	3655	0.172	0.8637	1563	0.165	0.869	1833	-0.207	0.8363	259	0.79	0.4298
IL21R	rs11074854	16	27397539	C	G	G	3655	-1.158	0.247	1563	-0.503	0.6148	1833	-1.441	0.1497	259	0.72	0.4714
IL21R	rs1859309	16	27397821	A	G	A	3655	0.175	0.8611	1563	0.165	0.869	1833	-0.204	0.8385	259	0.794	0.427
IL21R	rs1859308	16	27397998	A	G	A	3506	1.23	0.2186	1563	0.487	0.6262	1684	1.599	0.1098	259	-0.748	0.4543
IL21R	rs1859306	16	27398094	T	C	T	3655	0.337	0.7362	1563	-0.165	0.869	1833	0.89	0.3732	259	-0.698	0.485
IL21R	rs11074855	16	27398390	T	C	T	3655	0.2	0.8411	1563	0.165	0.8687	1833	-0.179	0.858	259	0.823	0.4106
IL21R	rs10852316	16	27398555	T	G	G	3655	-0.203	0.8392	1563	-0.165	0.8687	1833	0.175	0.861	259	-0.822	0.4109
IL21R	rs7199163	16	27399100	T	G	T	3101	1.246	0.2128	1563	0.504	0.6143	1279	1.68	0.09291	259	-0.66	0.509

IL21R	rs982204	16	27399648	T	C	T	3655	0.22	0.826	1563	0.17	0.8647	1833	-0.155	0.8767	259	0.82	0.4123
IL21R	rs7205704	16	27400893	A	G	A	3655	0.419	0.6753	1563	0.131	0.8958	1833	0.953	0.3408	259	-1.282	0.1997
IL21R	rs1119132	16	27403469	A	G	A	3506	1.303	0.1926	1563	0.555	0.5789	1684	1.706	0.08801	259	-0.919	0.3578
IL21R	rs1116973	16	27405916	A	T	A	3655	0.108	0.9138	1563	-0.145	0.8846	1833	0.491	0.6232	259	-0.544	0.5865
IL21R	rs2107357	16	27410829	A	G	A	3655	0.976	0.3293	1563	0.575	0.5652	1833	1.2	0.23	259	-0.942	0.3464
IL21R	rs8060368	16	27412414	T	C	C	3655	-0.325	0.7455	1563	-0.711	0.4771	1833	0.074	0.9409	259	0.33	0.7413
IL21R	rs2189521	16	27413566	T	C	C	3655	-0.468	0.6399	1563	-0.024	0.9811	1833	-1.146	0.2516	259	1.35	0.1769
IL21R	rs12934152	16	27414339	T	C	T	2761	1.254	0.2098	1563	0.765	0.4445	939	0.907	0.3643	259	0.489	0.625
IL21R	rs179771	16	27417744	C	G	G	3655	-0.362	0.7174	1563	-0.447	0.6546	1833	-0.356	0.722	259	0.686	0.4929
IL21R	rs7193869	16	27423501	T	C	C	3655	-0.102	0.9184	1563	-0.448	0.654	1833	-0.137	0.8906	259	1.082	0.2793
IL21R	rs179767	16	27425736	T	C	T	3254	0.667	0.5047	1563	0.902	0.3673	1432	-0.197	0.8436	259	0.614	0.5394
IL21R	rs179766	16	27426794	A	C	A	3254	0.669	0.5037	1563	0.903	0.3665	1432	-0.202	0.8399	259	0.626	0.531
IL21R	rs8057432	16	27427592	A	G	G	3655	-0.402	0.6877	1563	0.55	0.582	1833	-0.659	0.5099	259	-1.109	0.2673
IL21R	rs11074858	16	27429237	T	C	T	3655	0.204	0.8381	1563	-0.49	0.6241	1833	0.422	0.6733	259	0.85	0.3956
IL21R	rs11074859	16	27429306	A	G	A	3655	0.164	0.8694	1563	-0.529	0.5966	1833	0.441	0.6589	259	0.744	0.4571
IL21R	rs6498026	16	27431681	A	C	C	3655	-1.647	0.09956	1563	-2.147	0.03177	1833	0.248	0.8045	259	-1.57	0.1163
