

Supplementary Table 1. SNPs used for association analysis of *ARHGEF11* and flanking regions in the Amish Family Diabetes Study.

SNP No	DbSNP ID	NCBI Location	Gene Locus	Location (cSNP Type)	Minor Allele Frequency	T2D vs. NGT <i>P</i> -value	DM/IGT vs. NGT <i>P</i> -value
1	RS12742817	153400105		intergenic	0.21	0.58	0.88
2	RS3795727	153402523	<i>HAPLN2</i>	intron 1	0.20	0.38	0.71
3	RS12405992	153407437	<i>HAPLN2</i>	intron 3	0.21	0.33	0.62
4	RS10908510	153410481		intergenic	0.095	0.69	0.71
5	RS6662946	153413974		intergenic	0.25	0.82	0.87
6	RS1361745	153423723	<i>BCAN</i>	5' flank	0.024	0.88	0.43
7	RS3795736	153426005	<i>BCAN</i>	intron 1	0.36	0.20	0.14
8	RS2365716	153428267	<i>BCAN</i>	intron 1	0.003	0.24	0.34
9	RS2277873	153431041	<i>BCAN</i>	intron 4	0.41	0.14	0.92
10	RS12065791	153434324	<i>BCAN</i>	exon 7 (L356S)	0.003	0.74	0.73
11	RS11264511	153437357	<i>BCAN</i>	intron 7	0.33	0.033	0.45
12	RS2236601	153442510		intergenic	0.004	0.71	0.82
13	RS4661210	153447712		intergenic	0.43	0.15	0.65
14	RS1046650	153452073	<i>NES</i>	exon 4 (3'UTR)	0.13	0.20	0.52
15	RS3748570	153453229	<i>NES</i>	exon 4 (L1275P)	0.45	0.36	0.82
16	RS3828043	153453576	<i>NES</i>	exon 4 (G1159G)	0.14	0.16	0.61
17	RS951781	153454610	<i>NES</i>	exon 4 (I815V)	0.45	0.31	0.81
18	RS4559494	153463096		intergenic	0.38	0.26	0.67
19	RS4384231	153473384		intergenic	0.19	0.75	0.86
20	RS11264527	153480472		intergenic	0.38	0.14	0.27
21	RS4661213	153483617	<i>CRABP2</i>	intron 2	0.002	0.28	0.017
22	RS4457570	153486035	<i>CRABP2</i>	intron 1	0.47	0.15	0.10
23	RS3806412	153489626	<i>CRABP2</i>	5' flank	0.47	0.11	0.17
24	RS11264529	153492418		intergenic	0.46	0.24	0.26
25	RS6427327	153501445		intergenic	0.39	0.12	0.057
26	RS3795737	153510129	<i>FLJ12671</i>	exon 1 S130N	0.07	1.00	0.82
27	RS7550297	153513918	<i>CGI-41</i>	intron 1	0.003	0.24	0.33
28	RS4311877	153518666	<i>CGI-41</i>	exon 7 (L400V)	0.002	0.31	0.13
29	RS8658	153519632	<i>CGI-41</i>	exon 8 (3'UTR)	0.32	0.67	1.00
30	RS9842	153525276	<i>HDGF</i>	exon 6 (3'UTR)	0.038	0.75	0.66
31	RS11264535	153535497	<i>HDGF</i>	5' flank	0.24	0.38	0.81

32	RS6657293	153541922		intergenic	0.32	0.055	0.94
33	RS11264546	153556246	<i>PRCC</i>	intron 1	0.41	0.13	0.44
34	RS1412310	153559681	<i>PRCC</i>	intron 1	0.38	0.33	0.38
35	RS3765787	153567538	<i>PRCC</i>	intron 2	0.15	0.34	0.73
36	RS2644615	153574691	<i>PRCC</i>	intron 4	0.14	0.40	0.72
37	RS3765783	153579046	<i>PRCC</i>	intron 5	0.22	0.45	0.90
38	RS928392	153583889	<i>PRCC</i>	3' flank	0.14	0.40	0.72
39	RS928391	153589790	<i>SH2D2A</i>	intron 8	0.22	0.48	0.95
40	RS877097	153591195	<i>SH2D2A</i>	intron 7	0.43	0.16	0.61
41	RS2768764	153600001	<i>SH2D2A</i>	5' flank	0.19	0.75	0.67
42	RS7549730	153605475		intergenic	0.046	0.59	0.18
43	RS1888861	153611034		intergenic	0.19	0.77	0.67
44	RS4661061	153615730		intergenic	0.16	0.61	0.79
45	RS1998977	153617194		intergenic	0.18	0.59	0.94
46	RS4661229	153622279		intergenic	0.39	0.27	0.39
47	RS10908521	153626723	<i>INSRR</i>	intron 15	0.21	0.88	0.30
48	RS3753213	153642659	<i>INSRR</i>	5' flank	0.004	0.37	0.48
49	RS1007210	153643608	<i>INSRR</i>	5' flank	0.013	0.15	0.0021
50	RS2274496	153647271	<i>NTRK1</i>	exon 2 (S89G)	0.005	0.24	0.026
51	RS1800879	153651214	<i>NTRK1</i>	intron 5	0.25	0.95	0.34
52	RS6334	153659306	<i>NTRK1</i>	exon 13 (Q558Q)	0.31	0.20	0.66
53	RS6337	153662068	<i>NTRK1</i>	exon 15 (A629A)	0.31	0.22	0.18
54	RS2768759	153665536	<i>FLJ00193</i>	5' flank	0.29	0.29	0.13
55	RS943551	153668570	<i>FLJ00193</i>	intron 1	0.014	0.046	0.56
56	RS6671171	153684391	<i>FLJ00193</i>	intron 4	0.16	0.78	0.10
57	RS1952294	153690530	<i>FLJ00193</i>	exon 7 (P559S)	0.001	0.52	0.78
58	RS3737224	153692653	<i>FLJ00193</i>	exon 8 (P834P)	0.18	0.97	0.57
59	RS822442	153696287	<i>FLJ00193</i>	exon 16 (K1156N)	0.14	0.53	0.16
60	RS11264581	153696566	<i>FLJ00193</i>	exon 17 (H1193R)	0.19	0.37	0.88
61	RS12137505	153696619	<i>FLJ00193</i>	exon 17 (D1211N)	0.35	0.24	0.88
62	RS4661012	153698564	<i>FLJ00193</i>	intron 30	0.29	0.70	0.34
63	RS822436	153705467	<i>FLJ32884</i>	intron 2	0.20	0.20	0.019
64	RS865239	153709237	<i>FLJ32884</i>	intron 3	0.48	0.10	0.27
65	RS822426	153711903	<i>FLJ32884</i>	intron 4	0.18	0.19	0.017
66	RS11264584	153712361	<i>FLJ32884</i>	intron 5	0.20	0.17	0.0093

