

Position (POS) identification is based on 1-indexed. Insertions and deletions are categorized as short (1 bp), medium (2–5 bp), and long (greater than 6 bp). Position identification is based on 1-indexed. Insertions and deletions are categorized as short (1 bp), medium (2–5 bp), and long (greater than 6 bp). Panel-wide mutations are selected arbitrarily from COSMIC to ensure that important genes have a wide variety of variants, but are not necessarily clinically relevant in cancers. These mutations are intended to troubleshoot capture and variant-calling applications. Clinically relevant mutations represent actionable mutations that occur in solid tumors based on review of the scientific literature.

GENE	MUTATION DESCRIPTION	MUTATION ID	CHROM (hg38)	POS (hg38)	CHROM (hg19)	POS (hg19)	REFERENCE SEQUENCE	ALTERNATE SEQUENCE	VARIANT TYPE	VARIANT CATEGORY
ARID1A	Q1401*	COSM51417	chr1	26774428	chr1	27100919	C	T	Clinically relevant	Single-base substitution
ARID1A	M1564Hfs*8	COSM211769	chr1	26774915	chr1	27101406	C	CC	Clinically relevant	Short Insertion
MPL	W515L	COSM18918	chr1	43349338	chr1	43815009	G	T	Clinically relevant	Single-base substitution
NRAS	Q61H	COSM586	chr1	114713907	chr1	115256528	T	G	Clinically relevant	Single-base substitution
NRAS	G12D	COSM564	chr1	114716126	chr1	115258747	C	T	Clinically relevant	Single-base substitution
RIT1	M90I	COSM357927	chr1	155904470	chr1	155874261	C	T	Clinically relevant	Single-base substitution
DDR2	I638F	COSM7363943	chr1	162775707	chr1	162745497	A	T	Clinically relevant	Single-base substitution
ABL2	P986Hfs*4	COSM2095020	chr1	179108313	chr1	179077448	GG	G	Clinically relevant	Short Deletion
MYCN	P44L	COSM35624	chr2	15942195	chr2	16082317	C	T	Clinically relevant	Single-base substitution
ALK	P1543S	COSM2941442	chr2	29193460	chr2	29416326	G	A	Clinically relevant	Single-base substitution
ALK	R1275Q	COSM28056	chr2	29209798	chr2	29432664	C	T	Clinically relevant	Single-base substitution
ALK	F1174L	COSM28055	chr2	29220829	chr2	29443695	G	T	Clinically relevant	Single-base substitution
ALK	G1128A	COSM98475	chr2	29222584	chr2	29445450	C	G	Clinically relevant	Single-base substitution
IDH1	R132C	COSM28747	chr2	208248389	chr2	209113113	G	A	Clinically relevant	Single-base substitution
VHL	F148Lfs*11	COSM14410	chr3	10146612	chr3	10188296	AT	A	Clinically relevant	Short Deletion
VHL	R161*	COSM17612	chr3	10149804	chr3	10191488	C	T	Clinically relevant	Single-base substitution
MLH1	R498fs	COSM5895322	chr3	37028864	chr3	37070355	GG	G	Clinically relevant	Short Deletion
MYD88	L265P	COSM85940	chr3	38141150	chr3	38182641	T	C	Clinically relevant	Single-base substitution
CTNNB1	T41A	COSM5664	chr3	41224633	chr3	41266124	A	G	Clinically relevant	Single-base substitution
SETD2	S2382Lfs*29	COSM3068849	chr3	47042655	chr3	47084145	AG	A	Clinically relevant	Short Deletion
SETD2	R1407Gfs*5	COSM3069036	chr3	47120416	chr3	47161906	CT	C	Clinically relevant	Short Deletion
SETD2	S2031fs*33	COSM1161887	chr3	47124027	chr3	47165517	TGA	T	Clinically relevant	Medium Deletion
RHOA	Y42C	COSM2849892	chr3	49375465	chr3	49412898	T	C	Clinically relevant	Single-base substitution
BAP1	W196*	COSM51977	chr3	52406900	chr3	52440916	C	T	Clinically relevant	Single-base substitution
PBRM1	I279Yfs*4	COSM52863	chr3	52644767	chr3	52678783	AT	A	Clinically relevant	Short Deletion
FOXL2	C134W	COSM33661	chr3	138946321	chr3	138665163	G	C	Clinically relevant	Single-base substitution
ATR	I774Yfs*5	COSM214499	chr3	142555906	chr3	142274748	TT	T	Clinically relevant	Short Deletion
PIK3CA	G106_R108del	COSM13475	chr3	179199140	chr3	178916928	AGGCAACCGT	A	Clinically relevant	Long Deletion
PIK3CA	N345K	COSM754	chr3	179203765	chr3	178921553	T	A	Clinically relevant	Single-base substitution
PIK3CA	E545K	COSM763	chr3	179218303	chr3	178936091	G	A	Clinically relevant	Single-base substitution
PIK3CA	H1047R	COSM775	chr3	179234297	chr3	178952085	A	G	Clinically relevant	Single-base substitution
FGFR3	S249C	COSM715	chr4	1801841	chr4	1803568	C	G	Clinically relevant	Single-base substitution
FGFR3	Y375C	COSM718	chr4	1804372	chr4	1806099	A	G	Clinically relevant	Single-base substitution
FGFR3	K652E	COSM719	chr4	1806162	chr4	1807889	A	G	Clinically relevant	Single-base substitution
PDGFRA	S566_E571delinsR	COSM30546	chr4	54274884	chr4	55141051	GCCCAGATGGACATGA	G	Clinically relevant	Long Deletion
PDGFRA	N659K	COSM22414	chr4	54277981	chr4	55144148	C	G	Clinically relevant	Single-base substitution
PDGFRA	D842V	COSM736	chr4	54285926	chr4	55152093	A	T	Clinically relevant	Single-base substitution
KIT	L576P	COSM1290	chr4	54727495	chr4	55593661	T	C	Clinically relevant	Single-base substitution
KIT	K642E	COSM1304	chr4	54728055	chr4	55594221	A	G	Clinically relevant	Single-base substitution
KIT	D816V	COSM1314	chr4	54733155	chr4	55599321	A	T	Clinically relevant	Single-base substitution
FBXW7	R465C	COSM22932	chr4	152328233	chr4	153249385	G	A	Clinically relevant	Single-base substitution

