

Supplemental Table 1. Location of metastasis used for array analysis

Site of Metastasis	n=26
Pancreas	4
Adrenal	6
Peritoneum	1
Lymph Node	2
Soft Tissue	6
Bone	3
Liver	2
Lung	2

Supplementary Table 2: List of ccRCC associated genes showing inverse correlation between gene expression and promoter methylation status

Probe ID	Gene symbol	Gene title	Metastatic RCC (n=26) vs Normal (n=9)		Primary RCC (n=9) vs Normal (n=9)		Metastatic RCC (n=26) vs Normal (n=9)		Primary RCC (n=9) vs Normal (n=9)													
			Regulation	Fold change	P-value	Regulation	Fold change	P-value	Probe ID	Ref. gene	Relation to Ref. gene	Location	Regulation	Fold change	P-value	Probe ID	Ref. gene	Relation to Ref. gene	Location	Regulation	Fold change	P-value
Genes up-regulated in Metastatic and Primary RCC compared normal and show promoter hypomethylation in Metastatic and Primary RCC samples																						
LMM_1708934	ADM	adrenomedullin (ADM) [cp] Down	2.740760909	0.00049493	0.00412	0.00229810	ADAM	N. Shave	TS500	Down	2.46480896	2.85E-05	0.00262610	ADM	N. Shave	TS500	Down	2.41144887	0.00511207			
LMM_1709794	ALDOC	aldolase C (Aldolase-C) [cp] Down	5.13878427	2.0804E-05	1.67750748E-07	0.00076144	ALDOC	O. Dentata	TS500	Down	2.25811229	2.5E-05	0.00131137	ALDOC	O. Dentata	TS500	Down	2.21190974	0.00176092			
LMM_1709794	ALDOC	aldolase C (Aldolase-C) [cp] Down	5.13878427	2.0804E-05	1.67750748E-07	0.00076144	ALDOC	O. Dentata	TS500	Down	1.88718869	7.8E-07	0.00178138	ALDOC	O. Dentata	TS500	Down	2.84447487	0.00091291			
LMM_174881	CMB	CMB antigen (CMB) [cp] Down	2.62641441	1.2038E-06	2.41687814E-08	0.00134461	CMB	N. Shave	TS500	Down	2.28117882	0.00132058	0.00145016	ALDOC	O. Dentata	TS500	Down	2.13097263	0.01092724			
LMM_176256	C5orf10	chromosome 5 open reading frame 10 [cp] Down	2.35006917	0.00218493	3.69238954E-06	0.0023139	C5orf10	N. Shave	TS500	Down	1.02186915	0.00511811	0.00444771	C5orf10	N. Shave	TS500	Down	2.21687888	0.00592767			
LMM_214026	CAV1	caveolin 1 (Caveolin-1) [cp] Down	1.9725883	1.715E-05	4.48829513E-07	0.0022041	CAV1	N. Shave	TS500	Down	2.61912870	0.00049486	0.00049486	CAV1	N. Shave	TS500	Down	2.70815301	0.00044357			
LMM_168783	CAV1	caveolin 1 (Caveolin-1) [cp] Down	2.71365215	7.767E-05	2.40375813E-07	0.054068	CAV1	N. Shave	TS500	Down	2.56145402	3.24E-06	0.00076144	CAV1	N. Shave	TS500	Down	2.21190974	0.00176092			
LMM_174881	CMB	CMB antigen (CMB) [cp] Down	2.62641441	1.2038E-06	2.41687814E-08	0.00134461	CMB	N. Shave	TS500	Down	1.90379171	0.00076144	0.00076144	CMB	N. Shave	TS500	Down	2.25811229	0.00176092			
LMM_181620	CYP7	cytochrome P450 family 7 subfamily 1 member 1 [cp] Down	1.90094411	8.04E-06	1.00094411E-06	0.00084411	CYP7	N. Shave	TS500	Down	2.35202150	3.26E-05	0.00131137	CYP7	N. Shave	TS500	Down	1.42422937	0.00045491			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	4.02948763	3.8E-05	0.0059692	HK2	N. Shave	TS500	Down	2.59274862	0.00088221			
LMM_176489	HPCAL1	hypoxanthine phosphoribosyl transferase 1 [cp] Down	1.71794996	0.00081510	2.89975112E-07	0.0044144	HPCAL1	O. Dentata	TS500	Down	2.60093941	2.8E-05	0.00076144	HPCAL1	O. Dentata	TS500	Down	1.8681451	0.00065330			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.6077077	0.00044731	0.00177111	HPCAL1	O. Dentata	TS500	Down	2.50482468	0.01209179			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.6546E-06	2.31684521E-08	0.0016303	HK2	N. Shave	TS500	Down	2.31914294	0.00076144	0.00076144	HPCAL1	O. Dentata	TS500	Down	2.25811229	0.00176092			
LMM_172486	HK2	hexokinase 2 (HK2) [cp] Down	3.49675991	1.65																		

Supplementary Table 3: TCGA Validation of promoter methylation status of 35 ccRCC associated genes.

