

Table S13: GO component analysis of top 100 signals, when compared to all signals, from YRI population using the T_1 test statistic.

Description	p -value	Enrichment	Genes
Integral to luminal side of endoplasmic reticulum membrane	9.9×10^{-17}	67.6	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
ER to Golgi transport vesicle membrane	8.8×10^{-16}	56.3	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
MHC protein complex	3.8×10^{-15}	49.7	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Transport vesicle membrane	1.7×10^{-14}	33.8	CPE, HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
MHC class II protein complex	6.7×10^{-13}	84.5	HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Endocytic vesicle membrane	1.3×10^{-12}	23.2	DMBT1, HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Clathrin-coated endocytic vesicle membrane	3.2×10^{-11}	53.8	HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Integral to endoplasmic reticulum membrane	7.1×10^{-11}	19.9	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Trans-Golgi network membrane	1.6×10^{-10}	43.8	HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Intrinsic to endoplasmic reticulum membrane	4.0×10^{-10}	16.7	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Coated vesicle membrane	7.1×10^{-10}	15.8	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Cytoplasmic vesicle membrane	1.4×10^{-8}	7.6	CPE, DMBT1, HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5, SNX19
Vesicle membrane	2.3×10^{-8}	7.3	CPE, DMBT1, HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5, SNX19
Integral to organelle membrane	8.8×10^{-8}	9.6	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Intrinsic to organelle membrane	2.5×10^{-7}	8.6	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Cytoplasmic vesicle part	2.9×10^{-7}	5.9	CPE, DMBT1, HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5, SNX19
Clathrin-coated vesicle membrane	6.9×10^{-7}	13.9	HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Endosome membrane	6.7×10^{-6}	6.0	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Lysosomal membrane	9.2×10^{-6}	9.5	HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Endosomal part	1.0×10^{-5}	5.7	HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Phagocytic vesicle membrane	2.4×10^{-5}	23.3	DMBT1, HLA-A, HLA-B, HLA-C
Vacuolar membrane	2.8×10^{-5}	8.0	HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5
Vacuolar part	6.4×10^{-5}	5.9	GALC, HLA-DPA1, HLA-DPB1, HLA-DQA1, HLA-DQB1, HLA-DRA, HLA-DRB1, HLA-DRB5

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