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GENE	MUTATION DESCRIPTION	MUTATION ID	CHROM (hg38)	POS (hg38)	CHROM (hg19)	POS (hg19)	REFERENCE SEQUENCE	ALTERNATE SEQUENCE	VARIANT TYPE	VARIANT CATEGORY
TERT	C228G	tert_c228g	chr5	1295229	chr5	1295344	G	A	Clinically relevant	Single-base substitution
APC	R213*	COSM13134	chr5	112780895	chr5	112116592	C	T	Clinically relevant	Single-base substitution
APC	A1002Gfs*6	COSM5748894	chr5	112838598	chr5	112174295	G	GG	Clinically relevant	Short Insertion
APC	E1309Dfs*4	COSM13113	chr5	112839514	chr5	112175211	TAAAAG	T	Clinically relevant	Medium Deletion
APC	R1450*	COSM13127	chr5	112839942	chr5	112175639	C	T	Clinically relevant	Single-base substitution
APC	R2714C	COSM2991126	chr5	112843734	chr5	112179431	C	T	Clinically relevant	Single-base substitution
NPM1	W288fs*12	COSM17559	chr5	171410539	chr5	170837543	C	CTCTG	Clinically relevant	Medium Insertion
ROS1	G2032R	COSM1651690	chr6	117317184	chr6	117638347	C	T	Clinically relevant	Single-base substitution
ESR1	D538G	COSM94250	chr6	152098791	chr6	152419926	A	G	Clinically relevant	Single-base substitution
EGFR	L718Q	COSM6503269	chr7	55174012	chr7	55241705	T	A	Clinically relevant	Single-base substitution
EGFR	E746_A750delELREA	COSM6225	chr7	55174772	chr7	55242465	GGAATTAAGAGAAGCA	G	Clinically relevant	Long Deletion
EGFR	T790M	COSM6240	chr7	55181378	chr7	55249071	C	T	Clinically relevant	Single-base substitution
EGFR	L858R	COSM6224	chr7	55191822	chr7	55259515	T	G	Clinically relevant	Single-base substitution
MET	exon_14_skip	met_exon14_skip	chr7	116771990	chr7	116412044	G	A	Clinically relevant	Single-base substitution
MET	d1246n	COSM5015794	chr7	116783353	chr7	116423407	G	A	Clinically relevant	Single-base substitution
SMO	D473H	COSM34198	chr7	129209348	chr7	128849189	G	C	Clinically relevant	Single-base substitution
BRAF	p.V600E	COSM476	chr7	140753336	chr7	140453136	A	T	Clinically relevant	Single-base substitution
EZH2	Y641F	COSM37028	chr7	148811635	chr7	148508727	T	A	Clinically relevant	Single-base substitution
RHEB	Y35N	COSM485065	chr7	151490964	chr7	151188050	A	T	Clinically relevant	Single-base substitution
FGFR1	K656E	COSM35673	chr8	38414790	chr8	38272308	T	C	Clinically relevant	Single-base substitution
FGFR1	N546K	COSM19176	chr8	38417331	chr8	38274849	G	T	Clinically relevant	Single-base substitution
JAK2	V617F	COSM12600	chr9	5073770	chr9	5073770	G	T	Clinically relevant	Single-base substitution
GNAQ	Q209P	COSM28758	chr9	77794572	chr9	80409488	T	G	Clinically relevant	Single-base substitution
GNAQ	T96S	COSM404628	chr9	77922196	chr9	80537112	T	A	Clinically relevant	Single-base substitution
ABL1	F317V	COSM211607	chr9	130872901	chr9	133748288	T	G	Clinically relevant	Single-base substitution
TSC1	Q794	COSM753312	chr9	132902616	chr9	135778003	G	A	Clinically relevant	Single-base substitution
NOTCH1	P2514Rfs*4	COSM12774	chr9	136496196	chr9	139390648	CAG	C	Clinically relevant	Medium Deletion
NOTCH1	L1600Pfs*10	COSM5751249	chr9	136504893	chr9	139399345	G	GG	Clinically relevant	Short Insertion
GATA3	P408fs	COSM166059	chr10	8073911	chr10	8115874	C	CG	Clinically relevant	Short Insertion
RET	M918T	COSM965	chr10	43121968	chr10	43617416	T	C	Clinically relevant	Single-base substitution
PTEN	R130G	COSM5033	chr10	87933148	chr10	89692905	G	A	Clinically relevant	Single-base substitution
PTEN	D268Gfs*30	COSM5012	chr10	87958018	chr10	89717775	A	AA	Clinically relevant	Short Insertion
PTEN	N323Kfs*2	COSM4990	chr10	87961060	chr10	89720817	A	AA	Clinically relevant	Short Insertion
FGFR2	K659E	COSM36909	chr10	121488002	chr10	123247516	T	C	Clinically relevant	Single-base substitution
FGFR2	N549K	COSM36912	chr10	121498520	chr10	123258034	A	T	Clinically relevant	Single-base substitution
FGFR2	C382R	COSM36906	chr10	121515260	chr10	123274774	A	G	Clinically relevant	Single-base substitution
FGFR2	S252W	COSM36903	chr10	121520163	chr10	123279677	G	C	Clinically relevant	Single-base substitution
HRAS	G12V	COSM483	chr11	534288	chr11	534288	C	A	Clinically relevant	Single-base substitution
CCND1	T286I	COSM931395	chr11	69651251	chr11	69466019	C	T	Clinically relevant	Single-base substitution
ATM	S214Pfs*16	COSM1350740	chr11	108244089	chr11	108114816	CT	C	Clinically relevant	Short Deletion
KRAS	K117N	COSM19940	chr12	25225713	chr12	25378647	T	G	Clinically relevant	Single-base substitution
KRAS	Q61H	COSM554	chr12	25227341	chr12	25380275	T	G	Clinically relevant	Single-base substitution
KRAS	G13D	COSM532	chr12	25245347	chr12	25398281	C	T	Clinically relevant	Single-base substitution
ERBB3	v104m	COSM20710	chr12	56085070	chr12	56478854	G	A	Clinically relevant	Single-base substitution

