

**Supplementary Table 1: Top pairwise interactions as detected from a `--fast-epistasis` analysis of the WTCCC Crohn's disease and control data using PLINK**

SNP1				SNP2				Interaction test	
			Single-locus				Single-locus		
SNP	Chr	Position	<i>p</i> value	SNP	Chr	Position	<i>p</i> value	$\chi^2$	<i>p</i> value
rs9436212	1	61643372	0.08463	rs11649428	16	76266378	0.1423	37.94	7.315e-10
rs12751992	1	63186351	0.1514	rs1601668	12	18826761	0.08044	35.10	3.144e-09
rs4677143	3	72439370	0.04577	rs8006622	14	39419113	0.05631	35.32	2.809e-09
rs1584444	4	59536174	0.02352	rs2201677	4	102215684	0.07998	38.25	6.233e-10
rs1584444	4	59536174	0.02352	rs12647454	4	102219636	0.0633	37.73	8.157e-10
rs1584444	4	59536174	0.02352	rs6532916	4	102227529	0.02714	38.18	6.493e-10
rs1584444	4	59536174	0.02352	rs10027689	4	102233096	0.03322	35.26	2.899e-09
rs668394	6	154460193	0.1078	rs10156534	9	2926864	0.1464	38.13	6.637e-10
rs511435	6	154460661	0.1116	rs10156534	9	2926864	0.1464	36.56	1.486e-09
rs509544	6	154460900	0.1049	rs10156534	9	2926864	0.1464	37.66	8.461e-10
rs524731	6	154467206	0.1094	rs10156534	9	2926864	0.1464	37.19	1.078e-09
rs7773053	6	156486474	0.1308	rs17825620	14	77254414	0.1664	36.94	1.225e-09
rs2358356	10	19538800	0.08709	rs9540533	13	65213814	0.06114	35.53	2.517e-09
rs2478836	10	30454756	0.09764	rs7217284	17	56691176	0.187	37.43	9.515e-10
rs636646	13	76492331	0.04548	rs301630	16	85211439	0.009047	37.56	8.895e-10
rs7202714	16	30085308	0.0322	rs4471699	16	30227808	1.593e-22	51.56	6.979e-13