

**Supplementary Table 5. Differentially methylated probes in RAS mutant versus wild-type FN tumors**

Probe	RASmut.mean	RASwt.mean	Mean.diff	P.value	Promoter.related.gene	Category
cg03244411	0.641	0.309	0.332	0	NA	Hypermethylated in RAS mut vs wt FN
cg03442569	0.583	0.219	0.364	0	NA	Hypermethylated in RAS mut vs wt FN
cg21334598	0.707	0.344	0.363	0	NA	Hypermethylated in RAS mut vs wt FN
cg16192707	0.630	0.302	0.328	0	NA	Hypermethylated in RAS mut vs wt FN
cg04537567	0.456	0.164	0.292	0	NA	Hypermethylated in RAS mut vs wt FN
cg24931520	0.602	0.326	0.276	0	NA	Hypermethylated in RAS mut vs wt FN
cg14434870	0.627	0.351	0.276	0	NA	Hypermethylated in RAS mut vs wt FN
cg09249404	0.563	0.283	0.281	0	NA	Hypermethylated in RAS mut vs wt FN
cg23223319	0.587	0.324	0.263	0	NA	Hypermethylated in RAS mut vs wt FN
cg18018027	0.460	0.151	0.310	0	NA	Hypermethylated in RAS mut vs wt FN
cg21126183	0.417	0.126	0.291	0	NA	Hypermethylated in RAS mut vs wt FN
cg14367020	0.656	0.372	0.283	0	NA	Hypermethylated in RAS mut vs wt FN
cg21305834	0.644	0.373	0.271	0	NA	Hypermethylated in RAS mut vs wt FN
cg12380339	0.716	0.398	0.318	0	NA	Hypermethylated in RAS mut vs wt FN
cg11500797	0.746	0.471	0.275	0	NA	Hypermethylated in RAS mut vs wt FN
cg27032146	0.721	0.445	0.276	0	NA	Hypermethylated in RAS mut vs wt FN
cg02847649	0.702	0.417	0.285	0	NA	Hypermethylated in RAS mut vs wt FN
cg17303756	0.541	0.194	0.347	0	NA	Hypermethylated in RAS mut vs wt FN
cg02380531	0.559	0.232	0.327	0	NA	Hypermethylated in RAS mut vs wt FN
cg00006081	0.708	0.445	0.263	0	NA	Hypermethylated in RAS mut vs wt FN
cg24957695	0.611	0.338	0.273	0	NA	Hypermethylated in RAS mut vs wt FN
cg24448969	0.574	0.277	0.298	0	HMX2	Hypermethylated in RAS mut vs wt FN
cg12739584	0.521	0.251	0.270	0	NA	Hypermethylated in RAS mut vs wt FN
cg17697633	0.851	0.558	0.293	0	TFAP2A	Hypermethylated in RAS mut vs wt FN
cg09016968	0.622	0.339	0.282	0	NA	Hypermethylated in RAS mut vs wt FN