TCGA-Kidney clear cell renal carcinoma[KIRC] (n=325) vs TCGA-Kidney Normal (n=160)													
Genes with hypomethylated promoter CpG sites					Genes with hypermethylated promoter CpG sites								
Probe ID	Ref_gene	Relation to Island	Location	Regulation	Fold change	P-value	Probe ID	Ref_gene	Relation to Island	Location	Regulation	Fold change	P-value
cg02181247	ADM	N Shore	TSS1500	Down	1.56	1.06E-33	cg17107017	ATP1A1;ATP1A1;A	OpenSea	TSS1500;Body;Body	Up	3.14	5.8E-120
cg08259810	ADM	N Shore	TSS1500	Down	1.50	1.55E-22	cg20309677	ATP1A1;ATP1A1;A	OpenSea	TSS1500;Body;Body	Up	2.06	9.28E-72
cg15835620	ALDOC;ALDOC	OpenSea	5'UTR;1stExon	Down	2.89	7.16E-43	cg17469276	ATP1A1;ATP1A1;A	OpenSea	TSS1500;Body;Body	Up	1.81	1.07E-32
cg06367117	ALDOC;ALDOC	OpenSea	5'UTR;1stExon	Down	1.66	4.54E-11	cg07429038	ATP6V0A4;ATP6V	OpenSea	1stExon;5'UTR;1stExon;5	Up	2.87	4.83E-53
cg13344757	ALDOC	OpenSea	TSS1500	Down	1.83	1.38E-27	cg17093826	ATP6V0A4;ATP6V	OpenSea	5'UTR;1stExon;5'UTR;5'U	Up	1.73	9.85E-22
cg27183188	ALDOC	OpenSea	TSS200	Down	3.28	8.5E-37	cg21048168	ATP6V0A4;ATP6V	OpenSea	5'UTR;5'UTR;TSS200	Up	1.94	5.15E-26
cg14668747	ALDOC	OpenSea	TSS200	Down	2.98	5.26E-36	cg02491878	ATP6V0A4;TMEM	OpenSea	5'UTR;TSS200;5'UTR	Up	1.91	4.29E-29
cg13990559	ALDOC	OpenSea	TSS200	Down	1.82	4.64E-31	cg16354688	CLCNKB;CLCNKB	OpenSea	1stExon;5'UTR	Up	2.64	1.46E-64
cg02344926	ALDOC	OpenSea	TSS200	Down	1.50	2.83E-13	cg20320574	CLCNKB	OpenSea	TSS1500	Up	1.72	1.38E-23
cg04474049	CAV1	N Shore	TSS1500	Down	5.22	7.1E-157	cg02634641	CLCNKB	OpenSea	TSS1500	Up	1.66	1.8E-21
cg20897119	CAV1	N Shore	TSS1500	Down	2.25	1.26E-56	cg15558527	CLCNKB;CLCNKB	OpenSea	TSS1500;Body	Up	1.67	1.02E-36
cg01265597	CAV1	N Shore	TSS1500	Down	1.69	1.25E-52	cg21660130	CLCNKB	OpenSea	TSS200	Up	4.08	1.99E-89
cg25515317	CAV1	N Shore	TSS1500	Down	1.52	3.47E-15	cg21784833	ESRRG	Island	TSS200	Up	2.64	7.88E-44
cg17469978	CAV1	Island	TSS200	Down	3.63	7.1E-159	cg06634716	ESRRG	Island	TSS200	Up	1.83	2.67E-18
cg07838272	CAV1	N Shore	TSS200	Down	2.43	8.84E-76	cg25755575	ESRRG	Island	TSS1500	Up	1.77	3.34E-22
cg24980983	CAV1	Island	TSS200	Down	1.92	3.8E-47	cg11800620	ESRRG	S Shore	TSS1500	Up	1.57	2.03E-15
cg05209483	CD68;CD68;CD68;CD68	N Shelf	1stExon;5'UTR;1stExo	Down	6.94	6.2E-126	cg25975621	ESRRG	Island	TSS200	Up	1.55	3.8E-08
