

Supplementary Table 1: Associations of 34 SNPs representative of top 50 stage-1 associations in stages 1 and 2:

SNP	Stage-1 Associations (Odds Ratio, p-value)*	Stage-2 Associations (Odds Ratio, p-value) *
rs7778273	1.96 (1.45-2.65, $p=3.5 \times 10^{-5}$)	0.93 (0.73-1.19, $p=0.59$)
rs971398	1.52 (1.23-1.88, $p= \times 10^{-4}$)	1.24 (1.05-1.47, $p=0.01$)
rs17692126	1.63 (1.30-2.04, $p=1.7 \times 10^{-5}$)	1.11 (0.94-1.31, $p=0.21$)
rs12084355	1.63 (1.28-2.07, $p=6.7 \times 10^{-5}$)	0.94 (0.79-1.11, $p=0.47$)
rs1149185	1.52 (1.27-1.82, $p=5.9 \times 10^{-6}$)	1.11 (0.97-1.26, $p=0.13$)
rs2828300	1.58 (1.28-1.95, $p=2.3 \times 10^{-5}$)	1.10 (0.94-1.28, $p=0.23$)
rs10415904	1.67 (1.30-2.14, $p=4.8 \times 10^{-5}$)	1.11 (0.92-1.33, $p=0.27$)
rs8089261	0.64 (0.51-0.81, $p=1.4 \times 10^{-4}$)	0.95 (0.81-1.10, $p=0.48$)
rs7910841	0.64 (0.51-0.80, $p=8.2 \times 10^{-5}$)	0.83 (0.72-0.96, $p=0.01$)
rs26150	1.49 (1.23-1.80, $p=3.1 \times 10^{-5}$)	1.11 (0.98-1.27, $p=0.10$)
rs2401983	0.63 (0.51-0.77, $p=1.5 \times 10^{-5}$)	0.91 (0.78-1.04, $p=0.17$)
rs2063995	1.45 (1.21-1.74, $p=5.5 \times 10^{-5}$)	1.06 (0.93-1.20, $p=0.41$)
rs12523819	0.64 (0.51-0.80, $p=1.1 \times 10^{-4}$)	0.86 (0.74-0.99, $p=0.04$)
rs3785982	1.75 (1.36-2.24, $p=1.0 \times 10^{-5}$)	1.24 (1.03-1.48, $p=0.02$)
rs2774307	1.51 (1.24-1.85, $p=4.3 \times 10^{-5}$)	1.21 (1.05-1.40, $p=0.01$)
rs10220397	0.63 (0.50-0.79, $p=8.6 \times 10^{-5}$)	0.85 (0.73-0.99, $p=0.04$)
rs303850	1.48 (1.22-1.79, $p=5.2 \times 10^{-5}$)	1.13 (1.00-1.29, $p=0.05$)
rs2285769	1.88 (1.40-2.51, $p=2.1 \times 10^{-5}$)	1.14 (0.91-1.42, $p=0.24$)
rs2403733	1.99 (1.48-2.69, $p=5.6 \times 10^{-6}$)	1.23 (0.98-1.56, $p=0.08$)
rs4886078	0.69 (0.57-0.83, $p=8.0 \times 10^{-5}$)	1.03 (0.91-1.17, $p=0.64$)
rs1387389	1.47 (1.22-1.77, $p=5.0 \times 10^{-5}$)	1.20 (1.05-1.37, $p=0.007$)
rs1513848	1.87 (1.41-2.46, $p=1.0 \times 10^{-5}$)	1.25 (1.01-1.55, $p=0.04$)
rs10853246	0.64 (0.53-0.77, $p=4.3 \times 10^{-6}$)	0.99 (0.86-1.12, $p=0.84$)
rs948331	0.64 (0.53-0.78, $p=5.2 \times 10^{-6}$)	0.99 (0.86-1.12, $p=0.83$)

rs3884558	1.84 (1.40-2.41, $p=1.3 \times 10^{-5}$)	1.29 (1.05-1.57, $p=0.01$)
rs17773390	0.64 (0.52-0.79, $p=3.9 \times 10^{-5}$)	1.03 (0.90-1.19, $p=0.64$)
rs421379	1.98 (1.46-2.69, $p=1.2 \times 10^{-5}$)	1.42 (1.11-1.81, $p=0.005$)
rs12576144,	1.52 (1.25-1.85, $p=2.4 \times 10^{-5}$)	NA
rs2280958,	0.68 (0.56-0.82, $p=4.6 \times 10^{-5}$)	NA
rs2415487	1.54 (1.26-1.88, $p=2.5 \times 10^{-5}$)	NA
rs6065734	1.62 (1.25-2.10, $p=2.2 \times 10^{-4}$)	NA
rs7651835	1.60 (1.27-2.02, $p=6.6 \times 10^{-5}$)	NA
rs9346105	1.88 (1.40-2.52, $p=2.2 \times 10^{-5}$)	NA
rs9843503	0.32 (0.18-0.57, $p=1.2 \times 10^{-4}$)	NA

*All associations have been adjusted for ER-status and one SNP was exclude based on high duplicate error rate.