**Supplementary Table 5 (continued)**

Probe	RASmut.mean	RASwt.mean	Mean.diff	P.value	Promoter.related.gene	Category
cg11052202	0.593	0.278	0.314	0.000	NA	Hypermethylated in RAS mut vs wt FN
cg18240331	0.739	0.449	0.290	0.000	TFAP2A	Hypermethylated in RAS mut vs wt FN
cg15810758	0.544	0.254	0.290	0.000	NA	Hypermethylated in RAS mut vs wt FN
cg24684807	0.436	0.170	0.266	0.000	NA	Hypermethylated in RAS mut vs wt FN
cg02162880	0.816	0.555	0.261	0.000	TFAP2A	Hypermethylated in RAS mut vs wt FN
cg09637273	0.608	0.339	0.269	0.000	NA	Hypermethylated in RAS mut vs wt FN
cg05929882	0.531	0.252	0.279	0.000	TBX5	Hypermethylated in RAS mut vs wt FN
cg17338430	0.762	0.455	0.307	0.000	NA	Hypermethylated in RAS mut vs wt FN
cg13486532	0.765	0.503	0.262	0.000	NA	Hypermethylated in RAS mut vs wt FN
cg01088410	0.806	0.483	0.324	0.000	NA	Hypermethylated in RAS mut vs wt FN
cg21275135	0.510	0.229	0.281	0.000	NA	Hypermethylated in RAS mut vs wt FN
cg07492757	0.810	0.554	0.256	0.000	TFAP2A	Hypermethylated in RAS mut vs wt FN
cg06103642	0.676	0.422	0.254	0.000	NA	Hypermethylated in RAS mut vs wt FN
cg19290410	0.641	0.354	0.287	0.000	TBX5	Hypermethylated in RAS mut vs wt FN
cg17259358	0.487	0.198	0.289	0.001	NA	Hypermethylated in RAS mut vs wt FN
cg11751545	0.619	0.369	0.250	0.001	NA	Hypermethylated in RAS mut vs wt FN
cg05545672	0.690	0.431	0.260	0.001	NA	Hypermethylated in RAS mut vs wt FN
cg22870775	0.531	0.256	0.275	0.001	NA	Hypermethylated in RAS mut vs wt FN
cg09383907	0.626	0.372	0.254	0.001	NA	Hypermethylated in RAS mut vs wt FN
cg21434530	0.492	0.239	0.254	0.002	NA	Hypermethylated in RAS mut vs wt FN
cg01692639	0.477	0.202	0.275	0.002	NA	Hypermethylated in RAS mut vs wt FN
cg05368966	0.601	0.342	0.259	0.002	NA	Hypermethylated in RAS mut vs wt FN
cg06273075	0.711	0.452	0.259	0.002	MIR193B	Hypermethylated in RAS mut vs wt FN
cg10420310	0.700	0.445	0.255	0.003	MIR193B	Hypermethylated in RAS mut vs wt FN
cg21534423	0.404	0.150	0.253	0.003	NA	Hypermethylated in RAS mut vs wt FN

**Supplementary Table 5 (continued)**

Probe	RASmut.mean	RASwt.mean	Mean.diff	P.value	Promoter.related.gene	Category
cg16559598	0.647	0.373	0.274	0.003	TBX5	Hypermethylated in RAS mut vs wt FN
cg23273897	0.614	0.357	0.257	0.003	MME	Hypermethylated in RAS mut vs wt FN
cg10281002	0.724	0.471	0.253	0.004	TBX5	Hypermethylated in RAS mut vs wt FN
cg08944170	0.751	0.451	0.300	0.004	OR2L13	Hypermethylated in RAS mut vs wt FN
cg04906879	0.740	0.473	0.267	0.004	LOC440925_SP5	Hypermethylated in RAS mut vs wt FN
cg00785941	0.671	0.410	0.262	0.004	OR2L13	Hypermethylated in RAS mut vs wt FN
cg01837362	0.620	0.313	0.307	0.004	NA	Hypermethylated in RAS mut vs wt FN
cg15855970	0.580	0.314	0.266	0.004	NA	Hypermethylated in RAS mut vs wt FN
cg22071224	0.700	0.450	0.250	0.005	LOC440925	Hypermethylated in RAS mut vs wt FN
cg18074954	0.627	0.318	0.309	0.005	NA	Hypermethylated in RAS mut vs wt FN
cg22345214	0.591	0.283	0.308	0.005	GABRA4	Hypermethylated in RAS mut vs wt FN
cg06083330	0.719	0.454	0.265	0.005	NA	Hypermethylated in RAS mut vs wt FN
cg15377586	0.694	0.443	0.251	0.006	LOC440925_SP5	Hypermethylated in RAS mut vs wt FN
cg10514097	0.562	0.266	0.297	0.006	FOXF1	Hypermethylated in RAS mut vs wt FN
cg00551679	0.673	0.392	0.282	0.007	NA	Hypermethylated in RAS mut vs wt FN
cg04624110	0.640	0.317	0.323	0.007	MACROD2	Hypermethylated in RAS mut vs wt FN
cg23054189	0.651	0.293	0.358	0.007	TRIM58	Hypermethylated in RAS mut vs wt FN
cg20507276	0.706	0.434	0.271	0.008	OR2L13	Hypermethylated in RAS mut vs wt FN
cg01552272	0.574	0.277	0.297	0.008	MACROD2	Hypermethylated in RAS mut vs wt FN
cg25951981	0.578	0.290	0.289	0.008	GABRA4	Hypermethylated in RAS mut vs wt FN
cg07533148	0.634	0.292	0.342	0.008	TRIM58	Hypermethylated in RAS mut vs wt FN
cg20810478	0.647	0.288	0.359	0.009	TRIM58	Hypermethylated in RAS mut vs wt FN
cg20146541	0.623	0.282	0.341	0.009	TRIM58	Hypermethylated in RAS mut vs wt FN
cg24154839	0.622	0.320	0.302	0.009	GABRA4	Hypermethylated in RAS mut vs wt FN
cg04407470	0.568	0.309	0.259	0.009	NA	Hypermethylated in RAS mut vs wt FN

