



Supplemental Material to:

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Gyula Kovacs, Eamonn R. Maher and Farida Latif**

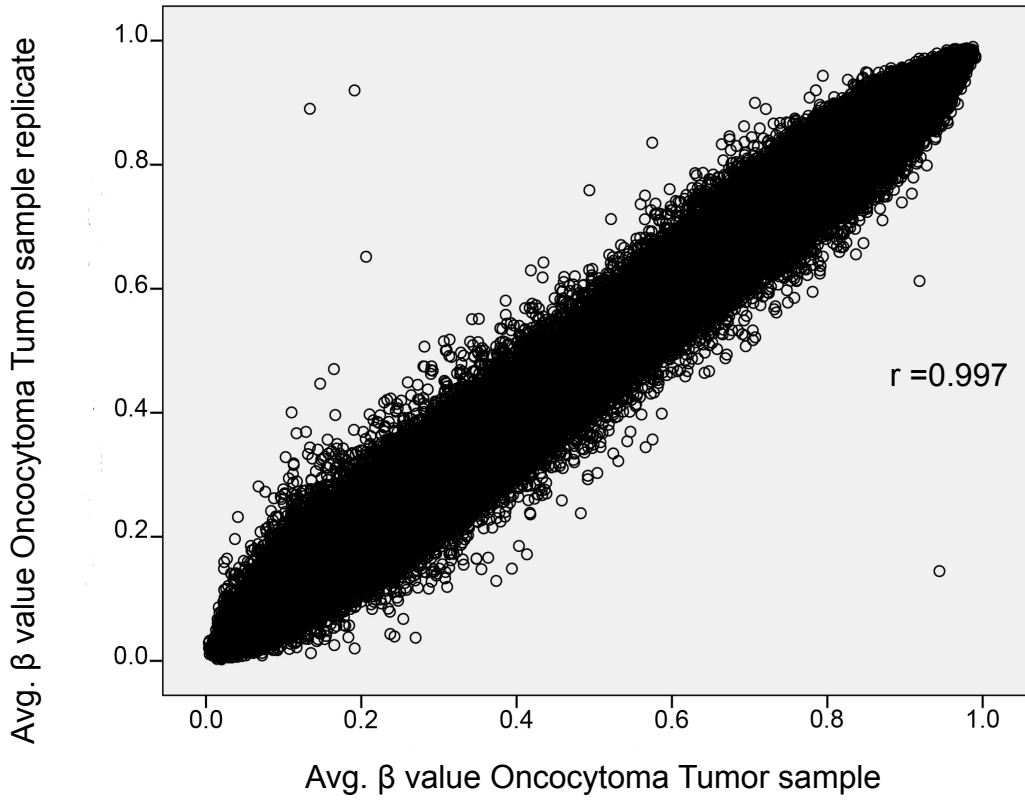
**DNA methylation profiling distinguishes histological
subtypes of renal cell carcinoma**

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<http://dx.doi.org/10.4161/epi.23817>

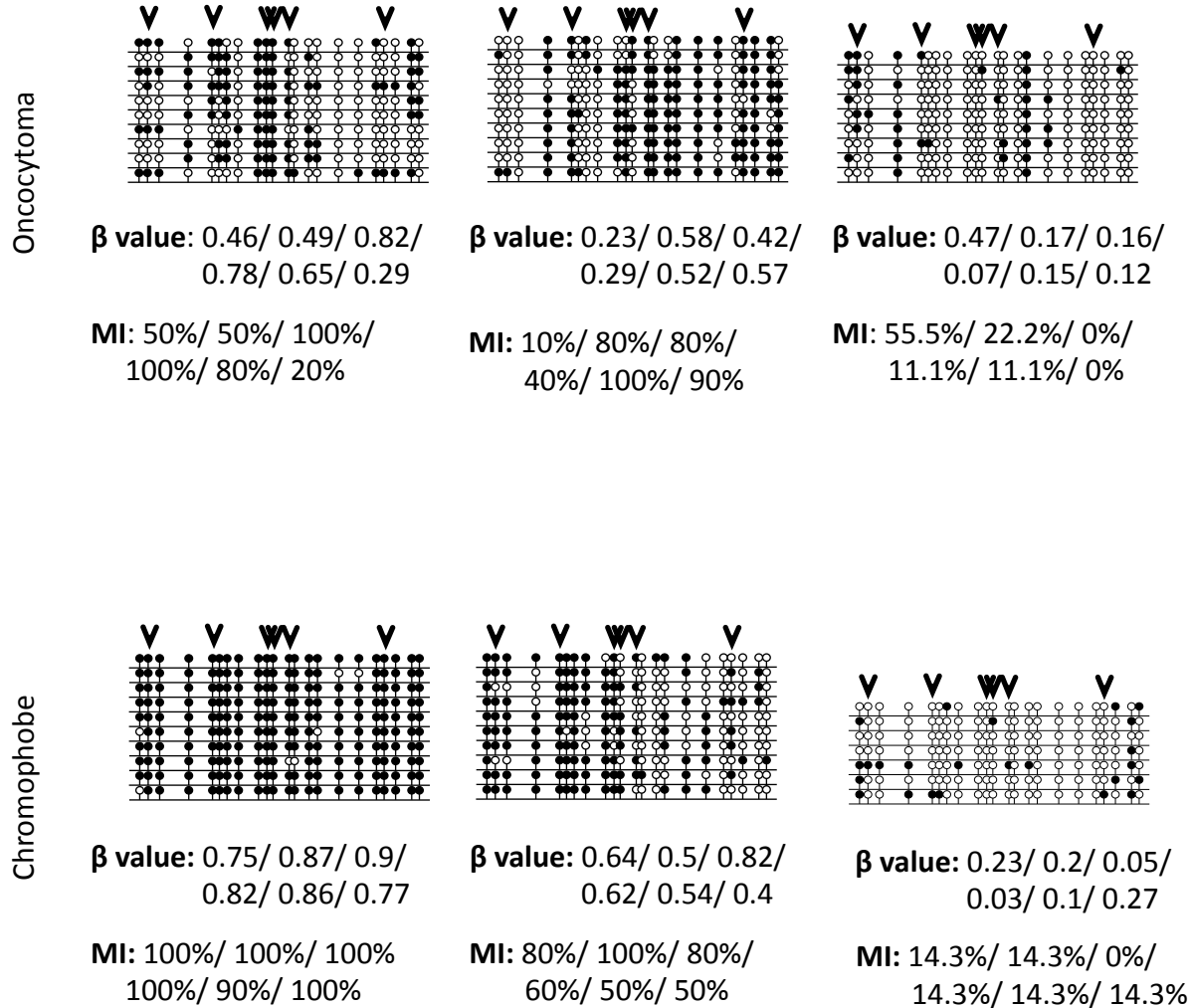
**[http://www.landesbioscience.com/journals/epigenetics/
article/23817/](http://www.landesbioscience.com/journals/epigenetics/article/23817/)**

