

**Supplemental Tables 5-8: Two, four, five and six SNP haplotypes for all SORL1 SNPs**

Haplotype tables using a 2, 4, 5, or 6 SNP sliding window. Black highlights represent haplotypes that are significantly associated with AD, while gray highlights represent haplotypes that are protective. As was evident with the 3 SNP window analyses (see main text and Table 4) there was a general clustering of significant results near SNPs 8-10 at the 5' end in the Caribbean Hispanics, and near SNPs 22-25 at the 3' end in the North Europeans and MIRAGE African American cohorts. Part A refers to the discovery cohorts, Part B refers to the replication cohorts.

Supplemental Table 5

SNP		Discovery Datasets										Replication Datasets																					
SNP#	HAP	North European Families					Caribbean Hispanic Families					Israeli Arab case:control					North European case:control					MIRAGE Caucasians Sibs					MIRAGE African-Americans Sibs						
		Hap frequency	Info	Z Score	Hap p-value	Global sim p	Hap frequency	Info	Z Score	Hap p-value	Global sim p	Control frequency	Cases frequency	Z Score	Hap p-value	Global sim p	Control frequency	Cases frequency	Z Score	Hap p-value	Global sim p	Hap frequency	Info	Z Score	Hap p-value	Global sim p	Hap frequency	Info	Z Score	Hap p-value	Global sim p		
1	2	A	C	0.522	52	-1.978	0.048	0.117	0.310	70	-0.669	0.503	0.625	0.416	0.353	-1.335	0.182	0.019	ND	ND	ND	ND	ND	0.506	67	0.564	0.573	0.885	0.065	27	-1.577	0.115	0.012
1	2	A	G	0.298	47	0.932	0.351		0.286	65	-0.415	0.678		0.342	0.473	2.659	0.0078		ND	ND	ND	ND	ND	0.286	61	-0.010	0.992		0.346	42	-2.008	0.045	
1	2	G	G	0.180	36	1.317	0.188		0.401	66	1.018	0.309		0.229	0.175	-1.398	0.162		ND	ND	ND	ND	ND	0.205	65	-0.599	0.549		0.579	50	2.712	0.0067	
3	4	A	T	0.506	53	-0.911	0.362	0.289	0.498	97	0.033	0.973	0.978	0.489	0.573	2.028	0.043	0.019	0.511	0.630	2.759	0.0058	0.013	0.530	84	0.161	0.872	0.236	0.412	43	-0.749	0.454	0.582
3	4	A	C	0.357	54	1.678	0.093		0.273	72	-0.128	0.898		0.319	0.225	-2.604	0.0092		0.349	0.271	-1.754	0.079		0.372	84	0.841	0.400		0.076	23	-0.709	0.479	
3	4	G	T	0.078	17	-1.188	0.235		0.126	51	0.400	0.689		0.105	0.156	1.388	0.165		0.086	0.030	-2.162	0.031		0.041	20	-2.186	0.029		0.347	46	0.148	0.882	
4	5	T	C	0.307	54	-1.785	0.074	0.217	0.198	61	-0.142	0.887	0.968	0.249	0.398	3.242	0.0012	0.0017	0.321	0.411	2.269	0.023	0.108	0.311	67	-1.403	0.161	0.513	0.112	35	-0.079	0.937	0.761