**Supplementary Table 5 (continued)**

Probe	RASmut.mean	RASwt.mean	Mean.diff	P.value	Promoter.related.gene	Category
cg03692651	0.823	0.570	0.254	0.009	NA	Hypermethylated in RAS mut vs wt FN
cg21802055	0.561	0.276	0.284	0.009	NA	Hypermethylated in RAS mut vs wt FN
cg10983544	0.487	0.218	0.268	0.009	TRIM58	Hypermethylated in RAS mut vs wt FN
cg16976370	0.623	0.314	0.310	0.009	GABRA4	Hypermethylated in RAS mut vs wt FN
cg23169957	0.583	0.280	0.303	0.009	MACROD2	Hypermethylated in RAS mut vs wt FN
cg16021909	0.584	0.275	0.310	0.009	NA	Hypermethylated in RAS mut vs wt FN
cg03748376	0.741	0.446	0.295	0.009	OR2L13	Hypermethylated in RAS mut vs wt FN
cg25557432	0.550	0.243	0.308	0.010	MACROD2	Hypermethylated in RAS mut vs wt FN
cg13713830	0.636	0.380	0.256	0.010	NA	Hypermethylated in RAS mut vs wt FN
cg00046499	0.689	0.410	0.279	0.011	NA	Hypermethylated in RAS mut vs wt FN
cg20429172	0.676	0.356	0.320	0.011	TRIM58	Hypermethylated in RAS mut vs wt FN
cg08447525	0.561	0.309	0.252	0.011	GPR149	Hypermethylated in RAS mut vs wt FN
cg23191956	0.472	0.217	0.255	0.011	FOXG1	Hypermethylated in RAS mut vs wt FN
cg26157385	0.561	0.280	0.281	0.012	TRIM58	Hypermethylated in RAS mut vs wt FN
cg24080577	0.582	0.311	0.270	0.012	HS3ST1	Hypermethylated in RAS mut vs wt FN
cg25440035	0.624	0.352	0.272	0.012	NA	Hypermethylated in RAS mut vs wt FN
cg05057720	0.777	0.502	0.274	0.014	CLEC14A	Hypermethylated in RAS mut vs wt FN
cg10530883	0.502	0.224	0.278	0.015	IRX1	Hypermethylated in RAS mut vs wt FN
cg23358625	0.743	0.489	0.254	0.016	RPSAP58	Hypermethylated in RAS mut vs wt FN
cg05475934	0.699	0.447	0.252	0.017	APBB1IP	Hypermethylated in RAS mut vs wt FN
cg09789636	0.637	0.363	0.275	0.017	NA	Hypermethylated in RAS mut vs wt FN
cg17861230	0.683	0.370	0.313	0.017	NA	Hypermethylated in RAS mut vs wt FN
cg11671688	0.734	0.465	0.270	0.018	GPR6	Hypermethylated in RAS mut vs wt FN
cg05347845	0.667	0.404	0.263	0.018	ACTA1	Hypermethylated in RAS mut vs wt FN
cg04480386	0.472	0.218	0.255	0.019	NA	Hypermethylated in RAS mut vs wt FN

