

Table S8: GO process analysis of top 100 signals, when compared to all signals, from YRI population using the  $T_2$  test statistic.

Description	p-value	Enrichment	Genes
Interferon-gamma-mediated signaling pathway	$8.0 \times 10^{-8}$	19.0	<i>HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQB1, HLA-DRB5</i>
Cellular response to interferon-gamma	$3.6 \times 10^{-7}$	15.3	<i>HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQB1, HLA-DRB5</i>
Detection of bacterium	$7.6 \times 10^{-7}$	52.6	<i>HLA-A, HLA-B, HLA-DRB5, PGLYRP4</i>
Response to interferon-gamma	$1.4 \times 10^{-6}$	12.6	<i>HLA-A, HLA-B, HLA-C, HLA-DPA1, HLA-DPB1, HLA-DQB1, HLA-DRB5</i>

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