SUPPLEMENTAL MATERIALS

Table S1. List of 341 genes screened for mutations using MSK-IMPACT assay.

ABL1	BRCA2	CUL3	FANCC	IDH1	MAPK1	NOTCH4	PRDM1	SDHAF2	TNFAIP3
AKT1	BRD4	DAXX	FAT1	IDH2	MAX	NPM1	PRKAR1A	SDHB	TNFRSF14
AKT2	BRIP1	DCUN1D1	FBXW7	IFNGR1	MCL1	NRAS	PTCH1	SDHC	TOP1
AKT3	BTK	DDR2	FGF19	IGF1	MDC1	NSD1	PTEN	SDHD	TP53
ALK	CARD11	DICER1	FGF3	IGF1R	MDM2	NTRK1	PTPN11	SETD2	TP63
ALOX12B	CASP8	DIS3	FGF4	IGF2	MDM4	NTRK2	PTPRD	SF3B1	TRAF7
APC	CBFB	DNMT1	FGFR1	IKBKE	MED12	NTRK3	PTPRS	SH2D1A	TSC1
AR	CBL	DNMT3A	FGFR2	IKZF1	MEF2B	PAK1	PTPRT	SHQ1	TSC2
ARAF	CCND1	DNMT3B	FGFR3	IL10	MEN1	PAK7	RAC1	SMAD2	TSHR
ARID1A	CCND2	DOT1L	FGFR4	IL7R	MET	PALB2	RAD50	SMAD3	U2AF1
ARID1B	CCND3	E2F3	FH	INPP4A	MITF	PARK2	RAD51	SMAD4	VHL
ARID2	CCNE1	EED	FLCN	INPP4B	MLH1	PARP1	RAD51B	SMARCA4	VTCN1
ARID5B	CD274	EGFL7	FLT1	INSR	MLL	PAX5	RAD51C	SMARCB1	WT1
ASXL1	CD276	EGFR	FLT3	IRF4	MLL2	PBRM1	RAD51D	SMARCD1	XIAP
ASXL2	CD79B	EIF1AX	FLT4	IRS1	MLL3	PDCD1	RAD52	SMO	XPO1
ATM	CDC73	EP300	FOXA1	IRS2	MPL	PDGFRA	RAD54L	SOCS1	YAP1
ATR	CDH1	EPCAM	FOXL2	JAK1	MRE11A	PDGFRB	RAF1	SOX17	YES1
ATRX	CDK12	EPHA3	FOXP1	JAK2	MSH2	PDPK1	RARA	SOX2	
AURKA	CDK4	EPHA5	FUBP1	JAK3	MSH6	PHOX2B	RASA1	SOX9	
AURKB	CDK6	EPHB1	GATA1	JUN	MTOR	PIK3C2G	RB1	SPEN	
AXIN1	CDK8	ERBB2	GATA2	KDM5A	MUTYH	PIK3C3	RBM10	SPOP	
AXIN2	CDKN1A	ERBB3	GATA3	KDM5C	MYC	PIK3CA	RECQL4	SRC	
AXL	CDKN1B	ERBB4	GNA11	KDM6A	MYCL1	PIK3CB	REL	STAG2	
B2M	CDKN2A	ERCC2	GNAQ	KDR	MYCN	PIK3CD	RET	STK11	
BAP1	CDKN2B	ERCC3	GNAS	KEAP1	MYD88	PIK3CG	RFWD2	STK40	
BARD1	CDKN2C	ERCC4	GREM1	KIT	MYOD1	PIK3R1	RHOA	SUFU	
BBC3	CHEK1	ERCC5	GRIN2A	KLF4	NBN	PIK3R2	RICTOR	SUZ12	
BCL2	CHEK2	ERG	GSK3B	KRAS	NCOR1	PIK3R3	RIT1	SYK	
BCL2L1	CIC	ESR1	H3F3C	LATS1	NF1	PIM1	RNF43	TBX3	
BCL2L11	CREBBP	ETV1	HGF	LATS2	NF2	PLK2	ROS1	TERT	
BCL6	CRKL	ETV6	HIST1H1C	LMO1	NFE2L2	PMAIP1	RPS6KA4	TET1	
BCOR	CRLF2	EZH2	HIST1H2BD	MAP2K1	NKX2-1	PMS1	RPS6KB2	TET2	
BLM	CSF1R	FAM123B	HIST1H3B	MAP2K2	NKX3-1	PMS2	RPTOR	TGFBR1	
BMPR1A	CTCF	FAM175A	HNF1A	MAP2K4	NOTCH1	PNRC1	RUNX1	TGFBR2	
BRAF	CTLA4	FAM46C	HRAS	MAP3K1	NOTCH2	POLE	RYBP	TMEM127	
BRCA1	CTNNB1	FANCA	ICOSLG	MAP3K13	NOTCH3	PPP2R1A	SDHA	TMPRSS2	

Table S2. Additional mutations identified in small cell carcinoma of the ovary, hypercalcemic type case 113.