IL21R	rs7203086	16	27431892	T	C	T	3655	1.692	0.09058	1563	2.247	0.02466	1833	-0.249	0.8033	259	1.501	0.1334
IL21R	rs2040790	16	27432735	T	C	T	3655	1.811	0.07022	1563	2.285	0.0223	1833	-0.127	0.8986	259	1.526	0.1269
IL21R	rs6498029	16	27433394	A	G	G	3655	-1.449	0.1473	1563	-2.296	0.02167	1833	0.647	0.5179	259	-1.524	0.1276
IL21R	rs11074861	16	27434318	T	C	T	3655	1.854	0.0637	1563	2.327	0.01998	1833	-0.104	0.9173	259	1.526	0.1269
IL21R	rs7199138	16	27434533	C	G	C	3655	1.871	0.06132	1563	2.33	0.0198	1833	-0.019	0.9846	259	1.357	0.1749
IL21R	rs8057551	16	27434927	A	G	G	3655	-1.862	0.06265	1563	-2.334	0.0196	1833	0.039	0.9691	259	-1.363	0.1728
IL21R	rs8061992	16	27435038	A	C	A	3655	1.902	0.05711	1563	2.37	0.01777	1833	-0.012	0.9903	259	1.356	0.1749
IL21R	rs8062670	16	27435206	A	G	A	3655	1.916	0.05538	1563	2.372	0.0177	1833	-0.003	0.9978	259	1.378	0.1683
IL21R	rs9930086	16	27435778	T	C	C	3655	-1.94	0.05244	1563	-2.378	0.01738	1833	-0.003	0.9976	259	-1.435	0.1513
IL21R	rs8049804	16	27436783	T	C	C	3655	-1.93	0.05366	1563	-2.362	0.01818	1833	-0.001	0.9989	259	-1.443	0.1491
IL21R	rs179762	16	27437971	A	G	A	3655	1.751	0.08002	1563	1.507	0.1318	1833	0.922	0.3564	259	0.421	0.674
IL21R	rs179760	16	27441283	A	G	G	3655	-2.395	0.01663	1563	-1.125	0.2607	1833	-2.227	0.02594	259	-0.309	0.7574
IL21R	rs3093308	16	27442654	T	C	T	3655	0.175	0.861	1563	-0.042	0.9664	1833	0.715	0.4746	259	-1.141	0.2539
IL21R	rs3091235	16	27442852	A	G	G	3655	-1.861	0.0627	1563	-1.495	0.1348	1833	-1.106	0.2687	259	-0.376	0.707
IL21R	rs8057464	16	27443293	A	C	C	3655	-2.136	0.03264	1563	-1.586	0.1126	1833	-1.437	0.1508	259	-0.306	0.7592
IL21R	rs3093310	16	27443503	T	C	T	3655	0.503	0.6153	1563	0.391	0.6955	1833	0.984	0.325	259	-1.692	0.09061
IL21R	rs3093313	16	27443819	A	G	G	3655	-1.28	0.2006	1563	-0.958	0.3379	1833	-1.548	0.1216	259	1.665	0.09593
IL21R	rs3093315	16	27444030	T	G	T	3655	0.704	0.4812	1563	0.496	0.6197	1833	1.207	0.2276	259	-1.783	0.07455
IL21R	rs3093317	16	27444078	T	C	T	2424	0.631	0.5279	547	0.337	0.7358	1833	0.58	0.5617	44	-0.251	0.8021
IL21R	rs3093319	16	27444492	A	G	G	3655	-1.943	0.05198	1563	-0.448	0.6539	1833	-2.913	0.003585	259	1.549	0.1213
IL21R	rs3093321	16	27445071	A	C	A	3655	1.163	0.2449	1563	1.54	0.1235	1833	0.526	0.5987	259	-0.815	0.4151
IL21R	rs3091236	16	27445188	A	T	A	3655	2.407	0.01608	1563	1.628	0.1035	1833	1.81	0.07026	259	0.228	0.8199
IL21R	rs3093322	16	27445360	C	G	C	3379	1.478	0.1394	1563	0.932	0.3515	1557	0.467	0.6407	259	1.906	0.05664