Supplementary Figure 1

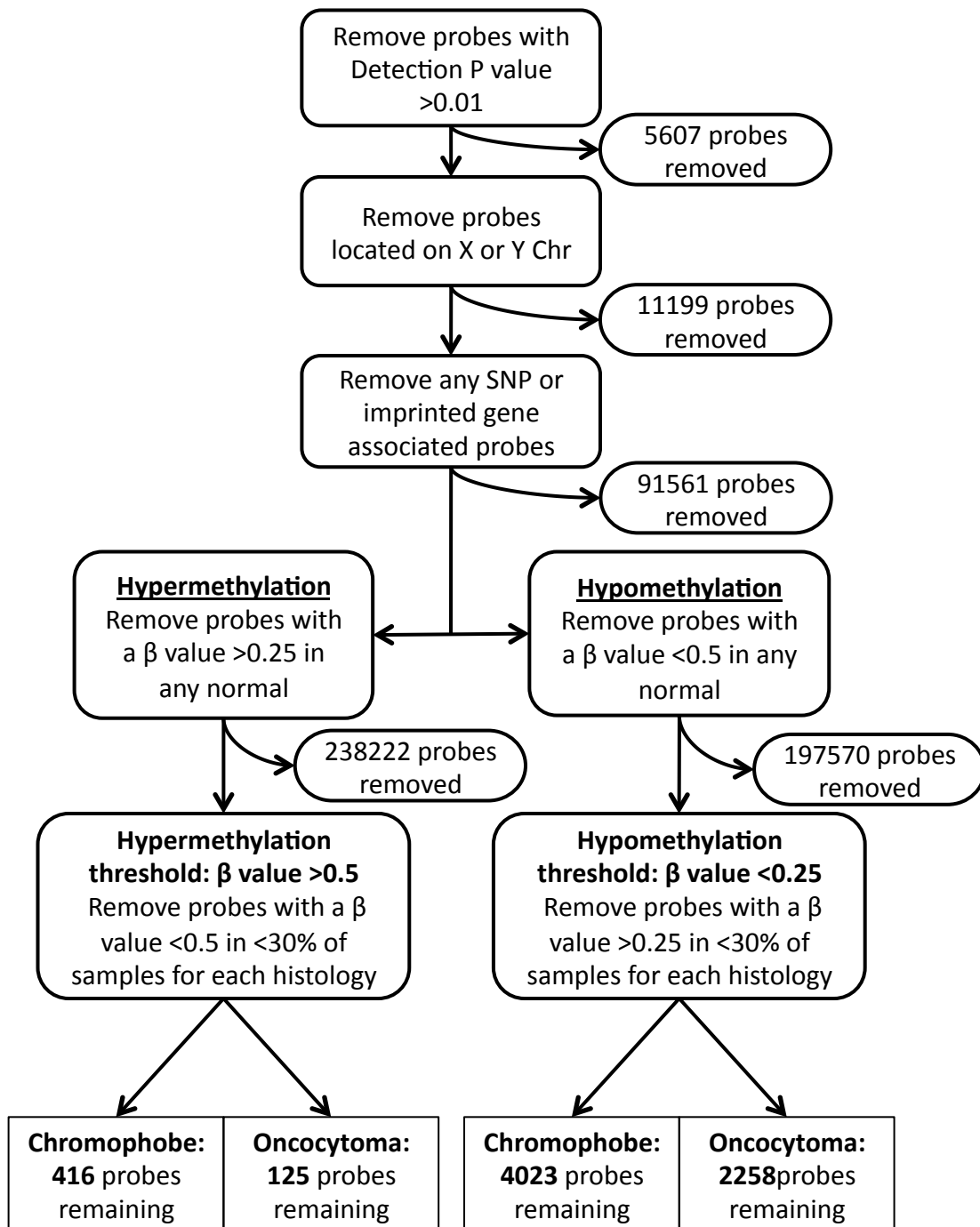


Supplementary Figure 2

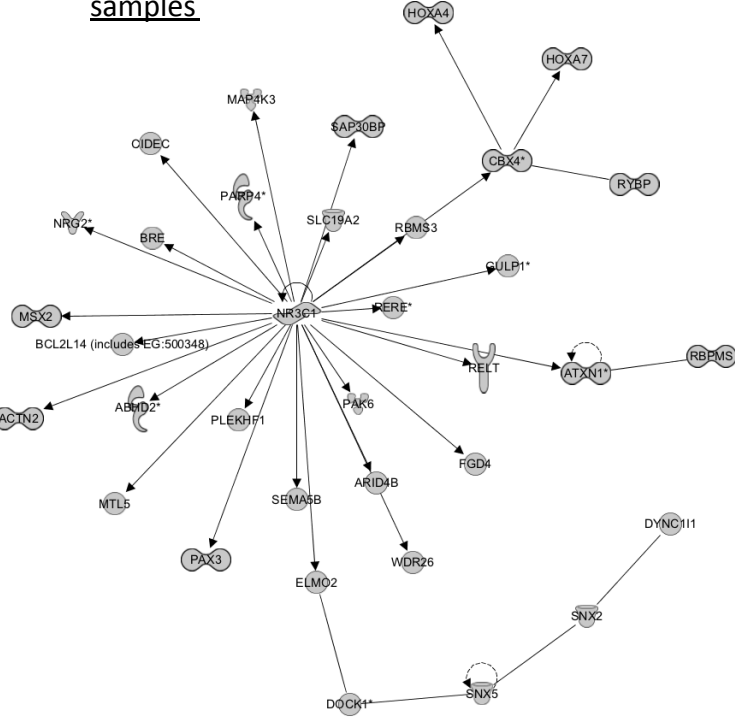
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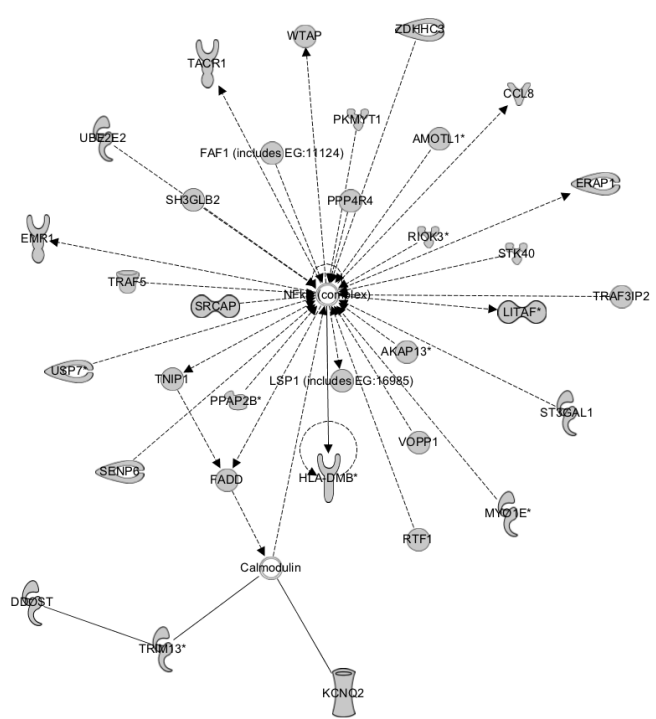
Supplementary Figure 3