	Genes with high or medium functional impact mutations	Mutation Type	Protein Change	Allele Freq.	Tumor Seq. Reads	Functional Impact	Genes with low functional impact mutations
Case 113	*TP53* *POLE*	Missense Missense	I254N D287E	0.98 0.47	378	Medium Medium	*ABL1, ASXL2, PAK1,ATRX, MED12, KMT2D, PDGFRB*

Table S3. Summary of the SMARCA2 and SMARCA4 immunohistochemistry staining for the non- small cell carcinoma of the ovary, hypercalcemic type cases

Case number	Diagnosis	Primary Site	SMARCA4 IHC	SMARCA2 IHC
1	Clear cell carcinoma	Ovary	Weakly retained	Retained
2	Clear cell carcinoma	Ovary	Weakly retained	Retained
3	Clear cell carcinoma	Ovary	Weakly retained	Retained
4	Clear cell carcinoma	Ovary	Retained	Retained
5	Clear cell carcinoma	Ovary	Retained	Retained
6	Clear cell carcinoma	Ovary	Retained	Retained
7	Clear cell carcinoma	Ovary	Retained	Retained
8	Clear cell carcinoma	Ovary	Retained	Retained
9	Clear cell carcinoma	Ovary	Retained	Retained
10	Clear cell carcinoma	Ovary	Retained	Retained
11	Clear cell carcinoma	Ovary	Retained	Retained
12	Clear cell carcinoma	Ovary	Retained	Retained
13	Clear cell carcinoma	Ovary	Retained	Retained
14	Clear cell carcinoma	Ovary	Retained	Retained
15	Clear cell carcinoma	Ovary	Retained	Retained
16	Clear cell carcinoma	Ovary	Retained	Retained
17	Clear cell carcinoma	Ovary	Retained	Retained
18	Clear cell carcinoma	Ovary	Retained	Loss
19	Clear cell carcinoma	Ovary	Retained	Retained
20	Clear cell carcinoma	Ovary	Loss	Retained
21	Granulosa cell tumor	Ovary	Retained	Retained
22	Granulosa cell tumor	Ovary	Retained	Retained
23	Granulosa cell tumor	Ovary	Retained	Retained
24	Granulosa cell tumor	Ovary	Retained	Retained
25	Granulosa cell tumor	Ovary	Retained	Retained
26	Granulosa cell tumor	Ovary	Retained	Retained
27	Granulosa cell tumor	Ovary	Retained	Retained
28	Granulosa cell tumor	Ovary	Retained	Retained
29	Granulosa cell tumor	Ovary	Retained	Retained
30	Granulosa cell tumor	Ovary	Retained	Retained
31	Melanoma	Ovarian metastasis from upper extremity	Retained	Retained
32	Melanoma	Ovarian metastasis from unknown primary	Loss	Retained
33	Melanoma	Vulva	Retained	Retained
34	Melanoma	Vulva	Retained	Retained
35	Melanoma	Vulva	Retained	Retained
36	Melanoma	Cervix	Retained	Retained
37	Melanoma	Vulva	Retained	Retained
38	Melanoma	Vagina	Weakly retained	Retained
39	Melanoma	Vagina	Retained	Retained
40	Melanoma	Vagina	Retained	Retained
41	Small cell carcinoma	Lung	Retained	Retained
42	Small cell carcinoma	Lung	Retained	Retained
43	Small cell carcinoma	Lung	Retained	Retained
44	Small cell carcinoma	Lung	Retained	Retained
45	Small cell carcinoma	Lung	Retained	Retained
46	Small cell carcinoma	Lung	Retained	Retained
47	Small cell carcinoma	Lung	Retained	Retained
48	Small cell carcinoma	Lung	Retained	Retained
49	Small cell carcinoma	Lung	Retained	Retained
50	Small cell carcinoma	Lung	Retained	Retained

Supplemental titles and legends of figures

Figure S1. Sequence analysis of *SMARCA4* small cell carcinoma of the ovary, hypercalcemic type case 114. Top panel: next-generation sequence coverage demonstrating identified variants. Bottom panel: validation by Sanger sequencing.

Figure S2. Immunohistochemistry for SMARCA2 and SMARCA4 in fresh-frozen, paraffin-embedded, non-small cell carcinoma of the ovary, hypercalcemic type cases: small cell lung carcinoma (SCLC), granulosa cell tumor (GCT) of the ovary, ovarian clear cell carcinoma (OCCC) and melanomas (Mel).