cg18900669	CD68;CD68	N Shelf	TSS1500;TSS1500	Down	2.24	8.28E-63	cg10599770	FAM3B;FAM3B	N Shore	TSS200;TSS200	Up	2.67	2.29E-58
cg21808046	CD68;CD68	N Shelf	TSS1500;TSS1500	Down	2.61	1.43E-62	cg24376266	FAM3B;FAM3B	N Shore	TSS200;TSS200	Up	2.53	4.04E-30
cg15059117	CD68;CD68	N Shelf	TSS200;TSS200	Down	4.32	3.9E-118	cg22612764	FAM3B;FAM3B	N Shore	TSS200;TSS200	Up	1.74	3.66E-26
cg00673646	MS4A6A;MS4A6A;MS	OpenSea	1stExon;5'UTR;5'UTR	Down	5.81	7E-113	cg16353596	FAM3B;FAM3B	N Shore	TSS200;TSS200	Up	1.81	2.36E-25
cg26250585	MS4A6A;MS4A6A;MS	OpenSea	TSS200;TSS200;TSS200	Down	2.83	1.89E-58	cg11286641	FAM3B;FAM3B	N Shore	TSS200;TSS200	Up	1.95	7.98E-19
cg06881914	MS4A6A;MS4A6A;MS	OpenSea	TSS1500;TSS1500;TSS	Down	2.16	3.9E-36	cg20336571	H2AFY2	N Shore	TSS1500	Up	1.61	3.42E-19
cg24026212	MS4A6A;MS4A6A;MS	OpenSea	TSS1500;TSS1500;TSS	Down	2.12	1.05E-43	cg02195211	H2AFY2	Island	TSS200	Up	1.57	6.96E-21
cg20284999	MS4A6A;MS4A6A;MS	OpenSea	TSS1500;TSS1500;TSS	Down	2.10	5.26E-44	cg04539203	H2AFY2	Island	TSS200	Up	1.54	3.91E-18
cg04353769	MS4A6A;MS4A6A;MS	OpenSea	TSS1500;TSS1500;TSS	Down	1.73	9.39E-32	cg17558573	H2AFY2	Island	TSS200	Up	1.51	1.99E-19
cg07170641	MS4A7;MS4A7;MS4A	OpenSea	5'UTR;5'UTR;5'UTR	Down	1.54	8.96E-19	cg14481339	KCNJ1;KCNJ1;KCN	OpenSea	TSS200;TSS200;TSS200;T	Up	3.16	1.15E-57
cg18343292	MS4A7;MS4A7;MS4A	OpenSea	5'UTR;5'UTR;1stExon	Down	2.85	0.00	cg13267718	KCNJ1;KCNJ1;KCN	OpenSea	TSS200;TSS200;TSS200;T	Up	3.01	1.37E-52
cg10853416	MS4A7;MS4A7;MS4A	OpenSea	TSS1500;TSS1500;TSS	Down	2.23	0.00	cg13675753	KCNJ1;KCNJ1;KCN	OpenSea	TSS200;TSS200;TSS200;T	Up	2.40	2.35E-37
cg14632030	MS4A7;MS4A7;MS4A	OpenSea	TSS1500;TSS1500;TSS	Down	1.63	0.00	cg05193830	KCNJ1;KCNJ1;KCN	OpenSea	5'UTR;5'UTR;5'UTR;5'UT	Up	2.05	6.81E-30
cg26351966	SCD	N Shore	TSS1500	Down	3.20	6.6E-122	cg07713705	KCNJ1;KCNJ1;KCN	OpenSea	5'UTR;5'UTR;5'UTR;TSS2	Up	1.70	3.95E-13
cg10377245	SLC16A3;SLC16A3;SLC	Island	TSS200;5'UTR;5'UTR	Down	5.00	4.2E-156	cg27056194	KCNJ1;KCNJ1;KCN	OpenSea	TSS200;TSS200;TSS200;T	Up	1.62	1.64E-16
cg19284277	SLC16A3;SLC16A3;SLC	S Shore	TSS200;5'UTR;5'UTR	Down	4.96	1.9E-125	cg05142617	MAL;MAL;MAL;M	N Shore	TSS1500;TSS1500;TSS15	Up	2.82	7.44E-43
cg23224090	SLC16A3;SLC16A3;SLC	S Shore	TSS200;5'UTR;5'UTR	Down	3.89	3.6E-114	cg02344420	MAL;MAL;MAL;M	N Shore	TSS1500;TSS1500;TSS15	Up	2.26	3.86E-31
cg19590707	SLC16A3;SLC16A3;SLC	Island	5'UTR;TSS1500;5'UTR	Down	3.56	2.64E-93	cg21245652	MAL;MAL;MAL;M	Island	TSS1500;TSS1500;TSS15	Up	1.66	4.24E-20