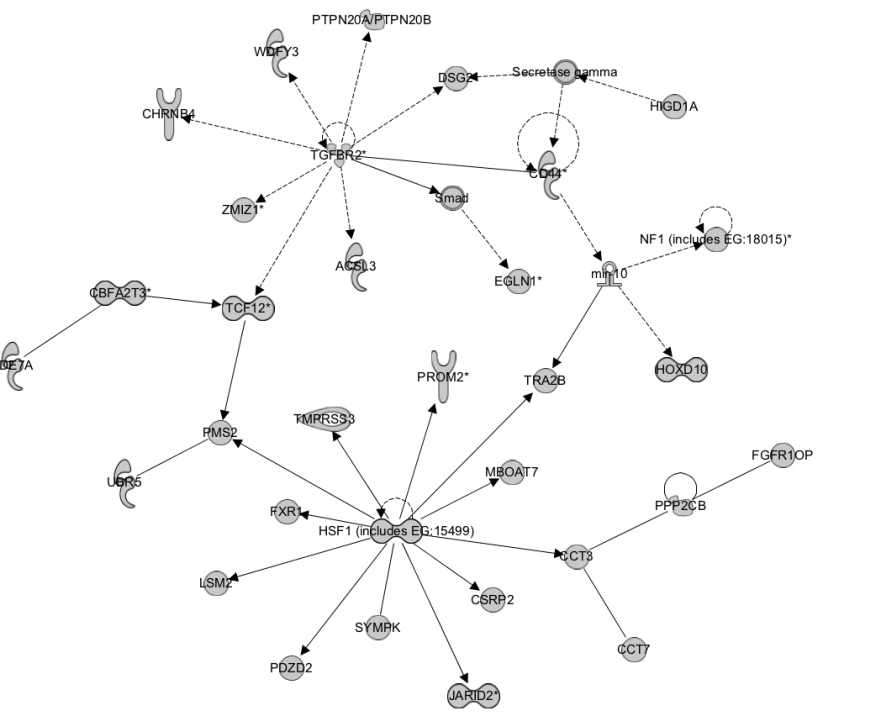
Suppl Figure 4
Ingenuity associated functional networks of genes hypomethylated in >30% Chromophobe samples



Network 1: 35 genes
Top functions: Cell to cell signaling, Hereditary disorders, Neurological disease.



Network 2: 33 genes
Top functions: post-translational modification, Hereditary disorder, Neurological disease.



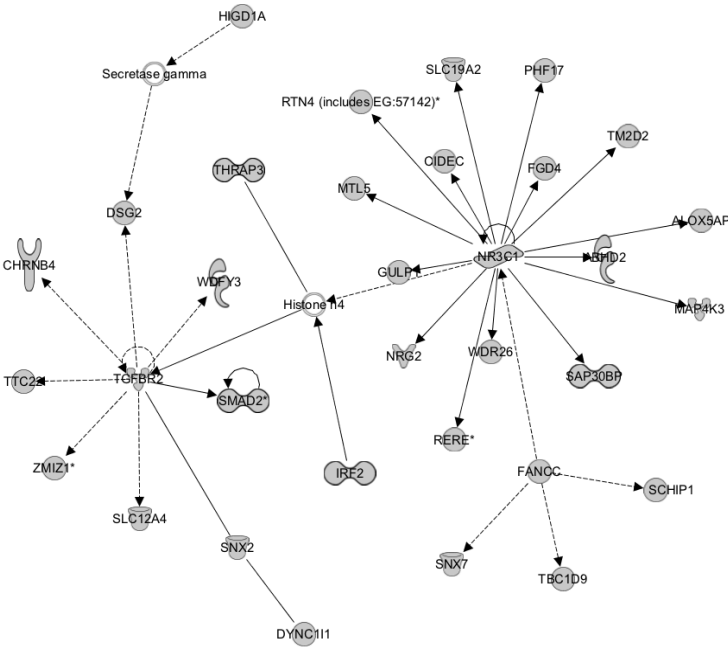
Network 3: 33 genes
Top functions: Tissue morphology, Cancer, Gastrointestinal disease.

Legend

- Cytokine/ Growth Factor
- Enzyme
- Kinase
- Peptidase
- G-Protein coupled receptor
- Transmembrane receptor
- Ion Channel
- Transporter
- Transcription regulator
- MircoRNA
- Complex/ Group
- Other

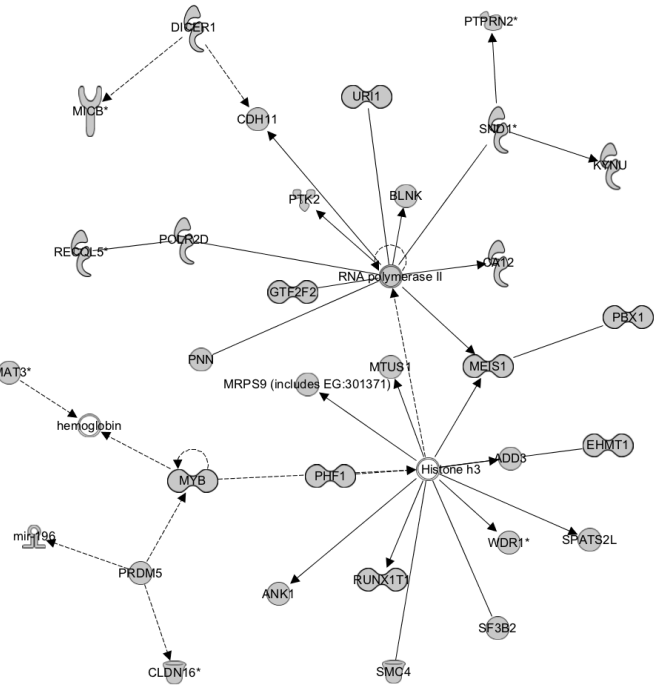
Suppl Figure 5

Ingenuity associated functional networks of genes hypomethylated in >30% Oncocytoma samples



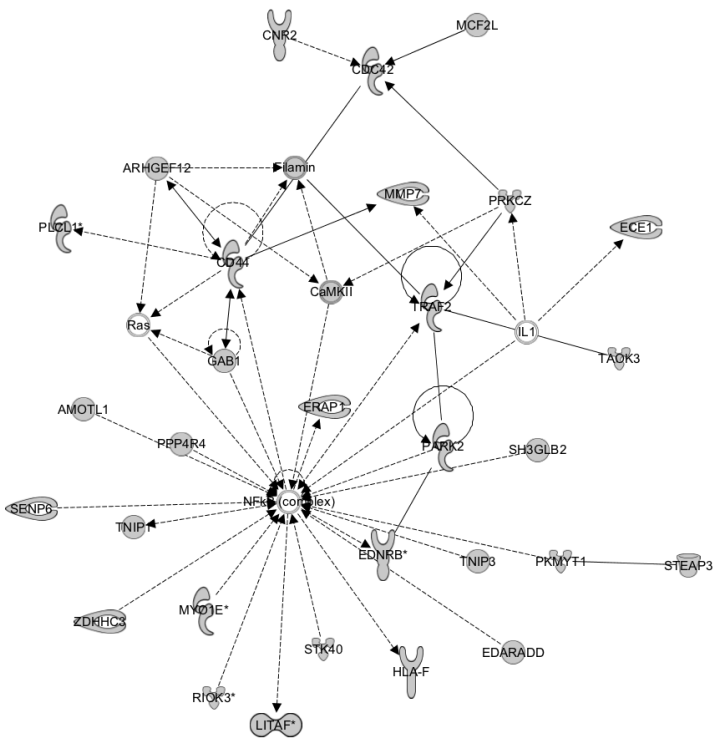
Network 1: 33 genes

Top functions: Hereditary disorder, Neurological disease, Skeletal and muscular disorders.