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CDK4	R24C	COSM1677139	chr12	57751648	chr12	58145431	G	A	Clinically relevant	Single-base substitution
PTPN11	E76K	COSM13000	chr12	112450406	chr12	112888210	G	A	Clinically relevant	Single-base substitution
PTPN11	G503R	COSM14259	chr12	112489083	chr12	112926887	G	A	Clinically relevant	Single-base substitution
HNF1A	P289fs	COSM1476243	chr12	120994313	chr12	121432116	G	GC	Clinically relevant	Short Insertion
CDX2	V306Cfs*2	COSM1366182	chr13	27963146	chr13	28537283	CC	C	Clinically relevant	Short Deletion
FLT3	D835Y	COSM783	chr13	28018505	chr13	28592642	C	A	Clinically relevant	Single-base substitution
BRCA2	N1784Tfs*7	COSM18607	chr13	32339699	chr13	32913836	CA	C	Clinically relevant	Short Deletion
BRCA2	T3033Lfs*29	COSM1366491	chr13	32379885	chr13	32954022	CA	C	Clinically relevant	Short Deletion
FOXA1	R219S	COSM3738526	chr14	37592129	chr14	38061334	G	T	Clinically relevant	Single-base substitution
AKT1	Q79K	COSM159008	chr14	104776711	chr14	105243048	G	T	Clinically relevant	Single-base substitution
AKT1	E17K	COSM33765	chr14	104780214	chr14	105246551	C	T	Clinically relevant	Single-base substitution
MAP2K1	K57N	COSM1235478	chr15	66435117	chr15	66727455	G	T	Clinically relevant	Single-base substitution
IDH2	R140Q	COSM41590	chr15	90088702	chr15	90631934	C	T	Clinically relevant	Single-base substitution
CDH1	Q23*	COSM19503	chr16	68738315	chr16	68772218	C	T	Clinically relevant	Single-base substitution
CDH1	A634V	COSM19822	chr16	68822190	chr16	68856093	C	T	Clinically relevant	Single-base substitution
CDH1	R732Q	COSM972800	chr16	68828204	chr16	68862107	G	A	Clinically relevant	Single-base substitution
TP53	R342Efs*3	COSM18597	chr17	7670685	chr17	7574003	GG	G	Clinically relevant	Short Deletion
TP53	R273H	COSM10660	chr17	7673802	chr17	7577120	C	T	Clinically relevant	Single-base substitution
TP53	G245C	COSM11081	chr17	7674230	chr17	7577548	C	A	Clinically relevant	Single-base substitution
TP53	R175H	COSM10648	chr17	7675088	chr17	7578406	C	T	Clinically relevant	Single-base substitution
TP53	L26Pfs*11	COSM45386	chr17	7676382	chr17	7579700	CAGAACGTTGTTTCAGGAAGT	C	Clinically relevant	Long Deletion
NF1	I679Dfs*21	COSM24504	chr17	31226465	chr17	29553483	C	CC	Clinically relevant	Short Insertion
NF1	F1247Ifs*18	COSM436320	chr17	31235638	chr17	29562656	CTGTT	C	Clinically relevant	Medium Deletion
NF1	Y2285Tfs*5	COSM39161	chr17	31338733	chr17	29665751	CACTT	C	Clinically relevant	Medium Deletion
CDK12	W719*	COSM118018	chr17	39492798	chr17	37649051	G	A	Clinically relevant	Single-base substitution
CDK12	E928fs27*	COSM6965693	chr17	39515745	chr17	37671998	A	AATACACAAAGAT	Clinically relevant	Long Insertion
ERBB2	L755S	COSM14060	chr17	39723967	chr17	37880220	T	C	Clinically relevant	Single-base substitution
ERBB2	A775_G776insYVMA	COSM20959	chr17	39724730	chr17	37880983	C	CATACGTGATGGC	Clinically relevant	Long Insertion
ERBB2	V842I	COSM14065	chr17	39725079	chr17	37881332	G	A	Clinically relevant	Single-base substitution
BRCA1	R1443*	COSM979730	chr17	43082434	chr17	41234451	G	A	Clinically relevant	Single-base substitution
BRCA1	K654Sfs*47	COSM219054	chr17	43093569	chr17	41245586	CT	C	Clinically relevant	Short Deletion
BRCA1	E23Vfs*17	COSM35893	chr17	43124027	chr17	41276044	ACT	A	Clinically relevant	Medium Deletion
SPOP	F133V	COSM219965	chr17	49619064	chr17	47696426	A	C	Clinically relevant	Single-base substitution
SMAD4	D52Rfs*2	COSM14091	chr18	51047198	chr18	48573568	A	AA	Clinically relevant	Short Insertion
SMAD4	R361H	COSM14122	chr18	51065549	chr18	48591919	G	A	Clinically relevant	Single-base substitution
KEAP1	G333C	COSM1193323	chr19	10491905	chr19	10602581	C	A	Clinically relevant	Single-base substitution
GNAS	R201C	COSM27887	chr20	58909365	chr20	57484420	C	T	Clinically relevant	Single-base substitution
MAPK1	E322K	COSM461148	chr22	21772875	chr22	22127164	C	T	Clinically relevant	Single-base substitution
NF2	L14Qfs*34	COSM22312	chr22	29604033	chr22	30000022	GCT	G	Clinically relevant	Medium Deletion
NF2	P275Tfs*4	COSM6951489	chr22	29665000	chr22	30060989	A	AA	Clinically relevant	Short Insertion
NF2	R341*	COSM21990	chr22	29671847	chr22	30067836	C	T	Clinically relevant	Single-base substitution
NF2	E445Gfs*9	COSM22271	chr22	29673477	chr22	30069466	CAGAG	C	Clinically relevant	Medium Deletion
KDM6A	K1097Sfs*6	COSM7211707	chrX	45083464	chrX	44942709	AAGTT	A	Clinically relevant	Medium Deletion
ARAF	S214C	COSM5044705	chrX	47566722	chrX	47426121	C	G	Clinically relevant	Single-base substitution
KDM5C	D1407Tfs*5	COSM1161909	chrX	53193534	chrX	53222716	TC	T	Clinically relevant	Short Deletion
AR	W742C	COSM5944171	chrX	67717530	chrX	66937372	G	C	Clinically relevant	Single-base substitution
AR	T878A	COSM236693	chrX	67723710	chrX	66943552	A	G	Clinically relevant	Single-base substitution



Panel-wide Mutations

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ALK	COSM7408659	chr2	29196823	chr2	29419689	C	T	Panel-wide	Single-base substitution
ALK	COSM6924954	chr2	29197575	chr2	29420441	C	T	Panel-wide	Single-base substitution
ALK	COSM6939221	chr2	29207181	chr2	29430047	T	C	Panel-wide	Single-base substitution
ALK	COSM28617	chr2	29214027	chr2	29436893	C	T	Panel-wide	Single-base substitution
ALK	COSM6949625	chr2	29223444	chr2	29446310	G	A	Panel-wide	Single-base substitution
ALK	COSM6948461	chr2	29227060	chr2	29449926	C	T	Panel-wide	Single-base substitution
ALK	COSM6908629	chr2	29227669	chr2	29450535	C	T	Panel-wide	Single-base substitution
ALK	COSM7347365	chr2	29228926	chr2	29451792	CACCCCTCCGAA	C	Panel-wide	Long Deletion
ALK	COSM148825	chr2	29232401	chr2	29455267	A	G	Panel-wide	Single-base substitution
ALK	COSM2941501	chr2	29233586	chr2	29456452	AC	A	Panel-wide	Short Deletion
ALK	COSM50296	chr2	29239766	chr2	29462632	C	T	Panel-wide	Single-base substitution
ALK	COSM6940013	chr2	29251115	chr2	29473981	C	T	Panel-wide	Single-base substitution
ALK	COSM5019540	chr2	29275101	chr2	29497967	G	A	Panel-wide	Single-base substitution
ALK	COSM6926372	chr2	29275466	chr2	29498332	TC	T	Panel-wide	Short Deletion
ALK	COSM6963778	chr2	29296995	chr2	29519861	C	G	Panel-wide	Single-base substitution
ALK	COSM6922292	chr2	29318345	chr2	29541211	TG	T	Panel-wide	Short Deletion
ALK	ALK_exon_7_indel	chr2	29320797	chr2	29543663	T	TA	Panel-wide	Short Insertion
ALK	COSM6947853	chr2	29328379	chr2	29551245	G	T	Panel-wide	Single-base substitution
ALK	COSM1172867	chr2	29383830	chr2	29606696	C	T	Panel-wide	Single-base substitution
ALK	COSM6598514	chr2	29532024	chr2	29754890	C	T	Panel-wide	Single-base substitution
ALK	COSM1236664	chr2	29694870	chr2	29917736	C	T	Panel-wide	Single-base substitution
ALK	ALK_exon_2_substitution	chr2	29717663	chr2	29940529	A	G	Panel-wide	Single-base substitution
ALK	ALK_exon_1_indel	chr2	29920118	chr2	30142984	CCTTGGCGAATCCACC	CG	Panel-wide	Complex
CTNNB1	COSM4117539	chr3	41224075	chr3	41265566	A	G	Panel-wide	Single-base substitution
CTNNB1	COSM6845286	chr3	41225063	chr3	41266554	TCATCCCA	T	Panel-wide	Long Deletion
CTNNB1	CTNNB1_exon_7_indel	chr3	41225731	chr3	41267222	CTAAAATGGCAGT	CA	Panel-wide	Complex
CTNNB1	COSM5608170	chr3	41227274	chr3	41268765	AAACT	A	Panel-wide	Medium Deletion
CTNNB1	COSM6853630	chr3	41233407	chr3	41274898	G	GGGA	Panel-wide	Medium Insertion
CTNNB1	COSM5576265	chr3	41234157	chr3	41275648	C	T	Panel-wide	Single-base substitution
CTNNB1	COSM6939570	chr3	41235755	chr3	41277246	GTTGTACC	G	Panel-wide	Long Deletion
CTNNB1	COSM6853546	chr3	41236462	chr3	41277953	TCTGACAGGTTA	T	Panel-wide	Long Deletion
CTNNB1	COSM1044608	chr3	41238068	chr3	41279559	G	A	Panel-wide	Single-base substitution
CTNNB1	COSM1485172	chr3	41239208	chr3	41280699	G	A	Panel-wide	Single-base substitution
PIK3CA	COSM3205605	chr3	179199822	chr3	178917610	G	A	Panel-wide	Single-base substitution
PIK3CA	COSM6931303	chr3	179201476	chr3	178919264	A	T	Panel-wide	Single-base substitution
PIK3CA	COSM21450	chr3	179204576	chr3	178922364	G	T	Panel-wide	Single-base substitution
PIK3CA	COSM5613085	chr3	179209674	chr3	178927462	GT	G	Panel-wide	Short Deletion
PIK3CA	COSM6940128	chr3	179210290	chr3	178928078	AGAAGATTTGCTGAACCTATTGGTGTACT	A	Panel-wide	Long Deletion
PIK3CA	COSM1716809	chr3	179219228	chr3	178937016	C	T	Panel-wide	Single-base substitution
PIK3CA	COSM5751700	chr3	179219582	chr3	178937370	G	GT	Panel-wide	Short Insertion
PIK3CA	COSM250052	chr3	179219950	chr3	178937738	T	C	Panel-wide	Single-base substitution
PIK3CA	COSM6911769	chr3	179221134	chr3	178938922	GAGA	G	Panel-wide	Medium Deletion
PIK3CA	COSM6475729	chr3	179224123	chr3	178941911	T	C	Panel-wide	Single-base substitution
PIK3CA	COSM6981846	chr3	179224740	chr3	178942528	C	A	Panel-wide	Single-base substitution
PIK3CA	COSM1041507	chr3	179225997	chr3	178943785	C	T	Panel-wide	Single-base substitution
PIK3CA	COSM39499	chr3	179229374	chr3	178947162	G	C	Panel-wide	Single-base substitution
PIK3CA	COSM769	chr3	179230039	chr3	178947827	G	T	Panel-wide	Single-base substitution
PIK3CA	COSM6475740	chr3	179230373	chr3	178948161	A	G	Panel-wide	Single-base substitution