4	5	C	T	0.360	55	1.563	0.118		0.364	84	0.112	0.911		0.381	0.247	-3.242	0.0012		0.341	0.298	-1.565	0.118		0.386	69	0.960	0.337		0.232	41	0.645	0.519	
5	6	T	A	0.343	56	1.194	0.232	0.509	0.307	83	-0.491	0.823	0.424	0.345	0.268	-2.035	0.042	0.0085	0.336	0.292	-1.374	0.170	0.367	0.368	71	0.307	0.759	0.582	0.221	50	0.404	0.687	0.920
5	6	C	T	0.364	58	-1.304	0.192		0.188	62	-0.081	0.836		0.249	0.405	3.312	0.00093		0.353	0.421	1.791	0.073		0.332	68	-0.934	0.350		0.110	39	-0.651	0.515	
6	7	A	A	0.339	54	1.119	0.263	0.252	0.324	87	-1.041	0.298	0.246	0.372	0.279	-2.132	0.033	0.044	0.357	0.309	-1.441	0.150	0.239	0.361	71	1.403	0.161	0.299	0.241	52	0.134	0.894	0.595
6	7	T	G	0.534	58	-1.668	0.095		0.513	86	1.888	0.059		0.499	0.620	2.435	0.015		0.522	0.592	1.900	0.057		0.443	74	-0.348	0.728		0.538	51	-1.012	0.311	
7	8	G	C	0.526	53	-1.803	0.071	0.185	0.501	87	1.922	0.055	0.051	0.499	0.620	2.476	0.015	0.017	0.527	0.601	1.974	0.048	0.206	0.432	78	-0.755	0.450	0.400	0.553	55	-0.724	0.469	0.786
7	8	A	T	0.419	54	1.185	0.236		0.371	88	-2.168	0.030		0.459	0.322	-2.934	0.0033		0.428	0.349	-2.092	0.036		0.392	75	1.484	0.138		0.252	51	0.089	0.929	
8	9	C	G	0.574	52	-0.522	0.602	0.562	0.629	75	2.829	0.0047	0.0048	0.534	0.659	2.665	0.0077	0.018	0.570	0.640	1.914	0.056	0.046	0.447	64	-0.942	0.346	0.366	0.461	55	0.169	0.866	0.995
8	9	T	A	0.411	52	0.615	0.538		0.349	74	-2.347	0.019		0.447	0.313	-2.903	0.0037		0.417	0.349	-1.862	0.063		0.222	55	0.094	0.925		0.128	30	-0.025	0.980	
8	9	T	G	0.004	0	*	*		0.010	2	*	*		0.010	0.014	0.329	0.742		*	*	-1.862	0.063		0.204	34	1.801	0.072		0.122	29	-0.282	0.793	
9	10	G	C	0.571	54	-0.184	0.854	0.181	0.635	81	2.633	0.0085	0.013	0.539	0.658	2.563	0.010	0.044	0.569	0.646	2.125	0.034	0.070	0.428	61	-0.322	0.747	0.854	0.490	51	-0.105	0.916	0.989
9	10	A	T	0.407	54	0.680	0.497		0.337	78	-2.479	0.013		0.438	0.313	-2.714	0.0067		0.417	0.351	-1.842	0.066		0.228	53	-0.158	0.875		0.122	26	0.317	0.751	
10	11	T	A	0.410	57	0.965	0.335	0.478	0.366	89	-1.527	0.127	0.094	0.418	0.265	-3.187	0.0014	0.0037	0.395	0.322	-1.961	0.050	0.244	0.465	75	-0.330	0.742	0.655	0.193	39	1.039	0.299	0.440
10	11	C	C	0.389	59	-1.381	0.167		0.206	66	-1.062	0.288		0.281	0.423	3.067	0.0022		0.396	0.457	1.748	0.080		0.359	75	-0.400	0.689		0.105	36	-0.505	0.613	
10	11	C	A	0.181	43	0.330	0.742		0.419	84	2.220	0.026		0.271	0.262	-0.268	0.789		0.188	0.193	0.222	0.825		0.157	53	1.039	0.299		0.694	51	-0.167	0.867	