cg25804541	SLC16A3;SLC16A3;SLC	Island	5'UTR;TSS1500;5'UTR	Down	3.49	8.86E-94	cg25930644	MYH10	N Shore	5'UTR	Up	2.45	8.41E-44
cg27355141	SLC16A3;SLC16A3;SLC	S Shore	TSS200;5'UTR;5'UTR	Down	2.66	3.24E-70	cg28795722	MYH10	S Shore	TSS1500	Up	2.20	2.24E-53
cg09147131	SLC16A3;SLC16A3;SLC	Island	5'UTR;TSS1500;5'UTR	Down	2.57	2.65E-92	cg19580810	RAB25;RAB25	OpenSea	1stExon;5'UTR	Up	4.31	7.44E-92
cg03956820	SLC16A3;SLC16A3;SLC	S Shore	1stExon;5'UTR;5'UTR	Down	2.44	1.59E-58	cg15896939	RAB25	OpenSea	TSS200	Up	3.69	1.69E-65
cg18083597	SLC16A3;SLC16A3;SLC	S Shore	TSS200;5'UTR;5'UTR	Down	2.36	4.28E-66	cg09243900	RAB25	OpenSea	TSS200	Up	3.64	2.74E-54
cg07763231	SLC16A3;SLC16A3	Island	5'UTR;5'UTR	Down	2.36	1.3E-81	cg14294859	SLC25A25;SLC25A	OpenSea	Body;Body;Body;5'UTR	Up	5.00	2.42E-74
cg17932802	SLC16A3;SLC16A3;SLC	Island	TSS200;5'UTR;5'UTR	Down	2.25	1E-94	cg13983182	SLC25A25;SLC25A	OpenSea	Body;TSS1500	Up	2.03	1.48E-58
cg18345635	SLC16A3;SLC16A3	N Shore	TSS1500;TSS1500	Down	2.08	3.32E-43	cg02811197	TMEM213;ATP6V	OpenSea	TSS1500;5'UTR;5'UTR	Up	3.86	9.24E-81
cg21453758	SLC16A3;SLC16A3	N Shore	TSS1500;TSS1500	Down	1.89	1.96E-28	cg03965962	TMEM213;ATP6V	OpenSea	TSS1500;5'UTR;5'UTR	Up	2.85	3.94E-61
cg04184297	SLC16A3;SLC16A3	Island	TSS200;TSS1500	Down	1.57	3.7E-13	cg04950931	TSPAN8	OpenSea	TSS1500	Up	1.95	8.27E-49
cg14654468	SLC16A3;SLC16A3;SLC	Island	TSS1500;5'UTR;1stExo	Down	1.55	3.4E-10	cg12965512	TSPAN8	OpenSea	TSS1500	Up	2.86	7.11E-48
cg23141183	SLC16A3	N Shore	TSS1500	Down	1.55	1.16E-39	cg19871235	TSPAN8	OpenSea	TSS1500	Up	2.64	1.13E-40
cg08296680	SLC16A3;SLC16A3	Island	TSS200;TSS1500	Down	1.52	4.04E-07	cg15684563	TSPAN8	OpenSea	TSS1500	Up	2.55	9.96E-39
cg01942558	TNFAIP6	OpenSea	TSS200	Down	5.26	2.7E-126	cg02965411	TSPAN8	OpenSea	TSS200	Up	1.65	3.99E-23
cg09727050	TNFAIP6;TNFAIP6	OpenSea	5'UTR;1stExon	Down	5.18	5.8E-118	cg00145141	GGT6;GGT6	OpenSea	TSS200;TSS200	Up	2.63	1.79E-44
cg01189638	TNFAIP6	OpenSea	TSS1500	Down	2.85	1.82E-54	cg03044452	GGT6;GGT6	OpenSea	TSS200;TSS200	Up	2.95	3.12E-42
cg01974138	TNFAIP6	OpenSea	TSS1500	Down	1.96	4.59E-29	cg00382185	GGT6;GGT6	OpenSea	TSS200;TSS200	Up	2.02	1.1E-40
cg09827902	C10orf10;RASSF4	OpenSea	TSS1500;Body	Down	4.00	3.12E-80	cg02986463	GGT6;GGT6	OpenSea	TSS200;TSS200	Up	2.03	3.88E-32