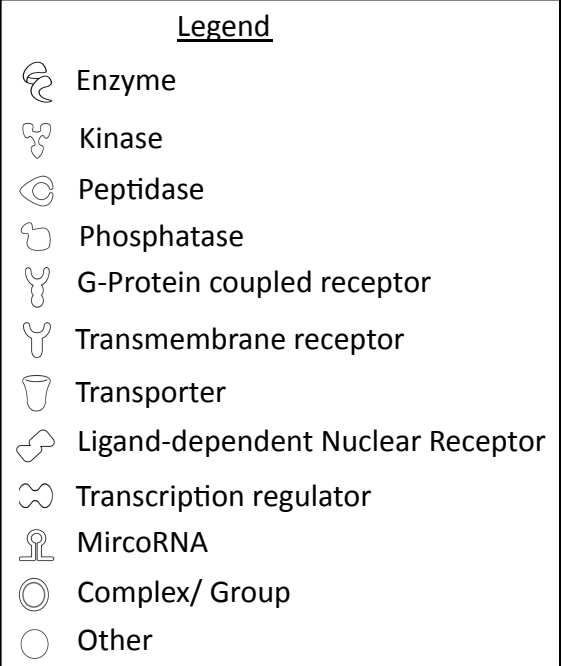
Network 2: 33 genes

Top functions: Cancer, Cellular development, Cellular Function and Maintenance.



Network 3: 30 genes

Top functions: Embryonic development, Lymphoid tissue structure and development, Organ development.



Supplementary Table 1: Gene list of all probes methylated in >30% chromophobe

Gene	Cancer	TargetID	CHR	Prevalance	Frequently Methylated in other Kidney Cancers
ABI3BP	Ch	cg15028548	3	6/20 30.00%	
ACN9	Ch	cg10548492	7	7/20 35.00%	
ADAM5P	Ch	cg14742937	8	7/20 35.00%	
ADAMTS14	Ch	cg04838832	10	9/20 45.00%	
ADAR	Ch	cg13392022	1	6/20 30.00%	
AFF1	Ch	cg17455261	4	8/20 40.00%	
AGAP1	Ch	cg17945789	2	11/20 55.00%	
ALX1	Ch	cg13916459	12	6/20 30.00%	
AMH	Ch	cg05345154	19	6/20 30.00%	
ARHGAP10	Ch	cg11713658	4	7/20 35.00%	
ARHGAP25	Ch	cg12093662	2	6/20 30.00%	
ASCL2	Ch	cg10290276	11	6/20 30.00%	E et al 2012 PMID: 22610075
ATP6V1B1	Ch	cg04751811	2	11/20 55.00%	
ATP6V1B1	Ch	cg06288697	2	15/20 75.00%	
BAG2	Ch	cg10230427	6	7/20 35.00%	
BAG2	Ch	cg27164797	6	6/20 30.00%	
BTNL9	Ch	cg16049690	5	6/20 30.00%	
C16orf68	Ch	cg04616793	16	7/20 35.00%	
C17orf101	Ch	cg21525032	17	7/20 35.00%	
C17orf95	Ch	cg27000944	17	7/20 35.00%	
C1orf14	Ch	cg08146495	1	6/20 30.00%	
C20orf54	Ch	cg11959399	20	6/20 30.00%	
C22orf27	Ch	cg08837037	22	6/20 30.00%	
C2CD4D	Ch	cg04296699	1	6/20 30.00%	
C2CD4D	Ch	cg15015892	1	7/20 35.00%	
C2orf43	Ch	cg14757738	2	10/20 50.00%	
C6orf27	Ch	cg13187827	6	7/20 35.00%	
C7orf58	Ch	cg01597480	7	8/20 40.00%	
CACNA1A	Ch	cg11660879	19	6/20 30.00%	
CACNG7	Ch	cg21477176	19	6/20 30.00%	
CAPN2	Ch	cg06756211	1	13/20 65.00%	
CCDC140	Ch	cg09486778	2	7/20 35.00%	
CCDC64B	Ch	cg14134732	16	6/20 30.00%	
CCDC69	Ch	cg08317263	5	6/20 30.00%	
CCK	Ch	cg16864658	3	9/20 45.00%	
CDX2	Ch	cg00806704	13	7/20 35.00%	
CHD9	Ch	cg09608652	16	6/20 30.00%	
CHRM2	Ch	cg13102079	7	6/20 30.00%	
CHST8	Ch	cg22335692	19	6/20 30.00%	
CLEC11A	Ch	cg13152535	19	7/20 35.00%	
CMTM3	Ch	cg26560414	16	6/20 30.00%	
COL4A1	Ch	cg23008352	13	7/20 35.00%	
CPT1A	Ch	cg13786863	11	7/20 35.00%	
CRY2	Ch	cg16006220	11	6/20 30.00%	
CSDAP1	Ch	cg06301178	16	6/20 30.00%	

CSRP2	Ch	cg21484956	12	6/20	30.00%	
CUX1	Ch	cg02856420	7	10/20	50.00%	
CXCL14	Ch	cg04002608	5	9/20	45.00%	
DBC1	Ch	cg03625109	9	7/20	35.00%	
DCHS2	Ch	cg11934170	4	6/20	30.00%	
DENND3	Ch	cg24476153	8	7/20	35.00%	
DLGAP3	Ch	cg00114029	1	6/20	30.00%	
DLGAP3	Ch	cg18852567	1	8/20	40.00%	
DLGAP3	Ch	cg26228266	1	7/20	35.00%	
DLX1	Ch	cg17737681	2	7/20	35.00%	
DLX4	Ch	cg11472521	17	6/20	30.00%	
DPP4	Ch	cg19350270	2	7/20	35.00%	
DQX1	Ch	cg05652569	2	6/20	30.00%	
DRD4	Ch	cg06299284	11	6/20	30.00%	
ELTD1	Ch	cg15084543	1	12/20	60.00%	
EN2	Ch	cg12034383	7	6/20	30.00%	
EPS8L1	Ch	cg08166750	19	8/20	40.00%	
EPS8L1	Ch	cg12020396	19	11/20	55.00%	
EPS8L1	Ch	cg18320766	19	12/20	60.00%	
EPS8L2	Ch	cg08327690	11	9/20	45.00%	
EVX2	Ch	cg07536910	2	7/20	35.00%	
FAM123A	Ch	cg18815647	13	6/20	30.00%	
FAM125A	Ch	cg02217814	19	6/20	30.00%	
FBLL1	Ch	cg13954457	5	8/20	40.00%	
FHL3	Ch	cg24519393	1	7/20	35.00%	
FLJ22536	Ch	cg08233811	6	6/20	30.00%	
FLJ22536	Ch	cg26158950	6	6/20	30.00%	
FLJ37453	Ch	cg25980637	1	6/20	30.00%	
FOXL2	Ch	cg07135614	3	6/20	30.00%	
GCM2	Ch	cg10074727	6	6/20	30.00%	
GDF6	Ch	cg02246426	8	11/20	55.00%	
GIPC2	Ch	cg01074657	1	10/20	50.00%	
GJA3	Ch	cg22900415	13	6/20	30.00%	
GJB2	Ch	cg00347757	13	6/20	30.00%	
GPRIN1	Ch	cg11214757	5	6/20	30.00%	
GRIK2	Ch	cg21635870	6	8/20	40.00%	
GUCY1B3	Ch	cg04040095	4	7/20	35.00%	
GUCY1B3	Ch	cg18129755	4	7/20	35.00%	
GYPC	Ch	cg04453971	2	7/20	35.00%	
HAPLN1	Ch	cg12199221	5	6/20	30.00%	
HHEX	Ch	cg02185052	10	9/20	45.00%	
HHEX	Ch	cg09721427	10	6/20	30.00%	
HOXA2	Ch	cg02225599	7	8/20	40.00%	
HOXA3	Ch	cg21134232	7	6/20	30.00%	
HOXA9	Ch	cg03217995	7	8/20	40.00%	McRonald.F et al 2009
HOXC10	Ch	cg20402783	12	9/20	45.00%	
HOXC4	Ch	cg19164987	12	7/20	35.00%	
HOXC5	Ch	cg07080050	12	6/20	30.00%	
HSPB9	Ch	cg08880849	17	8/20	40.00%	