11	12	C	C	0.556	55	-0.034	0.973	0.199	0.706	67	0.112	0.911	0.948	0.690	0.528	-3.146	0.0017	0.0015	0.544	0.463	-1.971	0.049	0.090	0.590	68	0.386	0.700	0.834	0.828	40	0.046	0.963	0.607
11	12	C	C	0.406	54	-0.827	0.408		0.213	67	0.169	0.866		0.310	0.472	3.146	0.0017		0.407	0.497	2.225	0.026		0.366	72	-0.699	0.485		0.104	31	-0.833	0.405	
11	12	A	T	0.039	13	2.067	0.039		0.081	34	-0.362	0.718		0.049	0.040	-0.603	0.546		0.044	0.040	-0.603	0.546		0.044	21	0.480	0.631		0.067	23	0.890	0.373	
12	13	C	G	0.962	11	-2.254	0.024	0.030	0.928	24	0.351	0.725	0.661	1	1	*	*		0.949	0.960	0.739	0.460	0.821	0.961	21	-0.736	0.462	0.471	0.942	25	-0.934	0.350	0.412
12	13	T	A	0.036	11	2.254	0.024		0.067	24	-0.125	0.901		0	0	*	*		0.049	0.040	-0.624	0.533		0.034	22	0.905	0.366		0.047	24	0.709	0.479	
13	14	G	T	0.902	29	-0.881	0.378	0.063	0.803	61	-2.133	0.033	0.019	0.810	0.836	0.695	0.487	0.482	0.868	0.843	-0.846	0.937	0.243	0.906	35	-1.639	0.101	0.235	0.885	36	-0.790	0.429	0.280
13	14	G	C	0.061	18	-0.790	0.430		0.123	50	2.611	0.0090		0.190	0.164	-0.695	0.487		0.081	0.118	1.632	0.103		0.054	21	1.455	0.148		0.059	16	0.025	0.980	
13	14	A	T	0.036	12	2.660	0.0078		0.070	31	-0.727	0.467		*	*	*	*		0.052	0.039	-0.749	0.454		0.036	19	0.706	0.480		0.051	24	0.271	0.787	
14	15	T	G	0.581	52	0.949	0.343	0.703	0.725	72	-2.669	0.0076	0.011	0.541	0.466	-1.419	0.156	0.083	0.569	0.500	-1.752	0.080	0.132	0.614	72	0.291	0.771	0.258	0.887	35	0.268	0.789	0.421
14	15	C	G	0.063	20	-0.344	0.731		0.121	45	2.484	0.013		0.182	0.164	-0.595	0.552		0.082	0.118	1.502	0.133		0.065	18	1.852	0.064		0.054	22	1.072	0.284	
15	16	G	T	0.041	24	-0.353	0.724	0.793	0.040	18	0.118	0.906	0.861	0.044	0.055	0.538	0.591	0.115	0.063	0.008	-3.621	0.00029	0.0031	0.047	22	0.628	0.530	0.253	0.002	1	*	*	0.730
15	16	G	A	0.611	57	0.830	0.407		0.813	78	0.117	0.538		0.680	0.579	-2.064	0.039		0.586	0.609	0.462	0.652		0.644	69	0.866	0.386		0.947	18	0.698	0.485	
15	16	T	T	0.018	2	*	*		0.003	4	*	*		*	*	*	*		0.011	0.016	-0.291	0.771		0.015	10	1.330	0.183		0.004	2	*	*	
16	17	A	T	0.265	52	2.616	0.0089	0.022	0.444	91	0.105	0.916	0.557	0.430	0.332	-2.069	0.039	0.122	0.300	0.348	1.409	0.159	0.0061	0.309	78	-0.728	0.466	0.213	0.762	54	0.425	0.671	0.625
16	17	T	G	0.055	23	-1.445	0.148		0.019	14	-0.494	0.621		0.045	0.050	0.509	0.610		0.074														

Supplemental Table 6

SNP		Discovery Datasets										Replication Dataset																							