Panel-wide Mutations

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GENE	MUTATION ID	CHROM (hg38)	POS (hg38)	CHROM (hg19)	POS (hg19)	REFERENCE SEQUENCE	ALTERNATE SEQUENCE	VARIANT TYPE	VARIANT CATEGORY
PIK3CA	COSM9111593	chr3	179240022	chr3	178957810	T	C	Panel-wide	Single-base substitution
FGFR3	COSM6968758	chr4	1794007	chr4	1795734	T	A	Panel-wide	Single-base substitution
FGFR3	COSM4616014	chr4	1799410	chr4	1801137	TG	T	Panel-wide	Short Deletion
FGFR3	COSM9213245	chr4	1799784	chr4	1801511	C	T	Panel-wide	Single-base substitution
FGFR3	COSM6942045	chr4	1801370	chr4	1803097	C	T	Panel-wide	Single-base substitution
FGFR3	COSM7342301	chr4	1802941	chr4	1804668	G	A	Panel-wide	Single-base substitution
FGFR3	COSM4992106	chr4	1803754	chr4	1805481	TGAGGACGC	T	Panel-wide	Long Deletion
FGFR3	COSM13248	chr4	1804823	chr4	1806550	G	GGTAACA	Panel-wide	Long Insertion
FGFR3	COSM6919387	chr4	1805402	chr4	1807129	T	C	Panel-wide	Single-base substitution
FGFR3	COSM7448276	chr4	1806568	chr4	1808295	T	TTGGGAGATCTTGAC	Panel-wide	Long Insertion
FGFR3	FGFR3_exon_18_indel	chr4	1807221	chr4	1808948	C	CGA	Panel-wide	Medium Insertion
PDGFRA	COSM4383728	chr4	54258785	chr4	55124952	C	T	Panel-wide	Single-base substitution
PDGFRA	COSM7345286	chr4	54261354	chr4	55127521	C	CA	Panel-wide	Short Insertion
PDGFRA	PDGFRA_exon_4_substitution	chr4	54263911	chr4	55130078	T	G	Panel-wide	Single-base substitution
PDGFRA	COSM6906234	chr4	54264999	chr4	55131166	GT	G	Panel-wide	Short Deletion
PDGFRA	COSM6964190	chr4	54267667	chr4	55133834	GCTGAAAAACAATCTGACT	G	Panel-wide	Long Deletion
PDGFRA	COSM9358924	chr4	54270721	chr4	55136888	A	AAGCT	Panel-wide	Medium Insertion
PDGFRA	COSM6938810	chr4	54272497	chr4	55138664	G	A	Panel-wide	Single-base substitution
PDGFRA	COSM2155032	chr4	54273575	chr4	55139742	A	G	Panel-wide	Single-base substitution
PDGFRA	PDGFRA_exon_13_substitution	chr4	54277410	chr4	55143577	G	T	Panel-wide	Single-base substitution
PDGFRA	COSM6958142	chr4	54278422	chr4	55144589	A	C	Panel-wide	Single-base substitution
PDGFRA	COSM4383732	chr4	54280374	chr4	55146541	A	G	Panel-wide	Single-base substitution
PDGFRA	COSM3301372	chr4	54285479	chr4	55151646	CA	C	Panel-wide	Short Deletion
PDGFRA	COSM7346029	chr4	54287473	chr4	55153640	AC	A	Panel-wide	Short Deletion
PDGFRA	PDGFRA_exon_21_sbs	chr4	54289074	chr4	55155241	G	C	Panel-wide	Single-base substitution
PDGFRA	COSM6956086	chr4	54290548	chr4	55156715	GAC	G	Panel-wide	Medium Deletion
PDGFRA	COSM7346028	chr4	54295233	chr4	55161400	CAT	C	Panel-wide	Medium Deletion
KIT	COSM6951399	chr4	54658073	chr4	55524240	TC	T	Panel-wide	Short Deletion
KIT	COSM7345631	chr4	54695772	chr4	55561938	TTTG	T	Panel-wide	Medium Deletion
KIT	COSM7345632	chr4	54698515	chr4	55564681	AG	A	Panel-wide	Short Deletion
KIT	COSM6909371	chr4	54699686	chr4	55565852	G	T	Panel-wide	Single-base substitution
KIT	COSM3301432	chr4	54703760	chr4	55569926	G	A	Panel-wide	Single-base substitution
KIT	COSM9500507	chr4	54707133	chr4	55573299	A	G	Panel-wide	Single-base substitution
KIT	COSM6005552	chr4	54709427	chr4	55575593	C	T	Panel-wide	Single-base substitution
KIT	COSM6008883	chr4	54723605	chr4	55589771	A	ACGATTTT	Panel-wide	Long Insertion
KIT	COSM53306	chr4	54726012	chr4	55592178	C	CTGCCCT	Panel-wide	Long Insertion
KIT	COSM1305	chr4	54729451	chr4	55595617	TATAAGA	T	Panel-wide	Long Deletion
KIT	COSM1306	chr4	54731324	chr4	55597490	CCAG	C	Panel-wide	Medium Deletion
KIT	COSM28578	chr4	54731967	chr4	55598133	CA	C	Panel-wide	Short Deletion
KIT	KIT_exon_18_substitution	chr4	54736599	chr4	55602765	G	A	Panel-wide	Single-base substitution
KIT	COSM6945539	chr4	54737225	chr4	55603391	C	A	Panel-wide	Single-base substitution
KIT	COSM6965292	chr4	54738465	chr4	55604631	CAG	C	Panel-wide	Medium Deletion
APC	COSM6963650	chr5	112755023	chr5	112090720	AAGGTATC	A	Panel-wide	Long Deletion
APC	COSM6853815	chr5	112766390	chr5	112102087	AT	A	Panel-wide	Short Deletion
APC	COSM9113053	chr5	112767380	chr5	112103077	G	GGAGAAAGA	Panel-wide	Long Insertion
APC	COSM6854236	chr5	112775710	chr5	112111407	AATAG	A	Panel-wide	Medium Deletion
APC	COSM6976104	chr5	112792468	chr5	112128165	AAATCG	A	Panel-wide	Medium Deletion
APC	COSM6984704	chr5	112801284	chr5	112136981	ATC	A	Panel-wide	Medium Deletion
APC	COSM5010340	chr5	112815593	chr5	112151290	G	GATGTTT	Panel-wide	Long Insertion
APC	COSM25155	chr5	112819174	chr5	112154871	C	CG	Panel-wide	Short Insertion
APC	COSM6971752	chr5	112821942	chr5	112157639	AATGAAACTTTCATTTG	A	Panel-wide	Long Deletion
APC	COSM4169285	chr5	112827121	chr5	112162818	CATTGCAGAATT	C	Panel-wide	Long Deletion
APC	COSM1169625	chr5	112827937	chr5	112163634	ATGCTC	A	Panel-wide	Medium Deletion