HTR2A	Ch	cg15894389	13	6/20	30.00%	
IGF2BP1	Ch	cg02745847	17	7/20	35.00%	
IRX6	Ch	cg01064265	16	7/20	35.00%	
JSRP1	Ch	cg04887494	19	6/20	30.00%	
KCNH3	Ch	cg27382405	12	8/20	40.00%	
KCNJ8	Ch	cg03352106	12	16/20	80.00%	
KCNJ8	Ch	cg16739441	12	9/20	45.00%	
KCNK2	Ch	cg05129325	1	6/20	30.00%	
KCNK2	Ch	cg11200222	1	9/20	45.00%	
KCNQ4	Ch	cg19689322	1	6/20	30.00%	
KRT27	Ch	cg02399249	17	6/20	30.00%	
LASP1	Ch	cg04569429	17	6/20	30.00%	
LBX1	Ch	cg03053579	10	6/20	30.00%	
LHX2	Ch	cg14425564	9	8/20	40.00%	
LHX8	Ch	cg11842415	1	6/20	30.00%	
LMO2	Ch	cg06148118	11	7/20	35.00%	
LOC100130522	Ch	cg12061113	18	7/20	35.00%	
LOC100132111	Ch	cg24051554	1	8/20	40.00%	
LOC645323	Ch	cg03632704	5	7/20	35.00%	
LOC645323	Ch	cg12991050	5	6/20	30.00%	
LOC645323	Ch	cg13982098	5	7/20	35.00%	
LRRC32	Ch	cg01439670	11	6/20	30.00%	
LRRC32	Ch	cg13633560	11	6/20	30.00%	
LYPD5	Ch	cg11898486	19	7/20	35.00%	
MAML2	Ch	cg24088496	11	8/20	40.00%	
MANEAL	Ch	cg00664416	1	6/20	30.00%	
MEOX2	Ch	cg07395354	7	7/20	35.00%	
MKX	Ch	cg08423533	10	7/20	35.00%	
MKX	Ch	cg26298409	10	6/20	30.00%	
MRC2	Ch	cg24368031	17	9/20	45.00%	
MYO3A	Ch	cg02232704	10	6/20	30.00%	
NCKAP5	Ch	cg02715592	2	7/20	35.00%	
NEUROD1	Ch	cg01897496	2	7/20	35.00%	
NFE2L3	Ch	cg10536999	7	8/20	40.00%	
NKAPL	Ch	cg17384889	6	6/20	30.00%	
NKX1-2	Ch	cg00486352	10	6/20	30.00%	
NKX6-2	Ch	cg11174855	10	7/20	35.00%	E et al 2012 PMID: 22610075
NOS1	Ch	cg17119907	12	7/20	35.00%	
NPHP4	Ch	cg20383686	1	6/20	30.00%	
NR2E1	Ch	cg18569734	6	6/20	30.00%	
OTP	Ch	cg16703762	5	6/20	30.00%	
OTX2	Ch	cg13023623	14	8/20	40.00%	
OTX2	Ch	cg15607672	14	7/20	35.00%	
PACS2	Ch	cg22976533	14	8/20	40.00%	
PARD3	Ch	cg15292765	10	17/20	85.00%	
PAX3	Ch	cg13767755	2	6/20	30.00%	
PAX3	Ch	cg14093610	2	6/20	30.00%	
PAX5	Ch	cg03261800	9	8/20	40.00%	
PCDH17	Ch	cg12432236	13	6/20	30.00%	VL et al 2011 PMID: 21847011

PCDHA12	Ch	cg09852127	5	7/20 35.00%	
PCDHA7	Ch	cg02051771	5	6/20 30.00%	
PCDHB15	Ch	cg10757144	5	7/20 35.00%	
PCDHB17	Ch	cg21777188	5	6/20 30.00%	
PCDHB3	Ch	cg24586758	5	10/20 50.00%	
PCDHGA2	Ch	cg18781988	5	8/20 40.00%	
PCDHGA4	Ch	cg06757585	5	7/20 35.00%	
PCSK6	Ch	cg07324702	15	14/20 70.00%	
PDE4D	Ch	cg03323696	5	6/20 30.00%	
PHACTR1	Ch	cg13246235	6	9/20 45.00%	
PHOX2B	Ch	cg01416712	4	8/20 40.00%	
PHOX2B	Ch	cg05323533	4	8/20 40.00%	
PITX1	Ch	cg00396667	5	6/20 30.00%	
PITX2	Ch	cg08979895	4	6/20 30.00%	McRonald.F et al 2009
PM20D1	Ch	cg11965913	1	8/20 40.00%	
PPP2R2A	Ch	cg08201604	8	7/20 35.00%	
PRDM13	Ch	cg01815538	6	6/20 30.00%	
PRDM16	Ch	cg03254465	1	8/20 40.00%	
PRDM16	Ch	cg09990962	1	10/20 50.00%	
PRDM16	Ch	cg14200569	1	10/20 50.00%	
PRKCDBP	Ch	cg26678920	11	7/20 35.00%	
PROCA1	Ch	cg02685896	17	11/20 55.00%	
PROCA1	Ch	cg14676825	17	10/20 50.00%	
PRR5	Ch	cg24019054	22	7/20 35.00%	
PRRT1	Ch	cg22897615	6	6/20 30.00%	
PSKH2	Ch	cg09506473	8	6/20 30.00%	
PTHLH	Ch	cg10253371	12	8/20 40.00%	
PTPRD	Ch	cg09371281	9	6/20 30.00%	
PTPRD	Ch	cg14458619	9	7/20 35.00%	
RAB37	Ch	cg16347279	17	6/20 30.00%	
RALYL	Ch	cg22403811	8	6/20 30.00%	
RASA3	Ch	cg14696311	13	11/20 55.00%	
RAX	Ch	cg03671802	18	6/20 30.00%	
RBM20	Ch	cg08692733	10	6/20 30.00%	
RRBP1	Ch	cg26447697	20	6/20 30.00%	
SALL1	Ch	cg08304084	16	12/20 60.00%	
SCMH1	Ch	cg00826203	1	6/20 30.00%	
SDK1	Ch	cg16956686	7	9/20 45.00%	
SDK1	Ch	cg24796546	7	8/20 40.00%	
SDK2	Ch	cg06061257	17	7/20 35.00%	
SEMA4A	Ch	cg05047401	1	6/20 30.00%	
SH3PXD2A	Ch	cg18735015	10	6/20 30.00%	
SH3RF3	Ch	cg18145759	2	7/20 35.00%	
SHANK2	Ch	cg26591930	11	7/20 35.00%	
SIAH3	Ch	cg26667946	13	6/20 30.00%	
SIM1	Ch	cg08074534	6	6/20 30.00%	
SIX2	Ch	cg24887265	2	6/20 30.00%	
SKAP2	Ch	cg03730533	7	7/20 35.00%	
SLC16A12	Ch	cg03616221	10	7/20 35.00%	