### Supplementary Table 5 (continued)

Probe	RASmut.mean	RASwt.mean	Mean.diff	P.value	Promoter.related.gene	Category
cg05605052	0.639	0.372	0.267	0.019	RPSAP58	Hypermethylated in RAS mut vs wt FN
cg16404157	0.790	0.534	0.255	0.020	CLEC14A	Hypermethylated in RAS mut vs wt FN
cg16690757	0.554	0.280	0.274	0.022	NA	Hypermethylated in RAS mut vs wt FN
cg21834207	0.509	0.242	0.267	0.026	AGBL4	Hypermethylated in RAS mut vs wt FN
cg12185828	0.580	0.300	0.279	0.027	GCA	Hypermethylated in RAS mut vs wt FN
cg03145999	0.611	0.343	0.268	0.030	ZSCAN18	Hypermethylated in RAS mut vs wt FN
cg16269733	0.709	0.445	0.264	0.030	NA	Hypermethylated in RAS mut vs wt FN
cg18884037	0.487	0.208	0.279	0.032	KHDRBS2	Hypermethylated in RAS mut vs wt FN
cg01963134	0.636	0.360	0.276	0.032	CPNE8	Hypermethylated in RAS mut vs wt FN
cg21784036	0.562	0.290	0.271	0.035	CPNE8	Hypermethylated in RAS mut vs wt FN
cg13509195	0.579	0.294	0.285	0.036	CPNE8	Hypermethylated in RAS mut vs wt FN
cg06781135	0.645	0.376	0.269	0.038	LOC100270746	Hypermethylated in RAS mut vs wt FN
cg19098763	0.602	0.327	0.275	0.039	ELAVL4	Hypermethylated in RAS mut vs wt FN
cg22014661	0.485	0.228	0.257	0.043	KHDRBS2	Hypermethylated in RAS mut vs wt FN
cg14229668	0.595	0.338	0.257	0.043	GCA	Hypermethylated in RAS mut vs wt FN
cg06629130	0.631	0.376	0.256	0.046	NA	Hypermethylated in RAS mut vs wt FN
cg02162286	0.610	0.330	0.280	0.047	NA	Hypermethylated in RAS mut vs wt FN
cg07363657	0.365	0.701	-0.336	0.000	NA	Hypomethylated in RAS mut vs wt FN
cg13700197	0.552	0.820	-0.268	0.000	NA	Hypomethylated in RAS mut vs wt FN
cg25279294	0.352	0.645	-0.293	0.000	OR4D1	Hypomethylated in RAS mut vs wt FN
cg23261846	0.422	0.686	-0.264	0.000	NA	Hypomethylated in RAS mut vs wt FN
cg26090775	0.172	0.470	-0.298	0.000	NA	Hypomethylated in RAS mut vs wt FN
cg21591693	0.435	0.713	-0.278	0.000	NA	Hypomethylated in RAS mut vs wt FN
cg06042826	0.443	0.703	-0.260	0.000	NA	Hypomethylated in RAS mut vs wt FN
cg24239420	0.427	0.691	-0.263	0.000	NA	Hypomethylated in RAS mut vs wt FN