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GENE	MUTATION ID	CHROM (hg38)	POS (hg38)	CHROM (hg19)	POS (hg19)	REFERENCE SEQUENCE	ALTERNATE SEQUENCE	VARIANT TYPE	VARIANT CATEGORY
APC	COSM4169180	chr5	112828863	chr5	112164560	CGAGT	C	Panel-wide	Medium Deletion
APC	COSM6854200	chr5	112835141	chr5	112170838	T	TA	Panel-wide	Short Insertion
ROS1	COSM249317	chr6	117288728	chr6	117609891	C	T	Panel-wide	Single-base substitution
ROS1	COSM150168	chr6	117301021	chr6	117622184	G	C	Panel-wide	Single-base substitution
ROS1	COSM5576148	chr6	117308866	chr6	117630029	G	T	Panel-wide	Single-base substitution
ROS1	COSM6921151	chr6	117310082	chr6	117631245	ATACAT	A	Panel-wide	Medium Deletion
ROS1	COSM6950684	chr6	117311094	chr6	117632257	C	A	Panel-wide	Single-base substitution
ROS1	COSM6950893	chr6	117318188	chr6	117639351	C	T	Panel-wide	Single-base substitution
ROS1	COSM6967149	chr6	117319975	chr6	117641138	G	GA	Panel-wide	Short Insertion
ROS1	COSM9513198	chr6	117321391	chr6	117642554	C	A	Panel-wide	Single-base substitution
ROS1	COSM6941244	chr6	117324337	chr6	117645500	G	A	Panel-wide	Single-base substitution
ROS1	COSM6959063	chr6	117326294	chr6	117647457	TCTGAA	T	Panel-wide	Medium Deletion
ROS1	COSM6965416	chr6	117329359	chr6	117650522	C	A	Panel-wide	Single-base substitution
ROS1	COSM9125580	chr6	117337327	chr6	117658490	T	C	Panel-wide	Single-base substitution
ROS1	COSM6968834	chr6	117341465	chr6	117662628	ATTCACITTTGCTTAGAGGAGT	A	Panel-wide	Long Deletion
ROS1	COSM9225153	chr6	117342404	chr6	117663567	AT	A	Panel-wide	Short Deletion
ROS1	COSM6969339	chr6	117344154	chr6	117665317	C	T	Panel-wide	Single-base substitution
ROS1	COSM4992412	chr6	117353036	chr6	117674199	C	T	Panel-wide	Single-base substitution
ROS1	COSM6978532	chr6	117356904	chr6	117678067	CAATACAAGCGACTATAGAGAAAA	C	Panel-wide	Long Deletion
ROS1	COSM6984106	chr6	117357806	chr6	117678969	TA	T	Panel-wide	Short Deletion
ROS1	COSM9499684	chr6	117359964	chr6	117681127	C	CAA	Panel-wide	Medium Insertion
ROS1	COSM5977598	chr6	117360400	chr6	117681563	CCT	C	Panel-wide	Medium Deletion
ROS1	COSM5576297	chr6	117362635	chr6	117683798	CT	C	Panel-wide	Short Deletion
ROS1	COSM6951463	chr6	117365132	chr6	117686295	G	C	Panel-wide	Single-base substitution
ROS1	COSM6954777	chr6	117366533	chr6	117686796	G	A	Panel-wide	Single-base substitution
ROS1	COSM95208	chr6	117366216	chr6	117687379	T	C	Panel-wide	Single-base substitution
ROS1	COSM4992418	chr6	117379095	chr6	117700258	C	T	Panel-wide	Single-base substitution
ROS1	COSM7342701	chr6	117383402	chr6	117704565	G	T	Panel-wide	Single-base substitution
ROS1	COSM9277478	chr6	117385755	chr6	117706918	G	C	Panel-wide	Single-base substitution
ROS1	COSM6977455	chr6	117386990	chr6	117708153	G	A	Panel-wide	Single-base substitution
ROS1	COSM7409277	chr6	117387804	chr6	117708967	AG	A	Panel-wide	Short Deletion
ROS1	COSM6912204	chr6	117389389	chr6	117710552	G	C	Panel-wide	Single-base substitution
ROS1	COSM6940064	chr6	117393245	chr6	117714408	AT	A	Panel-wide	Short Deletion
ROS1	COSM6912725	chr6	117394313	chr6	117715476	T	A	Panel-wide	Single-base substitution
ROS1	COSM6968764	chr6	117394705	chr6	117715868	C	T	Panel-wide	Single-base substitution
ROS1	COSM6921289	chr6	117396196	chr6	117717359	G	C	Panel-wide	Single-base substitution
ROS1	COSM6916198	chr6	117396979	chr6	117718142	AT	A	Panel-wide	Short Deletion
ROS1	COSM5019315	chr6	117403216	chr6	117724379	C	T	Panel-wide	Single-base substitution
ROS1	ROS1_exon_6_substitution	chr6	117404415	chr6	117725578	T	C	Panel-wide	Single-base substitution
ROS1	COSM6952051	chr6	117409597	chr6	117730760	C	C	Panel-wide	Single-base substitution
ROS1	COSM4604501	chr6	117416316	chr6	117737479	C	T	Panel-wide	Single-base substitution
ROS1	COSM6355496	chr6	117418506	chr6	117739669	C	T	Panel-wide	Single-base substitution
ROS1	COSM6910632	chr6	117425580	chr6	117746743	T	C	Panel-wide	Single-base substitution
EGFR	COSM6937748	chr7	55019353	chr7	55087046	G	A	Panel-wide	Single-base substitution
EGFR	EGFR_exon_2_indel	chr7	55142292	chr7	55209985	AAGGCACG	AC	Panel-wide	Complex
EGFR	COSM9233361	chr7	55143416	chr7	55211109	G	T	Panel-wide	Single-base substitution
EGFR	EGFR_exon_4_substitution	chr7	55146655	chr7	55214348	C	A	Panel-wide	Single-base substitution
EGFR	COSM7002280	chr7	55151308	chr7	55219001	C	G	Panel-wide	Single-base substitution
EGFR	COSM4166393	chr7	55152627	chr7	55220320	C	T	Panel-wide	Single-base substitution
EGFR	COSM9494233	chr7	55154103	chr7	55221796	CCCCGAGGG	C	Panel-wide	Long Deletion
EGFR	COSM6962235	chr7	55155837	chr7	55223530	TGTG	T	Panel-wide	Medium Deletion
EGFR	COSM6970489	chr7	55156802	chr7	55224495	G	A	Panel-wide	Single-base substitution
EGFR	COSM7002279	chr7	55157735	chr7	55225428	G	A	Panel-wide	Single-base substitution
EGFR	COSM236670	chr7	55160316	chr7	55228009	C	A	Panel-wide	Single-base substitution
EGFR	COSM7343128	chr7	55161538	chr7	55229231	AG	A	Panel-wide	Short Deletion