67	RS822427	153712665	<i>FLJ32884</i>	intron 6	0.20	0.12	0.0065
68	RS822428	153713022	<i>FLJ32884</i>	intron 6	0.004	0.91	0.87
69	RS2768751	153714091	<i>FLJ32884</i>	intron 7	0.004	0.31	0.36
70	RS12119908	153715295	<i>FLJ32884</i>	exon 15 (H269R)	0.11	0.39	0.14
71	RS822430	153715332	<i>FLJ32884</i>	exon 15 (T283T)	0.47	0.035	0.23
72	RS822431	153715354	<i>FLJ32884</i>	exon 15 (A289S)	0.20	0.24	0.024
73	RS11264585	153715751	<i>FLJ32884</i>	exon 16 (T353T)	0.005	0.87	0.85
74	RS822432	153716216	<i>FLJ32884</i>	3' flank exon 41	0.19	0.10	0.0044
75	RS3187878	153717717	<i>ARHGEF11</i>	(3'UTR) exon 41	0.19	0.086	0.015
76	RS6676	153717891	<i>ARHGEF11</i>	(3'UTR)	0.20	0.21	0.021
77	RS883232	153719523	<i>ARHGEF11</i>	intron 40	0.28	0.36	0.59
78	RS2275198	153719954	<i>ARHGEF11</i>	intron 39	0.19	0.28	0.030
79	RS945508	153720154	<i>ARHGEF11</i>	exon 39 (R1467H)	0.47	0.037	0.17
80	RS868188	153720188	<i>ARHGEF11</i>	exon 39 (G1456S)	0.33	0.25	0.71
81	RS3818807	153722376	<i>ARHGEF11</i>	intron 37	0.20	0.22	0.023
82	RS2275199	153722768	<i>ARHGEF11</i>	exon 36 (N1247N)	0.20	0.15	0.0096
83	RS2275200	153724452	<i>ARHGEF11</i>	intron 34	0.24	0.85	0.14
84	RS2275201	153728111	<i>ARHGEF11</i>	intron 29	0.18	0.18	0.020
85	GEF11-1467	153729377	<i>ARHGEF11</i>	intron 28	0.030	0.31	0.99
86	RS12138039	153731210	<i>ARHGEF11</i>	exon 23 (S649S)	0.076	0.43	0.90
87	RS2275202	153734293	<i>ARHGEF11</i>	intron 22	0.051	0.12	0.0051
88	RS2275204	153738508	<i>ARHGEF11</i>	intron 20	0.19	0.26	0.039
89	RS1572409	153741849	<i>ARHGEF11</i>	intron 17	0.20	0.12	0.0063
90	RS6667252	153743053	<i>ARHGEF11</i>	intron 15	0.006	0.46	0.074
91	RS1336150	153746686	<i>ARHGEF11</i>	intron 11	0.33	0.34	0.47
92	RS4661077	153747966	<i>ARHGEF11</i>	intron 11	0.32	0.44	0.47
93	RS6679776	153749355	<i>ARHGEF11</i>	intron 11	0.20	0.33	0.063
94	RS2275206	153752140	<i>ARHGEF11</i>	intron 10	0.16	0.24	0.053
95	RS1336149	153752248	<i>ARHGEF11</i>	intron 9	0.38	0.54	0.68
96	RS12136088	153754485	<i>ARHGEF11</i>	intron 8	0.23	0.0020	0.0030
97	RS1336147	153757272	<i>ARHGEF11</i>	intron 8	0.24	0.087	0.0086
98	RS1006168	153759971	<i>ARHGEF11</i>	intron 6	0.24	0.028	0.0095
99	RS12141806	153761026	<i>ARHGEF11</i>	intron 6	0.23	0.045	0.0068
100	RS1007604	153761953	<i>ARHGEF11</i>	intron 5	0.23	0.080	0.0070