SLC2A14	Ch	cg06645921	12	9/20	45.00%	
SLC2A3	Ch	cg20972214	12	8/20	40.00%	
SLC2A9	Ch	cg25117600	4	10/20	50.00%	
SLFN12L	Ch	cg22763680	17	6/20	30.00%	
SLITRK1	Ch	cg16727923	13	7/20	35.00%	
SOX1	Ch	cg16705627	13	6/20	30.00%	
SOX2OT	Ch	cg24513480	3	8/20	40.00%	
SPG20	Ch	cg10558887	13	7/20	35.00%	
SRCIN1	Ch	cg19409060	17	7/20	35.00%	
TAF13	Ch	cg20569839	1	6/20	30.00%	
TBCD	Ch	cg00960700	17	6/20	30.00%	
TCTEX1D1	Ch	cg09769134	1	7/20	35.00%	
TET1	Ch	cg02952701	10	8/20	40.00%	
TET1	Ch	cg22876739	10	7/20	35.00%	
TFAP2B	Ch	cg00908833	6	6/20	30.00%	
TFAP2B	Ch	cg03159396	6	12/20	60.00%	
TFAP2B	Ch	cg05437823	6	8/20	40.00%	
TFAP2B	Ch	cg08178940	6	14/20	70.00%	
TFAP2B	Ch	cg08857063	6	8/20	40.00%	
TFAP2B	Ch	cg17343563	6	11/20	55.00%	
TFAP2B	Ch	cg17507887	6	7/20	35.00%	
TFAP2B	Ch	cg22282405	6	9/20	45.00%	
THBS4	Ch	cg19025234	5	6/20	30.00%	
TLX3	Ch	cg25942450	5	7/20	35.00%	Ricketts et al 2012
TMC2	Ch	cg07341624	20	6/20	30.00%	
TMEM171	Ch	cg10795659	5	9/20	45.00%	
TMEM37	Ch	cg09474442	2	6/20	30.00%	
TMEM37	Ch	cg09715353	2	9/20	45.00%	
TOX2	Ch	cg10900455	20	6/20	30.00%	
TRIL	Ch	cg02624770	7	6/20	30.00%	
TRIM10	Ch	cg16912957	6	8/20	40.00%	
TRIM10	Ch	cg18420781	6	6/20	30.00%	
TRIM46	Ch	cg15497761	1	6/20	30.00%	
TRIM59	Ch	cg15618978	3	6/20	30.00%	
TUBGCP6	Ch	cg19851816	22	7/20	35.00%	
TULP1	Ch	cg24281267	6	10/20	50.00%	
TXNRD1	Ch	cg09884423	12	6/20	30.00%	
VPS37B	Ch	cg16953816	12	18/20	90.00%	
VSX1	Ch	cg02898293	20	6/20	30.00%	
ZC3H12D	Ch	cg09313931	6	7/20	35.00%	
ZC3H12D	Ch	cg10308253	6	7/20	35.00%	
ZC3H12D	Ch	cg15559674	6	11/20	55.00%	
ZEB2	Ch	cg09596336	2	6/20	30.00%	
ZFHX3	Ch	cg08512490	16	8/20	40.00%	
ZFHX3	Ch	cg16630989	16	7/20	35.00%	
ZIC1	Ch	cg05095591	3	6/20	30.00%	
ZIC2	Ch	cg24742746	13	7/20	35.00%	
ZIC4	Ch	cg01137401	3	7/20	35.00%	
ZIC4	Ch	cg04556126	3	6/20	30.00%	

ZNF177	Ch	cg09578475	19	6/20 30.00%	Ricketts et al 2012
ZNF83	Ch	cg17132967	19	6/20 30.00%	

Suppl Table 2: Gene list of all probes methylated in >30% oncocytoma Samples

Gene	Cancer	TargetID	CHR	Prevalance	Frequently Methylated in other Kidney Cancers
ACBD4	Onco	cg00677574	17	10/21 47.62%	
ACBD5	Onco	cg14240646	10	7/21 33.33%	
ACN9	Onco	cg10548492	7	7/21 33.33%	
ACP5	Onco	cg04566159	19	7/21 33.33%	
ADAMTS14	Onco	cg04838832	10	7/21 33.33%	
AFF1	Onco	cg17455261	4	9/21 42.86%	
AGAP1	Onco	cg17945789	2	13/21 61.90%	
ALCAM	Onco	cg05645404	3	12/21 57.14%	
ARHGAP10	Onco	cg11713658	4	12/21 57.14%	
ASB4	Onco	cg02805025	7	11/21 52.38%	
ATP6V1B1	Onco	cg04751811	2	14/21 66.67%	
ATP6V1B1	Onco	cg06288697	2	15/21 71.43%	
C14orf64	Onco	cg16278496	14	7/21 33.33%	
C2orf43	Onco	cg14757738	2	9/21 42.86%	
CAPN2	Onco	cg06756211	1	12/21 57.14%	
CCND3	Onco	cg04111789	6	9/21 42.86%	
CMTM3	Onco	cg26560414	16	8/21 38.10%	
COL4A1	Onco	cg23008352	13	11/21 52.38%	
CUX1	Onco	cg02856420	7	7/21 33.33%	
CXCL14	Onco	cg04002608	5	9/21 42.86%	
ELTD1	Onco	cg15084543	1	11/21 52.38%	
EPS8L1	Onco	cg08166750	19	8/21 38.10%	
EPS8L1	Onco	cg12020396	19	12/21 57.14%	
EPS8L1	Onco	cg18320766	19	15/21 71.43%	
EPS8L2	Onco	cg08327690	11	10/21 47.62%	
GAD1	Onco	cg04105250	2	9/21 42.86%	
GIPC2	Onco	cg01074657	1	7/21 33.33%	
GRIK2	Onco	cg21635870	6	10/21 47.62%	
HOXA2	Onco	cg02225599	7	12/21 57.14%	
HOXA3	Onco	cg21134232	7	9/21 42.86%	
HOXC10	Onco	cg20402783	12	8/21 38.10%	
KCNQ4	Onco	cg19689322	1	9/21 42.86%	
MAML2	Onco	cg24088496	11	15/21 71.43%	
MFHAS1	Onco	cg27280535	8	7/21 33.33%	
MIR196A1	Onco	cg26608174	17	10/21 47.62%	
NFE2L3	Onco	cg10536999	7	10/21 47.62%	
NRG2	Onco	cg02009088	5	14/21 66.67%	
NRG2	Onco	cg05652757	5	11/21 52.38%	
NRG2	Onco	cg10468961	5	9/21 42.86%	
NRG2	Onco	cg15992535	5	16/21 76.19%	
NRG2	Onco	cg22060611	5	8/21 38.10%	
PACS2	Onco	cg22976533	14	8/21 38.10%	
PARD3	Onco	cg15292765	10	17/21 80.95%	
PARD3	Onco	cg16895672	10	7/21 33.33%	
PCDHB17	Onco	cg21777188	5	9/21 42.86%	
PCDHGA2	Onco	cg18781988	5	7/21 33.33%	