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EGFR	COSM5530405	chr7	55163734	chr7	55231427	G	A	Panel-wide	Single-base substitution
EGFR	COSM6196864	chr7	55165374	chr7	55233067	TG	T	Panel-wide	Short Deletion
EGFR	COSM9110951	chr7	55170527	chr7	55238220	GCCT	G	Panel-wide	Medium Deletion
EGFR	EGFR_exon_16_substitution	chr7	55171181	chr7	55238874	T	C	Panel-wide	Single-base substitution
EGFR	COSM6909028	chr7	55173048	chr7	55240741	TG	T	Panel-wide	Short Deletion
EGFR	COSM6976991	chr7	55192784	chr7	55260477	G	A	Panel-wide	Single-base substitution
EGFR	COSM6932208	chr7	55198789	chr7	55266482	C	T	Panel-wide	Single-base substitution
EGFR	COSM5762244	chr7	55200351	chr7	55268044	C	T	Panel-wide	Single-base substitution
EGFR	COSM3762773	chr7	55201223	chr7	55268916	C	T	Panel-wide	Single-base substitution
EGFR	COSM6925302	chr7	55201765	chr7	55269458	T	C	Panel-wide	Single-base substitution
EGFR	COSM7410173	chr7	55202527	chr7	55270220	G	A	Panel-wide	Single-base substitution
EGFR	COSM9496259	chr7	55205525	chr7	55273218	G	A	Panel-wide	Single-base substitution
MET	COSM6912457	chr7	116699692	chr7	116339746	CTTCT	C	Panel-wide	Medium Deletion
MET	COSM5945634	chr7	116731717	chr7	116371771	G	A	Panel-wide	Single-base substitution
MET	COSM6927005	chr7	116739966	chr7	116380020	C	T	Panel-wide	Single-base substitution
MET	COSM6975700	chr7	116740889	chr7	116380943	ATTTCAGTCTGCAG	A	Panel-wide	Long Deletion
MET	MET_exon_6_indel	chr7	116755455	chr7	116395509	CTAGAGTTCTCCTGGAAATGAGAG	CG	Panel-wide	Complex
MET	COSM3632213	chr7	116757727	chr7	116397781	G	A	Panel-wide	Single-base substitution
MET	COSM5977594	chr7	116758487	chr7	116398541	AC	A	Panel-wide	Short Deletion
MET	COSM6937367	chr7	116759394	chr7	116399448	TG	T	Panel-wide	Short Deletion
MET	COSM6957131	chr7	116763127	chr7	116403181	C	CA	Panel-wide	Short Insertion
MET	COSM5047343	chr7	116769789	chr7	116409843	G	C	Panel-wide	Single-base substitution
MET	COSM5609378	chr7	116771624	chr7	116411678	C	T	Panel-wide	Single-base substitution
MET	COSM6984036	chr7	116774940	chr7	116414994	GACATGTCCCCA	G	Panel-wide	Long Deletion
MET	COSM6438054	chr7	116777440	chr7	116417494	A	T	Panel-wide	Single-base substitution
MET	MET_exon_17_indel	chr7	116778811	chr7	116418865	A	ATT	Panel-wide	Medium Insertion
MET	COSM1579075	chr7	116782056	chr7	116422110	CA	C	Panel-wide	Short Deletion
MET	COSM7345743	chr7	116796002	chr7	116436056	CATGTGAACGCTACTT	C	Panel-wide	Long Deletion
GNAQ	COSM6342235	chr9	77721491	chr9	80336407	TG	T	Panel-wide	Short Deletion
GNAQ	COSM28414	chr9	77728594	chr9	80343510	ATAACCGAGGAGTT	A	Panel-wide	Long Deletion
GNAQ	COSM52975	chr9	77797577	chr9	80412493	C	T	Panel-wide	Single-base substitution
GNAQ	COSM7347398	chr9	77815756	chr9	80430672	TAATTGTGCATGAG	T	Panel-wide	Long Deletion
GNAQ	COSM9113869	chr9	78031128	chr9	80646044	GGCGTCCCGCTTGTCCCTGCCGA	G	Panel-wide	Long Deletion
RET	COSM7341796	chr10	43077301	chr10	43572749	TTGC	T	Panel-wide	Medium Deletion
RET	COSM4989947	chr10	43100532	chr10	43595980	C	T	Panel-wide	Single-base substitution
RET	COSM7351211	chr10	43102447	chr10	43597895	CCTT	C	Panel-wide	Medium Deletion
RET	COSM4989957	chr10	43105037	chr10	43600485	CGAGCTGGT	C	Panel-wide	Long Deletion
RET	COSM6947065	chr10	43106469	chr10	43601917	G	A	Panel-wide	Single-base substitution
RET	COSM9277606	chr10	43109132	chr10	43604580	C	T	Panel-wide	Single-base substitution
RET	COSM9277092	chr10	43111413	chr10	43606861	GCAGACCTCTAGGCAGGCCAGGCC	G	Panel-wide	Long Deletion
RET	COSM1237681	chr10	43112100	chr10	43607548	TGTGGCCGAG	T	Panel-wide	Long Deletion
RET	COSM9358963	chr10	43112867	chr10	43608315	T	TTCC	Panel-wide	Medium Insertion
RET	COSM984	chr10	43113625	chr10	43609073	ACTGCTTCCCTGAGGAGGAGAAGTCTT	A	Panel-wide	Long Deletion
RET	RET_exon_13_substitution	chr10	43118395	chr10	43613843	G	A	Panel-wide	Single-base substitution
RET	COSM6945831	chr10	43119624	chr10	43615072	G	T	Panel-wide	Single-base substitution
RET	COSM962	chr10	43120163	chr10	43615611	GAGATGTTATGA	G	Panel-wide	Long Deletion
RET	COSM6929334	chr10	43123710	chr10	43619158	AG	A	Panel-wide	Short Deletion
RET	COSM3997965	chr10	43124887	chr10	43620335	C	T	Panel-wide	Single-base substitution
RET	COSM6914657	chr10	43126707	chr10	43622155	G	A	Panel-wide	Single-base substitution
RET	COSM7449721	chr10	43128223	chr10	43623671	TGCTTTCACCTCAGCG	T	Panel-wide	Long Deletion
PTEN	COSM7350864	chr10	87864536	chr10	89624293	T	TCGGGAGC	Panel-wide	Long Insertion
PTEN	COSM5346960	chr10	87894056	chr10	89653813	T	TATGGGATTG	Panel-wide	Long Insertion
PTEN	COSM5882	chr10	87925549	chr10	89685306	A	ATAT	Panel-wide	Medium Insertion
PTEN	COSM1173605	chr10	87931069	chr10	89690826	C	CTA	Panel-wide	Medium Insertion
PTEN	COSM7347202	chr10	87952180	chr10	89711937	T	TCACCGA	Panel-wide	Long Insertion



