

Supplementary Table S1 – Mutation profile in patient's tumor and PDX

					Patient's tumor	PDX
	Gene	Effect	Variant codon	Variant protein	VAF (%)	VAF (%)
Shared Alterations	<i>PCDH11X</i>	Missense	c.112G>T	p.Val38Phe	100.00	100.00
	<i>SUSD4</i>	Missense	c.838C>G	p.Leu280Val	89.53	61.36
	<i>ADGRL2</i>	Missense	c.4000G>A	p.Glu1334Lys	87.39	79.69
	<i>ADAMTS2</i>	LoF	c.3544C>T	p.Arg1182Ter	81.25	75.81
	<i>ELOVL7</i>	Missense	c.512C>T	p.Thr171Ile	76.97	68.70
	<i>TECPR2</i>	Missense	c.1235C>T	p.Ser412Leu	69.23	64.71
	<i>SMC1A</i>	Missense	c.3119A>G	p.Glu1040Gly	67.42	43.62
	<i>AAMP</i>	LoF	c.122-1G>A	n.a.	62.96	67.50
	<i>RBM20</i>	Missense	c.419C>T	p.Pro140Leu	62.01	63.09
	<i>CARD9</i>	Missense	c.1399G>T	p.Ala467Ser	60.64	63.27
	<i>CEACAM8</i>	Missense	c.215C>G	p.Thr72Arg	59.18	52.21
	<i>SPTBN5</i>	Missense	c.1984G>A	p.Val662Met	57.24	51.97
	<i>IDH3B</i>	Missense	c.395T>C	p.Leu132Pro	55.65	48.62
	<i>PEX1</i>	Missense	c.548G>A	p.Arg183Gln	55.24	39.42
	<i>PXN</i>	Missense	c.1736G>A	p.Arg579Lys	54.91	59.68
	<i>PTPRZ1</i>	Missense	c.4492A>G	p.Met1498Val	54.55	49.14
	<i>PLXND1</i>	Missense	c.677G>T	p.Ser226Ile	54.47	57.80
	<i>KIF12</i>	LoF	c.1141delC	p.Gln381Serfs*52	54.21	29.27
	<i>ELAC2</i>	Missense	c.1009G>A	p.Val337Met	54.11	48.48
	<i>USP16</i>	Missense	c.1982A>G	p.Gln661Arg	53.85	53.64
	<i>CACNA1D</i>	Missense	c.6079G>A	p.Glu2027Lys	53.81	52.71

	<i>GIT2</i>	Missense	c.2122T>G	p.Tyr708Asp	53.78	50.34
	<i>TSHZ2</i>	Missense	c.2848G>A	p.Gly950Ser	53.69	42.94
	<i>ITGA11</i>	Missense	c.2141G>A	p.Arg714Gln	53.23	53.37
	<i>ITPKA</i>	Missense	c.434G>A	p.Ser145Asn	53.19	39.64
	<i>TIMELESS</i>	Missense	c.2722G>A	p.Asp908Asn	52.83	54.32
	<i>LAMA1</i>	Missense	c.4555G>C	p.Gly1519Arg	52.73	54.55
	<i>USF3</i>	Missense	c.6055G>A	p.Gly2019Ser	52.63	44.44
	<i>PCNX3</i>	Missense	c.4705G>A	p.Val1569Met	52.52	52.53
	<i>ZNF827</i>	Missense	c.2539T>G	p.Cys847Gly	50.98	41.86
	<i>SEC16A</i>	Missense	c.2717A>G	p.Asn906Ser	50.48	54.46
	<i>SHROOM3</i>	Missense	c.1609G>A	p.Asp537Asn	50.46	58.97
	<i>MAG</i>	Missense	c.1025C>T	p.Thr342Met	49.77	48.04
	<i>NOS1</i>	Missense	c.2066C>A	p.Ser689Tyr	49.39	49.42
	<i>ANKRD44</i>	Missense	c.2869G>A	p.Val957Ile	48.82	58.06
	<i>KRT72</i>	Missense	c.1433C>A	p.Ala478Glu	48.78	47.14
	<i>GPR137</i>	Missense	c.749C>T	p.Thr250Ile	48.56	43.84
	<i>UBOX5</i>	Missense	c.1357C>G	p.Gln453Glu.	48.18	42.71
	<i>FAM83G</i>	Missense	c.634G>A	p.Val212Ile.	47.78	43.04
	<i>GCN1</i>	Missense	c.5269A>G	p.Ile1757Val	46.56	40.30
	<i>ALPK2</i>	LoF	c.2111T>G	p.Leu704Ter	46.35	36.17
	<i>NDUFS3</i>	Missense	c.79C>T	p.Pro27Ser	46.20	39.04
	<i>MROH8</i>	Missense	c.451C>G	p.Gln151Glu	45.98	55.68
	<i>LILRB1</i>	Missense	c.1633G>C	p.Gly545Arg	45.90	34.03
	<i>PLCB1</i>	Missense	c.3619A>G	p.Ile1207Val	44.44	52.81
	<i>MINAR1</i>	Missense	c.1492T>A	p.Tyr498Asn	43.75	36.09
	<i>KMT5C</i>	Missense	c.1373G>A	p.Gly458Asp	43.09	37.14
	<i>KRT85</i>	Missense	c.220G>A	p.Gly74Ser	42.70	44.09

