Table S6: GO process analysis of top 100 signals, when compared to all signals, from YRI population using the T_1 test statistic.

Description	p-value	Enrichment	Genes
Interferon-gamma-mediated signaling pathway	3.2×10^{-12}	26.8	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Cellular response to interferon-gamma	2.9×10^{-11}	21.7	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Response to interferon-gamma	2.2×10^{-10}	17.8	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
T cell receptor signaling pathway	1.5×10^{-8}	17.8	FYB, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Antigen processing and presentation of exogenous peptide antigen	3.0×10^{-8}	10.8	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Antigen processing and presentation of exogenous antigen	3.4×10^{-8}	10.6	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Antigen processing and presentation of peptide antigen	5.7×10^{-8}	10.1	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
T cell costimulation	6.8×10^{-8}	19.4	HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Lymphocyte costimulation	7.7×10^{-8}	19.1	HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Immune response-activating signal transduction	1.1×10^{-7}	9.4	DMBT1, FYB, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5, MAP2K3
Antigen receptor-mediated signaling pathway	1.1×10^{-7}	13.8	FYB, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Immune response-activating cell surface receptor signaling pathway	1.8×10^{-7}	13.0	FYB, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Immune response-regulating signaling pathway	2.0×10^{-7}	8.8	DMBT1, FYB, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5, MAP2K3
Antigen processing and presentation	2.0×10^{-7}	8.8	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Immune response-regulating cell surface receptor signaling pathway	3.7×10^{-7}	11.9	FYB, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Antigen processing and presentation of exogenous peptide antigen via MHC class II	6.4×10^{-7}	14.1	HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Antigen processing and presentation of peptide or polysaccharide antigen via MHC class II	7.5×10^{-7}	13.8	HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Antigen processing and presentation of peptide antigen via MHC class II	7.5×10^{-7}	13.8	HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Detection of bacterium	7.9×10^{-7}	52.0	HLA-A, HLA-B, HLA-DRB1, HLA-DRB5
Activation of immune response	8.9×10^{-7}	7.5	DMBT1, FYB, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5, MAP2K3
Positive regulation of T cell activation	3.6×10^{-6}	8.8	HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5, TESPA1
Immunoglobulin production involved in immunoglobulin mediated immune response	4.0×10^{-6}	84.5	HLA-DQB1, HLA-DRB1, HLA-DRB5
Humoral immune response mediated by circulating immunoglobulin	4.0×10^{-6}	84.5	HLA-DQB1, HLA-DRB1, HLA-DRB5
Regulation of immune response	4.8×10^{-6}	4.6	DMBT1, FYB, HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5, MAP2K3
Cytokine-mediated signaling pathway	7.1×10^{-6}	5.9	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Detection of biotic stimulus	9.3×10^{-6}	29.4	HLA-A, HLA-B, HLA-DRB1, HLA-DRB5
Positive regulation of immune response	9.6×10^{-6}	5.7	DMBT1, FYB, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5, MAP2K3
Immunoglobulin production	1.1×10^{-5}	63.4	HLA-DQB1, HLA-DRB1, HLA-DRB5
Antigen processing and presentation of exogenous peptide antigen via MHC class I TAP-independent	1.6×10^{-5}	56.3	HLA-A, HLA-B, HLA-C
Positive regulation of lymphocyte activation	1.9×10^{-5}	7.0	HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5, TESPA1

GO categories in which false discovery rate is less than 0.01.