SNP#	HAP	North European Families					Caribbean Hispanic Families					Israeli Arab case-control					North European case-control					MIRAGE Caucasians Sibs					MIRAGE African-Americans Sibs								
		Hap frequency	Info	Z	Hap p-value	Global sim p	Hap frequency	Info	Z	Hap p-value	Global sim p	Control frequency	Cases	Z	Hap p-value	Global sim p	Control frequency	Cases	Z	Hap p-value	Global sim p	Hap frequency	Info	Z	Hap p-value	Global sim p	Hap frequency	Info	Z	Hap p-value	Global sim p				
1	2	3	4	A	C	0.256	44	-3.32	<b>0.00086</b>	<b>0.014</b>	0.154	44	-1.039	0.299	0.850	0.230	0.219	-0.011	0.991	<b>0.018</b>	ND	ND	ND	ND	ND	0.269	52	1.521	0.128	0.327	0.041	10	*	*	0.541
1	2	3	4	G	G	0.098	19	2.684	<b>0.0077</b>		0.171	48	1.080	0.280		0.115	0.115	-0.220	0.826		ND	ND	ND	ND	ND	0.094	33	-0.552	0.581		0.185	22	1.213	0.225	
1	2	3	4	G	G	0.044	14	1.195	0.232		0.092	29	-0.708	0.479		0.079	0.116	-3.032	<b>0.0024</b>		ND	ND	ND	ND	ND	0.066	25	0.908	0.364		0.012	7	*	*	
1	2	3	4	A	G	0.015	4	*	*		0.033	9	*	*		0.043	0.096	2.102	<b>0.036</b>		ND	ND	ND	ND	ND	0.011	4	*	*		0.097	19	-1.292	0.196	
1	2	3	4	A	G	0.154	28	0.262	0.793		0.157	49	-0.722	0.470		0.149	0.157	0.241	<b>0.0045</b>		ND	ND	ND	ND	ND	0.164	36	-0.750	0.453		0.164	22	-1.601	0.109	
2	3	4	5	C	A	0.162	32	1.065	0.287	0.458	0.104	39	0.833	0.351	0.892	0.132	0.085	-3.067	<b>0.0039</b>	<b>0.044</b>	ND	ND	ND	ND	ND	0.164	45	0.827	0.531	0.067	0.015	4	*	*	0.851
2	3	4	5	G	A	0.104	21	-0.457	0.648		0.098	44	0.391	0.696		<b>0.086</b>	<b>0.221</b>	<b>3.283</b>	<b>0.0310</b>		ND	ND	ND	ND	ND	0.142	32	0.834	0.404		0.057	19	-0.050	0.960	
2	3	4	5	C	A	<b>0.164</b>	<b>33</b>	<b>-2.259</b>	<b>0.024</b>		0.065	21	-0.328	0.743		0.129	0.091	0.119	0.9055		ND	ND	ND	ND	ND	0.145	39	-0.224	0.823		0.012	4	*	*	
2	3	4	5	G	A	0.149	30	2.015	<b>0.044</b>		0.237	59	-0.755	0.450		0.176	0.123	-0.327	0.743		ND	ND	ND	ND	ND	0.131	32	-0.565	0.572		0.295	36	-0.056	0.955	
2	3	4	5	C	A	0.086	18	-0.816	0.414		0.083	29	-0.759	0.448		0.096	0.140	-0.175	0.861		ND	ND	ND	ND	ND	0.096	26	2.084	<b>0.037</b>		0.021	7	*	*	
5	6	7	8	T	A	0.068	12	-0.915	0.360	0.289	0.041	10	-0.412	0.681	0.444	0.089	0.042	-2.011	<b>0.044</b>	<b>0.019</b>	0.067	0.048	-1.092	0.275	0.627	0.038	9	*	*	0.624	0.026	1	*	*	0.675
5	6	7	8	T	A	0.321	49	1.241	0.215		0.271	74	-1.010	0.313		0.336	0.264	-1.949	0.051		0.339	0.289	-1.591	0.112		0.302	51	1.579	0.114		0.156	38	0.953	0.341	
5	6	7	8	C	G	0.373	54	-0.791	0.429		0.195	54	0.171	0.864		0.233	0.364	2.859	0.0037		0.274	49	-1.910	0.056		0.274	49	-1.253	0.210		0.134	25	-0.892	0.372	