PCDHGA4	Onco	cg21627409	5	9/21	42.86%
PCSK6	Onco	cg07324702	15	9/21	42.86%
PDE4D	Onco	cg03323696	5	8/21	38.10%
PHACTR1	Onco	cg13246235	6	7/21	33.33%
PRDM16	Onco	cg03254465	1	8/21	38.10%
PRDM16	Onco	cg09990962	1	12/21	57.14%
PRDM16	Onco	cg14200569	1	10/21	47.62%
PRDM16	Onco	cg24939838	1	7/21	33.33%
PROCA1	Onco	cg02685896	17	8/21	38.10%
PROCA1	Onco	cg14676825	17	10/21	47.62%
PYY	Onco	cg16789592	17	8/21	38.10%
RPH3A	Onco	cg01573562	12	9/21	42.86%
SALL1	Onco	cg08304084	16	16/21	76.19%
SCMH1	Onco	cg00826203	1	10/21	47.62%
SDS	Onco	cg14120215	12	8/21	38.10%
SHANK2	Onco	cg26591930	11	12/21	57.14%
SIM1	Onco	cg08074534	6	8/21	38.10%
SKAP2	Onco	cg03730533	7	16/21	76.19%
SLC16A12	Onco	cg03616221	10	11/21	52.38%
SLC2A9	Onco	cg25117600	4	13/21	61.90%
SPTBN4	Onco	cg07063351	19	9/21	42.86%
SPTBN4	Onco	cg08871964	19	7/21	33.33%
SRCIN1	Onco	cg15809959	17	8/21	38.10%
TCTEX1D1	Onco	cg09769134	1	7/21	33.33%
TCTEX1D4	Onco	cg03434029	1	8/21	38.10%
TCTEX1D4	Onco	cg11448683	1	8/21	38.10%
TFAP2A	Onco	cg00689580	6	12/21	57.14%
TFAP2A	Onco	cg10129408	6	13/21	61.90%
THBS4	Onco	cg19025234	5	10/21	47.62%
TMEM101	Onco	cg16182148	17	7/21	33.33%
TMEM37	Onco	cg09715353	2	7/21	33.33%
TRIM10	Onco	cg16912957	6	10/21	47.62%
TRIM10	Onco	cg18420781	6	7/21	33.33%
TRPC4AP	Onco	cg01154966	20	7/21	33.33%
VAT1L	Onco	cg04591018	16	9/21	42.86%
VPS37B	Onco	cg16953816	12	17/21	80.95%
WFDC10A	Onco	cg15107861	20	7/21	33.33%
ZBED3	Onco	cg03163459	5	10/21	47.62%
ZC3H12D	Onco	cg09313931	6	8/21	38.10%
ZC3H12D	Onco	cg15559674	6	9/21	42.86%
ZIC4	Onco	cg23189410	3	7/21	33.33%

Suppl Table 3: TCGA tumor identification numbers

Sample	TCGA reference	Sample	TCGA reference
Pap1	TCGA-A4-7286-01A-11D-2137-05	Pap42	TCGA-BQ-7051-01A-12D-1963-05
Pap2	TCGA-A4-7287-01A-11D-2137-05	Pap43	TCGA-BQ-7053-01A-11D-1963-05
Pap3	TCGA-A4-7288-01A-11D-2137-05	Pap44	TCGA-BQ-7055-01A-11D-1963-05
Pap4	TCGA-A4-7583-01A-11D-2137-05	Pap45	TCGA-BQ-7056-01A-11D-1963-05
Pap5	TCGA-A4-7584-01A-11D-2137-05	Pap46	TCGA-BQ-7058-01A-11D-1963-05
Pap6	TCGA-A4-7585-01A-11D-2137-05	Pap47	TCGA-BQ-7059-01A-11D-1963-05
Pap7	TCGA-A4-7732-01A-11D-2137-05	Pap48	TCGA-BQ-7060-01A-11D-1963-05
Pap8	TCGA-A4-7734-01A-11D-2137-05	Pap49	TCGA-BQ-7061-01A-11D-1963-05
Pap9	TCGA-A4-7828-01A-11D-2137-05	Pap50	TCGA-BQ-7062-01A-11D-1963-05
Pap10	TCGA-AL-7173-01A-11D-2137-05	Pap51	TCGA-DW-5560-01A-01D-1590-05
Pap11	TCGA-B1-5398-01A-02D-1590-05	Pap52	TCGA-DW-5561-01A-01D-1590-05
Pap12	TCGA-B1-7332-01A-11D-2137-05	Pap53	TCGA-DW-7834-01A-11D-2137-05
Pap13	TCGA-B9-5155-01A-01D-1590-05	Pap54	TCGA-DW-7836-01A-11D-2137-05
Pap14	TCGA-B9-5156-01A-01D-1590-05	Pap55	TCGA-DW-7837-01A-11D-2137-05
Pap15	TCGA-B9-7268-01A-11D-2137-05	Pap56	TCGA-DW-7838-01A-11D-2137-05
Pap16	TCGA-BQ-5875-01A-11D-1590-05	Pap57	TCGA-DW-7839-01A-11D-2137-05
Pap17	TCGA-BQ-5876-01A-11D-1590-05	Pap58	TCGA-DW-7840-01A-11D-2137-05
Pap18	TCGA-BQ-5877-01A-11D-1590-05	Pap59	TCGA-DW-7841-01A-11D-2137-05
Pap19	TCGA-BQ-5878-01A-11D-1590-05	Pap60	TCGA-DW-7842-01A-11D-2137-05
Pap20	TCGA-BQ-5879-01A-11D-1590-05	Pap61	TCGA-DZ-6131-01A-11D-1963-05
Pap21	TCGA-BQ-5880-01A-11D-1590-05	Pap62	TCGA-DZ-6132-01A-11D-1963-05
Pap22	TCGA-BQ-5881-01A-11D-1590-05	Pap63	TCGA-DZ-6133-01A-11D-1963-05
Pap23	TCGA-BQ-5882-01A-11D-1590-05	Pap64	TCGA-DZ-6134-01A-11D-1963-05
Pap24	TCGA-BQ-5883-01A-11D-1590-05	Pap65	TCGA-DZ-6135-01A-11D-1963-05
Pap25	TCGA-BQ-5884-01A-11D-1590-05	Pap66	TCGA-EV-5901-01A-11D-1590-05
Pap26	TCGA-BQ-5885-01A-11D-1590-05	Pap67	TCGA-EV-5902-01A-11D-1590-05
Pap27	TCGA-BQ-5886-01A-11D-1590-05	Pap68	TCGA-EV-5903-01A-11D-1590-05
Pap28	TCGA-BQ-5887-01A-11D-1963-05	Pap69	TCGA-G7-6789-01A-11D-1963-05
Pap29	TCGA-BQ-5888-01A-11D-1590-05	Pap70	TCGA-G7-6790-01A-11D-1963-05
Pap30	TCGA-BQ-5889-01A-11D-1590-05	Pap71	TCGA-G7-6792-01A-21D-1963-05
Pap31	TCGA-BQ-5890-01A-11D-1590-05	Pap72	TCGA-G7-6793-01A-11D-1963-05
Pap32	TCGA-BQ-5891-01A-11D-1590-05	Pap73	TCGA-G7-6795-01A-11D-1963-05
Pap33	TCGA-BQ-5892-01A-11D-1590-05	Pap74	TCGA-G7-6796-01A-11D-1963-05
Pap34	TCGA-BQ-5893-01A-11D-1590-05	Pap75	TCGA-G7-6797-01A-11D-1963-05
Pap35	TCGA-BQ-5894-01A-11D-1590-05	Pap76	TCGA-GL-6846-01A-11D-1963-05
Pap36	TCGA-BQ-7044-01A-11D-1963-05	Pap77	TCGA-GL-7773-01A-11D-2137-05
Pap37	TCGA-BQ-7045-01A-31D-1963-05	Pap78	TCGA-HE-7128-01A-11D-1963-05
Pap38	TCGA-BQ-7046-01A-11D-1963-05	Pap79	TCGA-HE-7129-01A-11D-1963-05
Pap39	TCGA-BQ-7048-01A-11D-1963-05	Pap80	TCGA-HE-7130-01A-11D-1963-05
Pap40	TCGA-BQ-7049-01A-11D-1963-05	Pap81	TCGA-J7-6720-01A-11D-2137-05
Pap41	TCGA-BQ-7050-01A-11D-1963-05		