	<i>ENTREP1</i>	Missense	c.1222C>T	p.His408Tyr	41.46	41.74
	<i>BAG1</i>	Missense	c.340G>A	p.Glu114Lys	41.04	43.66
	<i>NUDT8</i>	Missense	c.633G>C	p.Glu211Asp	41.04	44.62
	<i>TASOR</i>	Missense	c.3527A>C	p.His1176Pro	38.54	49.41
	<i>IKZF1</i>	LoF	c.234A>T	p.*78Cysext*67	37.61	26.73
	<i>PDIA5</i>	Missense	c.302T>G	p.Leu101Arg	37.50	56.98
	<i>UBXN6</i>	Missense	c.1033G>A	p.Asp345Asn	33.79	35.71
	<i>VPS26C</i>	Missense	c.707A>G	p.Gln236Arg	32.10	49.02
	<i>SMARCA4</i>	Missense	c.4433C>T	p.Pro1478Leu	31.73	36.67
	<i>ODF3L2</i>	Missense	c.127G>A	p.Gly43Ser	31.58	38.46
	<i>DTX3</i>	Missense	c.73G>C	p.Val25Leu	31.16	41.67
	<i>TBX21</i>	Missense	c.1241G>C	p.Gly414Ala	30.70	30.65
	<i>DYNC1H1</i>	Missense	c.4964A>C	p.Lys1655Thr	28.81	40.22
	<i>H2AC21</i>	Missense	c.260C>T	p.Ala87Val	22.67	28.02
	<i>TSC2</i>	LoF	c.3490G>T	p.Ala1164Ser	21.95	6.12
	<i>TULP3</i>	Missense	c.232C>T	p.His78Tyr	21.64	32.61
	<i>SLC22A18</i>	Missense	c.946A>G	p.Ile316Val	20.99	43.33
	<i>SARS2</i>	Missense	c.127C>T	p.Leu43Phe	17.13	7.86
	<i>NCOA1</i>	LoF	c.3814C>T	p.Pro1272Ser	16.67	19.04
	<i>MAP7</i>	Missense	c.2186G>C	p.Gly729Ala	16.50	5.29
	<i>SCN9A</i>	Missense	c.4994A>G	p.Asn1665Ser	16.20	36.53
	<i>WSCD1</i>	Missense	c.482C>T	p.Ala161Val	14.81	81.61
	<i>CYP4B1</i>	Missense	c.425C>T	p.Thr142Ile	14.29	6.62
	<i>OPRL1</i>	Missense	c.922G>A	p.Gly308Ser	13.68	9.30
	<i>FGFR4</i>	Missense	c.760G>A	p.Gly254Arg	13.63	23.52
	<i>PIGS</i>	Missense	c.181C>A	p.Leu61Ile	13.17	17.77
	<i>TEX37</i>	Missense	c.148G>A	p.Asp50Asn	12.73	6.59