6	7	8	9	G	A	0.527	51	-1.776	0.074	0.278	0.015	77	1.639	0.101	<b>0.045</b>	<b>0.424</b>	<b>0.659</b>	<b>3.374</b>	<b>0.010</b>	<b>0.045</b>	<b>0.510</b>	<b>0.559</b>	<b>2.122</b>	<b>0.033</b>	0.120	0.313	44	-2.004	<b>0.045</b>	0.168	0.320	42	-0.260	0.795	
6	7	8	9	A	T	0.329	49	1.236	0.216		0.290	78	-1.780	0.075	<b>0.045</b>	0.358	0.258	-2.135	<b>0.033</b>		0.381	0.307	-1.621	0.105		0.146	30	0.609	0.542		0.083	21	0.024	0.981	
6	7	8	9	T	G	0.010	1	*	*		0.006	1	*	*		0.010	0	*	*		0.010	0	-1.672	0.095		0.126	24	-0.666	0.386		0.215	25	-0.626	0.531	
6	7	8	9	A	T	0.001	0	*	*		0.004	0	*	*		*	*	*	*		*	*	*	*		0.183	23	2.464	<b>0.014</b>		0.103	19	0.348	0.727	
6	7	8	9	T	A	0.064	11	0.181	0.856		0.037	10	-1.040	0.298		0.084	0.039	-2.008	<b>0.045</b>		0.059	0.048	-0.670	0.503		0.014	4	*	*						
7	8	9	10	C	G	0.528	51	-1.561	0.119	0.187	0.516	74	1.409	0.159	<b>0.025</b>	<b>0.494</b>	<b>0.609</b>	<b>2.385</b>	<b>0.017</b>	0.053	<b>0.513</b>	<b>0.599</b>	<b>2.289</b>	<b>0.022</b>	0.091	0.303	46	-1.694	0.090	0.230	0.320	42	-0.660	0.509	0.853
7	8	9	10	A	T	0.390	53	1.136	0.256		<b>0.317</b>	<b>73</b>	<b>-2.594</b>	<b>0.0095</b>		<b>0.434</b>	<b>0.297</b>	<b>-1.825</b>	<b>0.068</b>		<b>0.417</b>	<b>0.351</b>	<b>-1.825</b>	<b>0.068</b>		0.171	35	0.820	0.412		0.070	20	0.156	0.876	
7	8	9	10	C	G	0.053	14	1.046	0.295		0.126	33	1.932	0.053		0.046	0.052	0.298	0.766		0.053	0.039	-0.702	0.483		0.105	18	0.519	0.603		0.158	29	0.257	0.798	
7	8	9	10	A	T	0.010	1	*	*		0.006	2	*	*		0.009	0.014	0.394	0.693		0.010	0	-1.662	0.096		0.128	24	-0.659	0.510		0.227	24	-0.061	0.952	
7	8	9	10	C	G	0.001	0	*	*		0.001	0	*	*		*	*	*	*		*	*	*	*		0.205	24	2.051	<b>0.039</b>		0.08	18	-0.195	0.845	
8	9	10	11	C	G	0.410	54	-1.041	0.298	0.640	0.218	48	-1.155	0.248	<b>0.0068</b>	<b>0.282</b>	<b>0.406</b>	<b>2.859</b>	<b>0.0043</b>	<b>0.011</b>	<b>0.385</b>	<b>0.454</b>	<b>1.957</b>	<b>0.050</b>	0.392	0.282	43	-1.092	0.275	0.268	0.089	20	0.026	0.979	0.748
8	9	10	11	T	A	0.379	54	0.858	0.391		<b>0.306</b>	<b>66</b>	<b>-2.823</b>	<b>0.026</b>		<b>0.405</b>	<b>0.247</b>	<b>-3.377</b>	<b>0.00073</b>		<b>0.392</b>	<b>0.324</b>	<b>-1.887</b>	<b>0.059</b>		0.218	35	-0.800	0.423		0.064	19	0.151	0.880	
8	9	10	11	C	G	0.172	40	0.164	0.870		0.428	64	3.160	<b>0.0016</b>		0.257	0.255	-0.215	0.830		0.181	0.184	0.186	0.852		0.125	23	-0.162	0.871		0.403	46	-0.645	0.519	
8	9	10	11	T	A	0.001	0	*	*		0.005	0	*	*		0.009	0.014	0.406	0.684		*	*	*	*		0.205	19	2.483	<b>0.014</b>		0.070	17	0.273	0.784	