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PTEN	COSM6942496	chr10	87965289	N/A	N/A	GAAGCTGTACTTCACAA	G	Panel-wide	Long Deletion
ATM	COSM1315819	chr11	108227624	chr11	108098351	CATGAGTCTAGTACTTAATG	C	Panel-wide	Long Deletion
ATM	COSM6978979	chr11	108229315	chr11	108100042	CAAACAGAA	C	Panel-wide	Long Deletion
ATM	COSM758337	chr11	108235814	chr11	108106541	TATCTC	T	Panel-wide	Medium Deletion
ATM	COSM3733253	chr11	108244952	chr11	108115679	AAG	A	Panel-wide	Medium Deletion
ATM	COSM1235448	chr11	108247062	chr11	108117789	T	TA	Panel-wide	Short Insertion
ATM	COSM1235427	chr11	108249045	chr11	108119772	GGGAAGTA	G	Panel-wide	Long Deletion
ATM	ATM_exon_10_indel	chr11	108250727	chr11	108121454	CAAA	CT	Panel-wide	Complex
ATM	COSM6935895	chr11	108251945	chr11	108122672	AAAGGAATC	A	Panel-wide	Long Deletion
ATM	COSM6958308	chr11	108252838	chr11	108123565	GGA	G	Panel-wide	Medium Deletion
ATM	ATM_exon_13_indel	chr11	108253991	chr11	108124718	CTGTCTTCTGGGATTATCAGAA	CG	Panel-wide	Complex
ATM	ATM_exon_14_indel	chr11	108256298	chr11	108127025	T	TAAAAA	Panel-wide	Medium Insertion
ATM	COSM6986880	chr11	108257598	chr11	108128325	TGTACCA	T	Panel-wide	Long Deletion
ATM	COSM9179264	chr11	108259065	chr11	108129792	GTAAAAGTTTAGTAAGTA	G	Panel-wide	Long Deletion
ATM	COSM6856770	chr11	108267334	chr11	108138061	GTACCA	G	Panel-wide	Medium Deletion
ATM	COSM6906886	chr11	108268563	chr11	108139290	TTGATTCTAGCACGC	T	Panel-wide	Long Deletion
ATM	COSM7345428	chr11	108271283	chr11	108142010	ATGTT	A	Panel-wide	Medium Deletion
ATM	COSM7345432	chr11	108272761	chr11	108143488	GGA	G	Panel-wide	Medium Deletion
ATM	COSM1235411	chr11	108279519	chr11	108150246	TC	T	Panel-wide	Short Deletion
ATM	COSM9493731	chr11	108281162	chr11	108151889	GA	G	Panel-wide	Short Deletion
ATM	COSM758341	chr11	108282852	chr11	108153579	ACTACACAAATATTGAGG	A	Panel-wide	Long Deletion
ATM	COSM21638	chr11	108284389	chr11	108155116	CAGAGACA	C	Panel-wide	Long Deletion
ATM	COSM6958310	chr11	108287644	chr11	108158371	GTTA	G	Panel-wide	Medium Deletion
ATM	COSM6971320	chr11	108289010	chr11	108159737	TC	T	Panel-wide	Short Deletion
ATM	COSM6956709	chr11	108289695	chr11	108160422	CTGTT	C	Panel-wide	Medium Deletion
ATM	COSM9312366	chr11	108292758	chr11	108163485	C	CATAA	Panel-wide	Medium Insertion
ATM	COSM9358682	chr11	108293339	chr11	108164066	G	GGATA	Panel-wide	Medium Insertion
ATM	ATM_exon_32_indel	chr11	108294983	chr11	108165710	TGAAGGACTAAAGGATCTCGAAGA	TT	Panel-wide	Complex
ATM	COSM4745906	chr11	108297369	chr11	108168096	AAAAG	A	Panel-wide	Medium Deletion
ATM	COSM22533	chr11	108299754	chr11	108170481	TTTCTC	T	Panel-wide	Medium Deletion
ATM	COSM22526	chr11	108301670	chr11	108172397	GTTACTGT	G	Panel-wide	Long Deletion
ATM	COSM7347299	chr11	108302857	chr11	108173584	TAGA	T	Panel-wide	Medium Deletion
ATM	COSM9358193	chr11	108304685	chr11	108175412	AC	A	Panel-wide	Short Deletion
ATM	COSM1315822	chr11	108307969	chr11	108178696	TGAG	T	Panel-wide	Medium Deletion
ATM	COSM5967541	chr11	108310286	chr11	108181013	TAAGAAAAGTATGGATGATCAAG	T	Panel-wide	Long Deletion
ATM	COSM21325	chr11	108312465	chr11	108183192	A	C	Panel-wide	Single-base substitution
ATM	COSM1235422	chr11	108316060	chr11	108186787	TA	T	Panel-wide	Short Deletion
ATM	ATM_exon_43_indel	chr11	108317458	chr11	108188185	TAGAAGAA	TAGTC	Panel-wide	Complex
ATM	COSM6911065	chr11	108319958	chr11	108190685	GA	G	Panel-wide	Short Deletion
ATM	COSM7343670	chr11	108321330	chr11	108192057	G	A	Panel-wide	Single-base substitution
ATM	COSM21644	chr11	108325443	chr11	108196170	GAA	G	Panel-wide	Medium Deletion
ATM	COSM6933908	chr11	108326152	chr11	108196879	CA	C	Panel-wide	Short Deletion
ATM	COSM758343	chr11	108327657	chr11	108198384	CTAAAACT	C	Panel-wide	Long Deletion
ATM	COSM6977654	chr11	108329028	chr11	108199755	AAG	A	Panel-wide	Medium Deletion
ATM	COSM6986181	chr11	108330215	chr11	108200942	TACAC	T	Panel-wide	Medium Deletion
ATM	COSM6853938	chr11	108331534	chr11	108202261	G	GA	Panel-wide	Short Insertion
ATM	COSM6936524	chr11	108331960	chr11	108202687	T	TA	Panel-wide	Short Insertion
ATM	COSM4745907	chr11	108332850	chr11	108203577	CTTATA	C	Panel-wide	Medium Deletion
ATM	COSM6853895	chr11	108333892	chr11	108204619	TA	T	Panel-wide	Short Deletion
ATM	COSM6986871	chr11	108334992	chr11	108205719	AAATCTGGTGACTATAC	A	Panel-wide	Long Deletion
ATM	COSM200673	chr11	108335854	chr11	108206581	G	A	Panel-wide	Single-base substitution
ATM	ATM_exon_57_indel	chr11	108343269	chr11	108213996	AACTGTCCCAATTGGTG	A	Panel-wide	Long Deletion
ATM	COSM6854263	chr11	108345767	chr11	108216494	G	GT	Panel-wide	Short Insertion
ATM	COSM22484	chr11	108347306	chr11	108218033	GACA	G	Panel-wide	Medium Deletion
ATM	COSM6933059	chr11	108353803	chr11	108224530	TGAGACAGTCTCTTTA	T	Panel-wide	Long Deletion



Panel-wide Mutations

Position (POS) identification is based on 1-indexed. Insertions and deletions are categorized as short (1 bp), medium (2–5 bp), and long (greater than 6 bp). Position identification is based on 1-indexed. Insertions and deletions are categorized as short (1 bp), medium (2–5 bp), and long (greater than 6 bp). Panel-wide mutations are selected arbitrarily from COSMIC to ensure that important genes have a wide variety of variants, but are not necessarily clinically relevant in cancers. These mutations are intended to troubleshoot capture and variant-calling applications. Clinically relevant mutations represent actionable mutations that occur in solid tumors based on review of the scientific literature.