cg04444771	C10orf10;RASSF4	S Shelf	5'UTR;Body	Down	3.46	7.52E-91	cg01984798	GGT6;GGT6	OpenSea	TSS200;TSS200	Up	1.72	9.12E-28
cg02334081	C10orf10;RASSF4	OpenSea	TSS1500;Body	Down	1.66	2.16E-25	cg01819502	GGT6;GGT6	OpenSea	TSS1500;TSS1500	Up	1.83	1.35E-18
cg15294851	DYSF;DYSF;DYSF;DYSF	N Shore	TSS1500;TSS1500;TSS	Down	4.08	2.7E-121	cg22628873	GGT6;GGT6	OpenSea	TSS1500;TSS1500	Up	1.65	2.39E-13
cg18186672	DYSF;DYSF;DYSF;DYSF	N Shore	TSS1500;TSS1500;TSS	Down	2.08	1.48E-32	cg01996116	HIGD1A;HIGD1A;H	S Shore	TSS1500;TSS1500;TSS15	Up	2.36	1.51E-38
cg15491567	DYSF;DYSF;DYSF;DYSF	N Shore	TSS1500;TSS1500;TSS	Down	1.84	1.9E-28	cg01293485	HIGD1A;HIGD1A;H	S Shore	TSS1500;TSS1500;TSS15	Up	1.95	5.54E-33
cg05595692	HK2	N Shore	TSS1500	Down	3.83	1.51E-65	cg14508777	HIGD1A;HIGD1A;H	S Shore	TSS1500;TSS1500;TSS15	Up	1.54	2.87E-14
cg18638581	HK2	N Shore	TSS200	Down	1.60	3.02E-28	cg06066452	PLXNB1;PLXNB1	Island	5'UTR;5'UTR	Up	2.65	4.64E-75
cg09769647	HK2	N Shore	TSS200	Down	1.52	5.89E-18	cg02027352	PLXNB1;PLXNB1	N Shore	5'UTR;5'UTR	Up	2.48	1.42E-64
cg08478685	HPCAL1;HPCAL1	OpenSea	5'UTR;5'UTR	Down	4.27	1.7E-108	cg12069042	PLXNB1;PLXNB1	N Shelf	5'UTR;5'UTR	Up	2.40	4.32E-68
cg23728189	HPCAL1;HPCAL1	OpenSea	5'UTR;5'UTR	Down	4.21	1.3E-119	cg09837648	PLXNB1;PLXNB1	N Shelf	5'UTR;5'UTR	Up	2.13	1.65E-47
cg14904034	HPCAL1;HPCAL1	OpenSea	5'UTR;5'UTR	Down	4.17	7.7E-104	cg01189606	PLXNB1;PLXNB1	S Shore	TSS1500;TSS1500	Up	2.03	1.14E-53
cg02101833	HPCAL1;HPCAL1	OpenSea	5'UTR;5'UTR	Down	4.01	8.1E-110	cg02979520	PLXNB1;PLXNB1	S Shore	TSS1500;TSS200	Up	1.81	1.37E-54
cg15773312	HPCAL1;HPCAL1	OpenSea	5'UTR;5'UTR	Down	2.68	3.91E-65	cg21415292	PLXNB1;PLXNB1	N Shelf	5'UTR;5'UTR	Up	1.80	1.73E-43
cg04618171	HPCAL1;HPCAL1	OpenSea	5'UTR;5'UTR	Down	2.38	2.01E-49	cg12030667	PLXNB1;PLXNB1	S Shore	TSS1500;TSS200	Up	1.71	3.73E-43
cg18969008	HPCAL1;HPCAL1	S Shelf	5'UTR;5'UTR	Down	2.22	6.37E-55	cg08534147	PLXNB1;PLXNB1	S Shore	TSS1500;TSS1500	Up	1.53	6.3E-31
cg11938718	HPCAL1;HPCAL1	OpenSea	5'UTR;5'UTR	Down	1.98	5.04E-55	cg24851854	TACSTD2	Island	1stExon	Up	2.38	1.2E-27
cg14118850	HPCAL1;HPCAL1	S Shelf	5'UTR;5'UTR										

Supplemental Table 4. Location of metastasis and prior therapy in patient-matched samples.

Sample	Site of Metastasis	Treatment
1	Bone	No
2	Bone	No
3	Lung	No
4	Soft tissue	No
5	Lung	Sorafenib
6	Lung	No
7	Bone	No
8	Spine	Pazopanib
9	Lung	No
10	Lung	No
11	Lung	No