IL21R	rs3093330	16	27446054	T	C	C	3343	-0.647	0.5178	1251	-0.756	0.4498	1833	-0.454	0.6501	259	0.544	0.5862
IL21R	rs3093336	16	27447304	A	G	A	3655	0.589	0.5561	1563	-0.021	0.9835	1833	0.696	0.4862	259	0.41	0.6821
IL21R	rs3093341	16	27448401	A	G	A	3655	0.612	0.5408	1563	0.06	0.952	1833	0.829	0.407	259	-0.057	0.9549
IL21R	rs3093406	16	27452700	T	C	C	762	-0.652	0.5141	547	0.406	0.6846	NA	NA	NA	215	-1.876	0.06064
IL21R	rs3093363	16	27454562	A	G	A	3655	0.618	0.5368	1563	0.284	0.7761	1833	0.243	0.8082	259	0.976	0.3291

IL21R	rs3093366	16	27455154	A	C	A	3655	0.151	0.8797	1563	-0.325	0.7448	1833	0.638	0.5235	259	-0.329	0.7422
IL21R	rs3093367	16	27455420	A	G	A	1607	0.136	0.8918	1563	0.317	0.7512	NA	NA	NA	44	-1.068	0.2856
IL21R	rs3093378	16	27458058	A	G	G	3655	-0.67	0.5029	1563	-0.283	0.7771	1833	-0.319	0.7495	259	-0.972	0.3312
IL21R	rs3093390	16	27463448	T	C	C	3655	-1.073	0.2834	1563	-0.534	0.5934	1833	-0.579	0.5627	259	-1.179	0.2385
IL21R	rs9935898	16	27463876	C	G	C	3655	0.679	0.4971	1563	0.287	0.7741	1833	0.33	0.7416	259	0.968	0.3328
IL21R	rs12928079	16	27464349	T	C	T	3655	0.682	0.4951	1563	0.294	0.7686	1833	0.327	0.7438	259	0.971	0.3318
IL21R	rs7184872	16	27467337	T	G	T	1822	0.628	0.5302	1563	1.144	0.2527	NA	NA	NA	259	-1.145	0.2521
IL21R	rs12925411	16	27469201	A	G	G	2628	-2.006	0.04485	1563	-1.33	0.1834	806	-0.892	0.3724	259	-1.548	0.1215
IL21R	rs2228248	16	27472772	T	C	C	2628	-1.986	0.04707	1563	-1.365	0.1722	806	-0.979	0.3275	259	-1.245	0.2133
IL21R	rs12932325	16	27473860	A	G	G	2628	-2.046	0.04077	1563	-1.383	0.1665	806	-1.066	0.2864	259	-1.238	0.2158
IL21R	rs12445873	16	27474214	A	G	A	3655	1.107	0.2682	1563	1.386	0.1658	1833	-0.099	0.9209	259	1.018	0.3085
IL21R	rs12919017	16	27474910	A	G	A	2628	2.059	0.03949	1563	1.388	0.165	806	1.078	0.2813	259	1.248	0.2122
IL21R	rs9888849	16	27476299	T	C	T	3655	0.619	0.5356	1563	1.392	0.1641	1833	-0.875	0.3818	259	1.235	0.2167
IL21R	rs12925626	16	27476548	A	G	G	3655	-1.126	0.2602	1563	-1.397	0.1624	1833	0.083	0.9339	259	-1.018	0.3085
IL21R	rs12925304	16	27481836	T	C	T	3655	1.137	0.2556	1563	1.429	0.1529	1833	-0.089	0.9287	259	0.998	0.3185

SNP denotes single nucleotide polymorphism; IgE, immunoglobulin E; and NA, not available.

*SNP association results are for all polymorphisms for which data was available and which were located within 20 kilobases of the transcription start and stop site for the largest transcript of each gene.