Sample	TCGA reference	Sample	TCGA reference
ccRCC1	TCGA-A3-3358-01A-01D-1536-05	ccRCC51	TCGA-BP-4795-01A-02D-1418-05
ccRCC2	TCGA-A3-3367-01A-02D-1418-05	ccRCC52	TCGA-BP-4801-01A-02D-1418-05
ccRCC3	TCGA-A3-3373-01A-02D-1418-05	ccRCC53	TCGA-BP-5168-01A-01D-1418-05
ccRCC4	TCGA-A3-3385-01A-02D-1418-05	ccRCC54	TCGA-BP-5169-01A-01D-1424-05
ccRCC5	TCGA-A3-3387-01A-01D-1536-05	ccRCC55	TCGA-BP-5170-01A-01D-1424-05
ccRCC6	TCGA-AK-3428-01A-02D-1275-05	ccRCC56	TCGA-BP-5182-01A-01D-1424-05
ccRCC7	TCGA-AK-3434-01A-02D-1275-05	ccRCC57	TCGA-BP-5183-01A-01D-1424-05
ccRCC8	TCGA-AK-3445-01A-02D-1275-05	ccRCC58	TCGA-BP-5187-01A-01D-1424-05
ccRCC9	TCGA-B0-4693-01A-01D-1275-05	ccRCC59	TCGA-BP-5190-01A-01D-1424-05
ccRCC10	TCGA-B0-4698-01A-01D-1500-05	ccRCC60	TCGA-BP-5191-01A-01D-1424-05
ccRCC11	TCGA-B0-4701-01A-01D-1275-05	ccRCC61	TCGA-BP-5192-01A-01D-1424-05
ccRCC12	TCGA-B0-4707-01A-01D-1275-05	ccRCC62	TCGA-BP-5194-01A-02D-1424-05
ccRCC13	TCGA-B0-4710-01A-01D-1500-05	ccRCC63	TCGA-BP-5196-01A-01D-1424-05
ccRCC14	TCGA-B0-4821-01A-01D-1500-05	ccRCC64	TCGA-BP-5200-01A-01D-1424-05
ccRCC15	TCGA-B0-4827-01A-02D-1418-05	ccRCC65	TCGA-BP-5202-01A-02D-1424-05
ccRCC16	TCGA-B0-4841-01A-01D-1275-05	ccRCC66	TCGA-CJ-4897-01A-03D-1424-05
ccRCC17	TCGA-B0-4842-01A-02D-1418-05	ccRCC67	TCGA-CJ-5681-01A-11D-1536-05
ccRCC18	TCGA-B0-4845-01A-01D-1275-05	ccRCC68	TCGA-CJ-5682-01A-11D-1536-05
ccRCC19	TCGA-B0-4847-01A-01D-1275-05	ccRCC69	TCGA-CJ-5683-01A-11D-1536-05
ccRCC20	TCGA-B0-4848-01A-01D-1275-05	ccRCC70	TCGA-CJ-5684-01A-11D-1536-05
ccRCC21	TCGA-B0-4849-01A-01D-1275-05	ccRCC71	TCGA-CJ-5686-01A-11D-1670-05
ccRCC22	TCGA-B0-5080-01A-01D-1500-05	ccRCC72	TCGA-CJ-6027-01A-11D-1670-05
ccRCC23	TCGA-B0-5097-01A-01D-1418-05	ccRCC73	TCGA-CJ-6028-01A-11D-1670-05
ccRCC24	TCGA-B0-5099-01A-01D-1418-05	ccRCC74	TCGA-CW-5580-01A-01D-1670-05
ccRCC25	TCGA-B0-5107-01A-01D-1418-05	ccRCC75	TCGA-CW-5588-01A-01D-1536-05
ccRCC26	TCGA-B0-5110-01A-01D-1418-05	ccRCC76	TCGA-CW-5590-01A-01D-1536-05
ccRCC27	TCGA-B0-5113-01A-01D-1418-05	ccRCC77	TCGA-CW-6090-01A-11D-1670-05
ccRCC28	TCGA-B0-5116-01A-02D-1418-05	ccRCC78	TCGA-CW-6097-01A-11D-1670-05
ccRCC29	TCGA-B0-5119-01A-02D-1418-05	ccRCC79	TCGA-CZ-4853-01A-01D-1424-05
ccRCC30	TCGA-B0-5120-01A-01D-1418-05	ccRCC80	TCGA-CZ-4856-01A-02D-1424-05
ccRCC31	TCGA-B0-5121-01A-02D-1418-05	ccRCC81	TCGA-CZ-4859-01A-02D-1424-05
ccRCC32	TCGA-B0-5399-01A-01D-1500-05	ccRCC82	TCGA-CZ-4863-01A-01D-1500-05
ccRCC33	TCGA-B0-5690-01A-11D-1536-05	ccRCC83	TCGA-CZ-4865-01A-02D-1500-05
ccRCC34	TCGA-B0-5692-01A-11D-1536-05	ccRCC84	TCGA-CZ-4866-01A-01D-1500-05
ccRCC35	TCGA-B0-5694-01A-11D-1536-05	ccRCC85	TCGA-CZ-5451-01A-01D-1500-05
ccRCC36	TCGA-B0-5697-01A-11D-1536-05	ccRCC86	TCGA-CZ-5454-01A-01D-1500-05
ccRCC37	TCGA-B0-5698-01A-11D-1670-05	ccRCC87	TCGA-CZ-5455-01A-01D-1500-05
ccRCC38	TCGA-B0-5706-01A-11D-1536-05	ccRCC88	TCGA-CZ-5457-01A-01D-1500-05
ccRCC39	TCGA-B0-5712-01A-11D-1670-05	ccRCC89	TCGA-CZ-5458-01A-01D-1500-05
ccRCC40	TCGA-B0-5713-01A-11D-1670-05	ccRCC90	TCGA-CZ-5462-01A-01D-1500-05
ccRCC41	TCGA-B2-5633-01A-01D-1536-05	ccRCC91	TCGA-CZ-5465-01A-01D-1500-05
ccRCC42	TCGA-B2-5639-01A-01D-1536-05	ccRCC92	TCGA-CZ-5466-01A-01D-1500-05
ccRCC43	TCGA-B4-5378-01A-01D-1500-05	ccRCC93	TCGA-CZ-5467-01A-01D-1500-05
ccRCC44	TCGA-B4-5834-01A-11D-1670-05	ccRCC94	TCGA-CZ-5469-01A-01D-1500-05
ccRCC45	TCGA-B4-5836-01A-11D-1670-05	ccRCC95	TCGA-DV-5569-01A-01D-1536-05

ccRCC46	TCGA-B4-5843-01A-11D-1670-05	ccRCC96	TCGA-DV-5574-01A-01D-1536-05
ccRCC47	TCGA-B8-4621-01A-01D-1500-05	ccRCC97	TCGA-DV-5576-01A-01D-1536-05
ccRCC48	TCGA-B8-4622-01A-02D-1275-05	ccRCC98	TCGA-EU-5905-01A-11D-1670-05
ccRCC49	TCGA-B8-5162-01A-01D-1418-05	ccRCC99	TCGA-EU-5906-01A-11D-1670-05
ccRCC50	TCGA-B8-5552-01B-11D-1670-05	ccRCC100	TCGA-EU-5907-01A-11D-1670-05