	<i>PRDM13</i>	Missense	c.1505C>T	p.Pro502Leu	11.26	17.33
	<i>OPRM1</i>	Missense	c.1321_1338del	p.Gly441_Ser446del	10.32	3.53
	<i>USP17L22</i>	Missense	c.875C>A	p.Ala292Asp	3.61	3.31
Patient exclusive alterations	<i>TAGAP</i>	Missense	c.1924C>T	p.His642Tyr	93.90	-
	<i>KIF18A</i>	Missense	c.1487A>G	p.Lys496Arg	80.85	-
	<i>MPI</i>	Missense	c.1000T>C	p.Tyr334His	56.15	-
	<i>BPHL</i>	Missense	c.394_396delAAG	p.Lys132del	54.29	-
	<i>PDCL</i>	Missense	c.678T>G	p.Ser226Arg	52.83	-
	<i>EDRF1</i>	Missense	c.1276G>A	p.Ala426Thr	51.08	-
	<i>PTPRQ</i>	Missense	c.5565T>G	p.Phe1855Leu	49.44	-
	<i>PCM1</i>	Missense	c.5666A>G	p.Lys1889Arg	45.00	-
	<i>DOK2</i>	Missense	c.235C>T	p.Arg79Trp	41.94	-
	<i>MUC16</i>	Missense	c.10513G>A	p.Val3505Met	37.90	-
	<i>KMT2C</i>	Missense	c.4384G>T	p.Gly1462Cys	37.72	-
	<i>KRT10</i>	Missense	c.1683_1684ins(90)	p.Gly565_His566ins30	25.72	-
	<i>RECQL4</i>	Missense	c.1592C>A	p.Ser531Tyr	16.00	-
	<i>CRB1</i>	Missense	c.1147T>G	p.Cys383Gly	9.38	-
	<i>OR3A1</i>	Missense	c.274A>G	p.Lys92Glu.	9.06	-
	<i>MUC12</i>	Missense	c.13094C>G	p.Thr4365Arg	8.78	-
	<i>DDIT3</i>	Missense	c.368A>C	p.Lys123Thr	8.57	-
	<i>CFAP54</i>	Missense	c.5867A>C	p.His1956Pro	8.33	-
	<i>GOLGA6L2</i>	Missense	c.1508_1509ins(18)	p.Glu502_Gln503ins6	8.14	-
	<i>COG1</i>	Missense	c.2623C>G	p.Leu875Val	7.27	-
	<i>MUC6</i>	Missense	c.4472A>C	p.Lys1491Thr	7.14	-
	<i>BMP1</i>	Missense	c.1843A>C	p.Lys615Gln	6.93	-
	<i>BCL2L10</i>	Missense	c.398A>C	p.Asp133Ala	6.59	-
	<i>MUC16</i>	Missense	c.40620G>C	p.Lys13540Asn	6.58	-

	<i>WDR53</i>	Missense	c.202T>G	p.Tyr68Asp	6.38	-
	<i>PRB4</i>	Missense	c.158C>A	p.Pro53His	5.08	-
	<i>STEAP1</i>	Missense	c.536G>C	p.Ser179Thr	5.06	-
	<i>MUC12</i>	Missense	c.9845C>G	p.Thr3282Arg	3.57	-
	<i>RP1L1</i>	Missense	c.4154T>A	p.Leu1385Gln	1.70	-
	<i>KCNJ12</i>	Missense	c.816T>G	p.His272Gln	1.14	-
PDX exclusive alterations	<i>RFPL1</i>	Missense	c.466C>T	p.Arg156Trp.	-	29.23
	<i>ZNF618</i>	Missense	c.917C>G	p.Pro306Arg	-	19.77
	<i>NOS1AP</i>	Missense	c.516C>A	p.Ser172Arg	-	14.29
	<i>SFMBT2</i>	LoF	c.1809-1G>T	n.a.	-	12.05
	<i>PPP1CC</i>	Missense	c.680T>C	p.Phe227Ser	-	9.60
	<i>OPRK1</i>	Missense	c.1060C>T	p.Arg354Trp	-	7.62
	<i>RAG2</i>	Missense	c.460G>T	p.Val154Phe	-	6.90
	<i>KCNH2</i>	Missense	c.2023A>T	p.Thr675Ser	-	5.36
	<i>LAMB1</i>	Missense	c.2326G>T	p.Asp776Tyr	-	2.53

LoF = Loss of function; n.a. = not available