101	RS1572416	153765127	<i>ARHGEF11</i>	intron 3	0.24	0.084	0.0085
102	RS6427339	153767340	<i>ARHGEF11</i>	intron 2	0.42	0.018	0.0061
103	RS6427340	153767457	<i>ARHGEF11</i>	intron 2	0.41	0.0048	0.0008
104	RS7541702	153767506	<i>ARHGEF11</i>	intron 2	0.23	0.060	0.0090
105	RS3737599	153769130	<i>ARHGEF11</i>	intron 1	0.18	0.38	0.73
106	RS1572414	153776947	<i>ARHGEF11</i>	intron 1	0.24	0.084	0.0085
107	RS884891	153782676	<i>ARHGEF11</i>	intron 1	0.24	0.087	0.0093
108	RS822579	153788095	<i>ARHGEF11</i>	intron 1	0.50	0.29	0.45
109	RS822581	153789298	<i>ARHGEF11</i>	intron 1	0.24	0.084	0.0085
110	RS703152	153790978	<i>ARHGEF11</i>	intron 1	0.24	0.036	0.0030
111	RS1763911	153795341	<i>ARHGEF11</i>	intron 1	0.016	0.64	0.28
112	RS1763908	153797112	<i>ARHGEF11</i>	intron 1	0.19	0.51	1.00
113	RS822576	153804644	<i>ARHGEF11</i>	intron 1	0.47	0.057	0.014
114	RS1336146	153815516	<i>ARHGEF11</i>	intron 1	0.47	0.063	0.015
115	RS822570	153820575	<i>ARHGEF11</i>	intron 1	0.47	0.057	0.015
116	RS11264605	153824398	<i>ARHGEF11</i>	intron 1	0.20	0.42	0.99
117	RS822572	153827775	<i>ARHGEF11</i>	exon 1 (5'UTR)	0.47	0.076	0.016
118	GEF11-113332	153828037	<i>ARHGEF11</i>	exon 1 (5'UTR)	0.48	0.26	0.38
119	RS3806422	153828099	<i>ARHGEF11</i>	exon 1 (5'UTR)	0.19	0.38	0.84
120	RS861086	153829497	<i>ARHGEF11</i>	5'flank	0.007	0.11	0.011
121	RS822585	153830278	<i>ARHGEF11</i>	5'flank	0.41	0.013	0.014
122	RS703111	153832348	<i>ARHGEF11</i>	5'flank	0.19	0.52	1.00
123	RS822586	153833101	<i>ARHGEF11</i>	5'flank	0.002	0.63	0.81
124	RS12045761	153836434	<i>ARHGEF11</i>	5'flank	0.19	0.52	0.85
125	RS866605	153842063	<i>ARHGEF11</i>	5'flank	0.035	0.80	0.55
126	RS1750810	153850563	<i>ARHGEF11</i>	5'flank	0.46	0.062	0.012
127	RS2068299	153861949		intergenic	0.019	0.24	0.094
128	RS4661014	153867810		intergenic	0.47	0.35	0.64
129	RS6677868	153874293		intergenic	0.47	0.34	0.63
130	RS1467662	153878247	<i>LOC440695</i>	intron 4	0.20	0.098	0.14
131	RS983227	153883864	<i>LOC440695</i>	5' flank	0.001	0.64	0.31
132	RS7521028	153890378		intergenic	0.10	0.14	0.98
133	RS1176529	153892203		intergenic	0.33	0.22	0.23
134	RS946577	153899204		intergenic	0.43	0.24	0.059
135	RS998842	153915526	INTRGEN	intergenic	0.20	0.25	0.82
136	RS3737269	153918863	<i>ETV3</i>	intron 1	0.034	0.93	0.80
137	RS6427353	153922697	<i>ETV3</i>	5'flank	0.20	0.43	0.69

138	RS6679296	153930700	intergenic	0.055	0.97	0.37
139	RS992162	153936203	intergenic	0.18	0.052	0.18
140	RS10908531	153941778	intergenic	0.19	0.59	0.98
141	RS1176555	153949614	intergenic	0.19	0.58	0.96
142	RS12038802	153954410	intergenic	0.32	0.31	0.36
143	RS883328	153960182	intergenic	0.32	0.30	0.37
144	RS1970354	153964439	intergenic	0.40	0.84	0.56
145	RS4661018	153984335	intergenic	0.062	0.65	0.12
146	RS11264633	153993955	intergenic	0.004	0.074	0.26
147	RS7511847	154000509	intergenic	0.059	0.72	0.16

NCBI location is based on Build 35.1.

SNPs without RS numbers were identified by direct sequencing and were not in dbSNP
Allele frequencies based upon all AFDS subjects genotyped.