**Supplementary Table 5 (continued)**

Probe	RASmut.mean	RASwt.mean	Mean.diff	P.value	Promoter.related.gene	Category
cg07190012	0.172	0.434	-0.262	0	NA	Hypomethylated in RAS mut vs wt FN
cg08113628	0.322	0.588	-0.266	0	NA	Hypomethylated in RAS mut vs wt FN
cg12494373	0.303	0.581	-0.278	0	NA	Hypomethylated in RAS mut vs wt FN
cg13638737	0.374	0.648	-0.274	0	NA	Hypomethylated in RAS mut vs wt FN
cg01296395	0.309	0.584	-0.274	0	NA	Hypomethylated in RAS mut vs wt FN
cg22466678	0.197	0.506	-0.309	0	NA	Hypomethylated in RAS mut vs wt FN
cg02713162	0.228	0.497	-0.269	0	NA	Hypomethylated in RAS mut vs wt FN
cg15374435	0.129	0.449	-0.320	0	NA	Hypomethylated in RAS mut vs wt FN
cg22573118	0.359	0.653	-0.294	0	CCR3	Hypomethylated in RAS mut vs wt FN
cg26635451	0.282	0.583	-0.301	0	NA	Hypomethylated in RAS mut vs wt FN
cg20253855	0.261	0.518	-0.257	0	NA	Hypomethylated in RAS mut vs wt FN
cg10015974	0.360	0.625	-0.265	0	NA	Hypomethylated in RAS mut vs wt FN
cg11032640	0.389	0.641	-0.251	0	NA	Hypomethylated in RAS mut vs wt FN
cg00110846	0.324	0.580	-0.256	0	NA	Hypomethylated in RAS mut vs wt FN
cg05589489	0.234	0.584	-0.351	0	NA	Hypomethylated in RAS mut vs wt FN
cg05403689	0.379	0.688	-0.309	0	NA	Hypomethylated in RAS mut vs wt FN
cg26732360	0.422	0.684	-0.261	0	NA	Hypomethylated in RAS mut vs wt FN
cg03024678	0.283	0.567	-0.284	0	NA	Hypomethylated in RAS mut vs wt FN
cg26912671	0.267	0.544	-0.277	0	PDE4B	Hypomethylated in RAS mut vs wt FN
cg15296664	0.324	0.623	-0.300	0	NA	Hypomethylated in RAS mut vs wt FN
cg21034034	0.459	0.720	-0.261	0	NA	Hypomethylated in RAS mut vs wt FN
cg08802841	0.240	0.565	-0.325	0	NA	Hypomethylated in RAS mut vs wt FN
cg13519918	0.242	0.546	-0.304	0	NA	Hypomethylated in RAS mut vs wt FN
cg06282556	0.322	0.576	-0.254	0	NA	Hypomethylated in RAS mut vs wt FN
cg23191950	0.351	0.617	-0.266	0	ALDH1A3	Hypomethylated in RAS mut vs wt FN