9	10	11	12	C	G	0.409	57	-1.300	0.194	0.240	0.213	51	-1.818	0.069	<b>0.012</b>	<b>0.282</b>	<b>0.407</b>	<b>2.828</b>	<b>0.0047</b>	<b>0.0080</b>	<b>0.379</b>	<b>0.455</b>	<b>2.143</b>	<b>0.032</b>	0.241	0.263	49	-1.118	0.264	0.591	0.066	17	0.484	0.628	0.853
9	10	11	12	A	T	0.378	54	0.795	0.426		<b>0.315</b>	<b>68</b>	<b>-1.970</b>	<b>0.049</b>		<b>0.410</b>	<b>0.247</b>	<b>-3.390</b>	<b>0.00070</b>		<b>0.394</b>	<b>0.324</b>	<b>-1.906</b>	<b>0.057</b>		0.221	42	-0.464	0.643		0.104	19	0.157	0.875	
9	10	11	12	C	G	0.130	28	-0.772	0.440		0.350	55	2.347	<b>0.019</b>		0.256	0.251	-0.258	0.796		0.140	0.151	0.480	0.631		0.100	17	1.234	0.217		0.345	45	-0.049	0.961	
9	10	11	12	C	G	0.044	13	2.033	<b>0.042</b>		0.081	30	1.377	0.158		0.269	0.372	2.133	<b>0.033</b>		0.049	0.040	-0.574	0.566		0.032	12	-0.823	0.410		0.056	9	*	*	
10	11	12	13	C	G	0.396	56	0.907	0.354	0.127	0.348	77	-1.468	0.142	0.085	0.418	0.265	-3.187	<b>0.0014</b>	<b>0.0037</b>	0.322	0.323	-0.383	0.656	0.325	0.442	71	-0.832	0.527	0.385	0.229	39	0.869	0.504	0.978
10	11	12	13	C	G	0.396	58	-1.391	0.164		0.211	58	-1.112	0.266		<b>0.281</b>	<b>0.423</b>	<b>3.067</b>	<b>0.0022</b>		<b>0.388</b>	<b>0.458</b>	<b>1.967</b>	<b>0.049</b>		0.330	70	-0.803	0.422		0.124	27	-0.488	0.626	
10	11	12	13	C	A	0.035	13	2.034	<b>0.042</b>		0.052	30	1.092	0.848		*	*	*	*		0.040	0.040	-0.624	0.533		0.032	18	0.919	0.358		0.034	17	0.337	0.735	
10	11	12	13	C	A	0.149	30	-0.897	0.370		0.364	63	2.264	<b>0.024</b>		0.271	0.262	-0.268	0.789		0.144	0.152	0.391	0.695		0.163	42	1.578	0.115		0.589	50	-0.358	0.720	
11	12	13	14	A	C	0.488	52	1.396	0.163	0.063	<b>0.599</b>	<b>64</b>	<b>-2.619</b>	<b>0.00088</b>	<b>0.0078</b>	<b>0.558</b>	<b>0.386</b>	<b>-3.075</b>	<b>0.0021</b>	<b>0.00025</b>	<b>0.486</b>	<b>0.365</b>	<b>-2.751</b>	<b>0.0059</b>	<b>0.039</b>	0.531	69	-0.252	0.801	0.428	0.739	40	-0.238	0.712	0.800
11	12	13	14	C	G	0.413	57	-0.996	0.319		<b>0.204</b>	<b>51</b>	<b>2.072</b>	<b>0.038</b>		<b>0.251</b>	<b>0.452</b>	<b>3.684</b>	<b>0.00023</b>		<b>0.382</b>	<b>0.477</b>	<b>2.175</b>	<b>0.030</b>		0.380	64	-0.818	0.413		0.135	28	-0.443	0.658	
11	12	13	14	A	C	0.058	20	-1.958	0.050		0.110	31	1.844	0.065		0.131	0.143	-0.198	0.843		0.057	0.099	1.628	0.104		0.046	15	1.870	0.061		0.074	15	0.145	0.885	
11	12	13	14	A	T	0.034	12	1.985	<b>0.047</b>		0.060	29	-1.214	0.225		0.049	0.040	-0.624	0.523		0.049	0.040	-0.624												