Figure S1

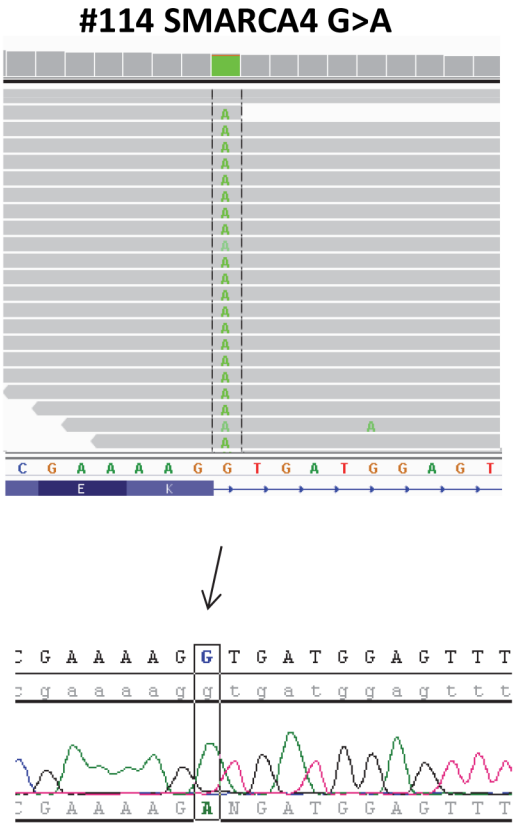
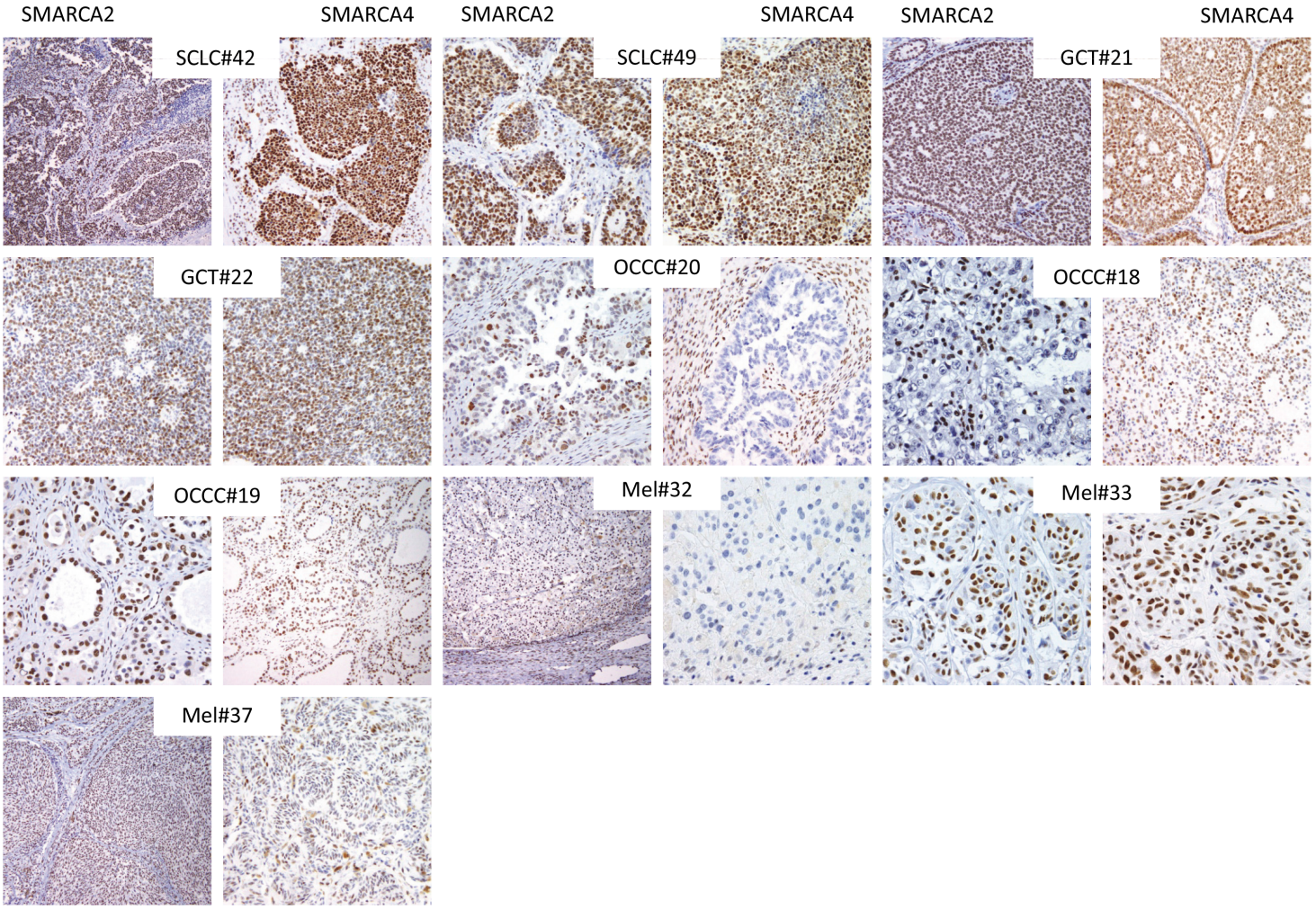

#114 SMARCA4 G>A
C G A A A A G G T G A T G G A G T
E K
C G A A A A G G T G A T G G A G T T T
C G A A A A G A N G A T G G A G T T T

Figure S2


SMARCA2
SMARCA4
SCLC#42
SMARCA2
SMARCA4
SCLC#49
SMARCA2
SMARCA4
GCT#21
GCT#22
OCCC#20
OCCC#18
OCCC#19
Mel#32
Mel#33
Mel#37