**Supplementary Table 5 (continued)**

Probe	RASmut.mean	RASwt.mean	Mean.diff	P.value	Promoter.related.gene	Category
cg11543937	0.375	0.676	-0.302	0.001	SPINK5	Hypomethylated in RAS mut vs wt FN
cg18607411	0.182	0.435	-0.253	0.001	NA	Hypomethylated in RAS mut vs wt FN
cg07179669	0.143	0.400	-0.257	0.001	NA	Hypomethylated in RAS mut vs wt FN
cg17502594	0.321	0.577	-0.257	0.001	NA	Hypomethylated in RAS mut vs wt FN
cg17367545	0.435	0.704	-0.269	0.001	NA	Hypomethylated in RAS mut vs wt FN
cg12905371	0.282	0.548	-0.265	0.001	NA	Hypomethylated in RAS mut vs wt FN
cg09174502	0.319	0.599	-0.280	0.001	NA	Hypomethylated in RAS mut vs wt FN
cg14580211	0.333	0.635	-0.302	0.001	NA	Hypomethylated in RAS mut vs wt FN
cg21306949	0.270	0.538	-0.269	0.001	NA	Hypomethylated in RAS mut vs wt FN
cg01093028	0.415	0.690	-0.275	0.001	NA	Hypomethylated in RAS mut vs wt FN
cg18391978	0.267	0.539	-0.273	0.001	NA	Hypomethylated in RAS mut vs wt FN
cg08035234	0.240	0.525	-0.285	0.001	NA	Hypomethylated in RAS mut vs wt FN
cg19022814	0.193	0.448	-0.255	0.001	NA	Hypomethylated in RAS mut vs wt FN
cg25131544	0.210	0.469	-0.259	0.001	NA	Hypomethylated in RAS mut vs wt FN
cg02767633	0.272	0.524	-0.252	0.001	NA	Hypomethylated in RAS mut vs wt FN
cg00361495	0.179	0.431	-0.252	0.001	TRIL	Hypomethylated in RAS mut vs wt FN
cg09883659	0.427	0.697	-0.270	0.002	NA	Hypomethylated in RAS mut vs wt FN
cg07473822	0.516	0.777	-0.262	0.002	NA	Hypomethylated in RAS mut vs wt FN
cg21864304	0.470	0.748	-0.278	0.002	NA	Hypomethylated in RAS mut vs wt FN
cg04687515	0.363	0.615	-0.252	0.002	NA	Hypomethylated in RAS mut vs wt FN
cg10499974	0.450	0.749	-0.300	0.002	NA	Hypomethylated in RAS mut vs wt FN
cg26516362	0.069	0.361	-0.292	0.003	RUFY1	Hypomethylated in RAS mut vs wt FN
cg02136620	0.229	0.479	-0.250	0.003	RUFY1	Hypomethylated in RAS mut vs wt FN
cg09805254	0.445	0.697	-0.252	0.003	NA	Hypomethylated in RAS mut vs wt FN
cg02051616	0.121	0.377	-0.256	0.003	NA	Hypomethylated in RAS mut vs wt FN

### Supplementary Table 5 (continued)

Probe	RASmut.mean	RASwt.mean	Mean.diff	P.value	Promoter.related.gene	Category
cg01916918	0.330	0.591	-0.260	0.004	NA	Hypomethylated in RAS mut vs wt FN
cg18256640	0.465	0.724	-0.259	0.005	NA	Hypomethylated in RAS mut vs wt FN
cg07616471	0.290	0.552	-0.261	0.005	NA	Hypomethylated in RAS mut vs wt FN
cg15929797	0.154	0.531	-0.377	0.005	NA	Hypomethylated in RAS mut vs wt FN
cg00080972	0.124	0.414	-0.290	0.006	RUFY1	Hypomethylated in RAS mut vs wt FN
cg09060608	0.118	0.389	-0.271	0.006	RUFY1	Hypomethylated in RAS mut vs wt FN
cg00982919	0.209	0.504	-0.296	0.006	NA	Hypomethylated in RAS mut vs wt FN
cg05638439	0.323	0.639	-0.316	0.006	NA	Hypomethylated in RAS mut vs wt FN
cg21226059	0.073	0.374	-0.301	0.007	RUFY1	Hypomethylated in RAS mut vs wt FN
cg14820908	0.104	0.405	-0.302	0.007	RUFY1	Hypomethylated in RAS mut vs wt FN
cg05457628	0.085	0.346	-0.261	0.007	RUFY1	Hypomethylated in RAS mut vs wt FN
cg11068784	0.337	0.626	-0.289	0.010	NA	Hypomethylated in RAS mut vs wt FN
cg08686011	0.391	0.644	-0.254	0.013	NA	Hypomethylated in RAS mut vs wt FN
cg08946658	0.435	0.695	-0.259	0.014	NA	Hypomethylated in RAS mut vs wt FN
cg04405612	0.380	0.655	-0.276	0.015	NA	Hypomethylated in RAS mut vs wt FN
cg11230031	0.260	0.519	-0.259	0.016	NA	Hypomethylated in RAS mut vs wt FN
cg02852791	0.253	0.522	-0.268	0.018	NA	Hypomethylated in RAS mut vs wt FN
cg23286646	0.316	0.584	-0.268	0.019	NA	Hypomethylated in RAS mut vs wt FN
cg03287339	0.273	0.527	-0.254	0.020	NA	Hypomethylated in RAS mut vs wt FN