GENE	MUTATION ID	CHROM (hg38)	POS (hg38)	CHROM (hg19)	POS (hg19)	REFERENCE SEQUENCE	ALTERNATE SEQUENCE	VARIANT TYPE	VARIANT CATEGORY
ATM	COSM6930780	chr11	108354854	chr11	108225581	ACT	A	Panel-wide	Medium Deletion
ATM	COSM3733420	chr11	108365362	chr11	108236089	GTCT	G	Panel-wide	Medium Deletion
AKT1	COSM5044338	chr14	104770406	chr14	105236743	A	T	Panel-wide	Single-base substitution
AKT1	COSM6966503	chr14	104770769	chr14	105237106	T	A	Panel-wide	Single-base substitution
AKT1	COSM5020215	chr14	104772446	chr14	105238783	G	A	Panel-wide	Single-base substitution
AKT1	COSM7345039	chr14	104772908	chr14	105239245	G	GC	Panel-wide	Short Insertion
AKT1	COSM9358172	chr14	104773279	chr14	105239616	CA	C	Panel-wide	Short Deletion
AKT1	COSM6924152	chr14	104773963	chr14	105240300	G	C	Panel-wide	Single-base substitution
AKT1	COSM9102250	chr14	104775003	chr14	105241340	C	T	Panel-wide	Single-base substitution
AKT1	COSM6986817	chr14	104775763	chr14	105242100	G	C	Panel-wide	Single-base substitution
AKT1	COSM5751911	chr14	104792618	chr14	105258955	T	TC	Panel-wide	Short Insertion
TP53	COSM6503572	chr17	7669655	chr17	7572973	C	CT	Panel-wide	Short Insertion
TP53	COSM9312241	chr17	7673240	chr17	7576558	G	A	Panel-wide	Single-base substitution
ERBB2	COSM5414789	chr17	39700281	chr17	37856534	C	T	Panel-wide	Single-base substitution
ERBB2	COSM5967125	chr17	39707050	chr17	37863303	TGCTCCGCCACCTCTACCAG	T	Panel-wide	Long Deletion
ERBB2	COSM7345562	chr17	39708492	chr17	37864745	TCC	T	Panel-wide	Medium Deletion
ERBB2	COSM9102609	chr17	39709385	chr17	37865638	G	A	Panel-wide	Single-base substitution
ERBB2	COSM6913537	chr17	39709822	chr17	37866075	G	A	Panel-wide	Single-base substitution
ERBB2	COSM7345564	chr17	39710383	chr17	37866636	GC	G	Panel-wide	Short Deletion
ERBB2	COSM94225	chr17	39711955	chr17	37868208	C	A	Panel-wide	Single-base substitution
ERBB2	COSM6961097	chr17	39712401	chr17	37868654	CAAG	C	Panel-wide	Medium Deletion
ERBB2	COSM9110847	chr17	39715294	chr17	37871547	C	A	Panel-wide	Single-base substitution
ERBB2	COSM9494227	chr17	39715878	chr17	37872131	GCT	G	Panel-wide	Medium Deletion
ERBB2	COSM7343981	chr17	39716431	chr17	37872684	G	T	Panel-wide	Single-base substitution
ERBB2	COSM6974323	chr17	39717434	chr17	37873687	GATGAGGAGGGCGCATGCCAGCCTTGCCCC	G	Panel-wide	Long Deletion
ERBB2	COSM7345566	chr17	39719798	chr17	37876051	TG	T	Panel-wide	Short Deletion
ERBB2	COSM6973838	chr17	39723542	chr17	37879795	TGGA	T	Panel-wide	Medium Deletion
ERBB2	COSM7345570	chr17	39725766	chr17	37882019	CG	C	Panel-wide	Short Deletion
ERBB2	COSM6865894	chr17	39726611	chr17	37882864	TG	T	Panel-wide	Short Deletion
ERBB2	COSM6865896	chr17	39727352	chr17	37883605	TCTCCACTGGCACCCCTCCGAAGGGGCTGG	T	Panel-wide	Long Deletion
ERBB2	COSM9494270	chr17	39727873	chr17	37884126	C	CAGAG	Panel-wide	Medium Insertion
GNA11	GNA11_exon_2_indel	chr19	3110238	chr19	3110236	A	ATT	Panel-wide	Medium Insertion
GNA11	COSM6939602	chr19	3113334	chr19	3113332	A	G	Panel-wide	Single-base substitution
GNA11	COSM9232870	chr19	3114989	chr19	3114987	CA	C	Panel-wide	Short Deletion
GNA11	COSM1392334	chr19	3118935	chr19	3118933	TG	T	Panel-wide	Short Deletion
GNA11	COSM6342228	chr19	3121130	chr19	3121128	TG	T	Panel-wide	Short Deletion
GNAS	COSM9277149	chr20	58854492	chr20	57429547	AGATCCCGACTCCGGACAGCACCAGCC	A	Panel-wide	Long Deletion
GNAS	COSM6939725	chr20	58891769	chr20	57466824	G	T	Panel-wide	Single-base substitution
GNAS	COSM6965756	chr20	58895644	chr20	57470699	A	G	Panel-wide	Single-base substitution
GNAS	COSM9312081	chr20	58898948	chr20	57474003	G	A	Panel-wide	Single-base substitution
GNAS	GNAS_exon_5_substitution	chr20	58903752	chr20	57478807	C	A	Panel-wide	Single-base substitution
GNAS	GNAS_exon_6_indel	chr20	58905438	chr20	57480493	AC	A	Panel-wide	Short Deletion
GNAS	COSM6977578	chr20	58910048	chr20	57485103	C	T	Panel-wide	Single-base substitution
GNAS	COSM4485625	chr20	58910387	chr20	57485442	C	T	Panel-wide	Single-base substitution
GNAS	COSM6907299	chr20	58910782	chr20	57485837	C	T	Panel-wide	Single-base substitution

Structural Variants (hg38)

VARIANT NAME	CHROM (left)	POS (left)	STRAND (left)	CHROM (right)	POS (right)	STRAND (right)
TPR-ALK	chr1	186356038	-	chr2	29224076	-
NCOA4-RET	chr10	46011367	-	chr10	43116069	+
EML4-ALK_1	chr2	42296683	+	chr2	29223818	-
EML4-ALK_2	chr2	42274038	+	chr2	29225363	-
EML4-ALK_3	chr2	42299216	+	chr2	29224970	-
KIF5B-RET_1	chr10	32024671	-	chr10	43115127	+
KIF5B-RET_2	chr10	32017898	-	chr10	43116570	+
KIF5B-RET_3	chr10	32016769	-	chr10	43111681	+
CCDC6-RET_1	chr10	59902925	-	chr10	43116230	+
CCDC6-RET_2	chr10	59856492	-	chr10	43115738	+
CCDC6-RET_3	chr10	59878855	-	chr10	43114498	+
TMPRSS2-ERG_1	chr21	41500528	-	chr21	38459803	-
TMPRSS2-ERG_2	chr21	41498977	-	chr21	38498962	-
TMPRSS2-ERG_3	chr21	41492788	-	chr21	38454918	-
TMPRSS2-ERG_4	chr21	41491739	-	chr21	38504507	-

Structural Variants (hg19)

NAME	CHROM (left)	POS (left)	STRAND (left)	CHROM (right)	POS (right)	STRAND (right)
TPR-ALK	chr1	186325170	-	chr2	29446942	-
NCOA4-RET	chr10	51584453	+	chr10	43611517	+
EML4-ALK_1	chr2	42523823	+	chr2	29446684	-
EML4-ALK_2	chr2	42501178	+	chr2	29448229	-
EML4-ALK_3	chr2	42526356	+	chr2	29447836	-
KIF5B-RET_1	chr10	32313599	-	chr10	43610575	+
KIF5B-RET_2	chr10	32306826	-	chr10	43612018	+
KIF5B-RET_3	chr10	32305697	-	chr10	43607129	+
CCDC6-RET_1	chr10	61662683	-	chr10	43611678	+
CCDC6-RET_2	chr10	61616250	-	chr10	43611186	+
CCDC6-RET_3	chr10	61638613	-	chr10	43609946	+
TMPRSS2-ERG_1	chr21	42872455	-	chr21	39831726	-
TMPRSS2-ERG_2	chr21	42870904	-	chr21	39870886	-
TMPRSS2-ERG_3	chr21	42864715	-	chr21	39826841	-
TMPRSS2-ERG_4	chr21	42863666	-	chr21	39876431	-