

JAX SomaticSeq™ Technical Specifications



Intended Use

JAX SomaticSeq™ is a qualitative next generation sequencing based assay that uses targeted selection of DNA from 517 genes of interest, and RNA from 55 known drivers, for a total of 1.94Mb panel size. JAX SomaticSeq™ detects genomic signatures including microsatellite instability (MSI) and tumor mutational burden (TMB) using DNA and RNA isolated from formalin-fixed paraffin embedded (FFPE) tissue specimens in a single, streamlined workflow. Over 1,000 clinical trials are available for the range of variants targeted by the assay. JAX SomaticSeq™ was developed with the Illumina TruSight Oncology 500 Assay and its performance characteristics determined by The Jackson Laboratory. It has not been cleared or approved by the US Food and Drug Administration.

Small Variants Only		Small Variants & CNVs		Small Variants & Fusions		Small Variants, CNVs, & Fusions		
ABL1	CBFB	EED	FGFR2	HSD3B1	MAX	PAX5	RAD51D	STAG1
ABL2	CBL	EGFL7	FGFR3	HSP90AA1	MCL1	PAX7	RAD52	STAG2
ABRAXAS1 (FAM175A)	CCN6 (WISP3)	*EGFR	FGFR4	ICOSLG	MDC1	PAX8	RAD54L	STAT3
ACVR1	CCND1	EIF1AX	FH	ID3	MDM2	PBRM1	RAF1	STAT4
ACVR1B	CCND2	EIF4A2	FLCN	IDH1	MDM4	PDCD1	RANBP2	STAT5A
ADGRA2 (GPR124)	CCND3	EIF4E	FLI1	IDH2	MED12	PDCD1LG2	RARA	STAT5B
AKT1	CCNE1	ELOC (TCEB1)	FLT1	IFNGR1	MEF2B	PDGFRA	RASA1	STK11
AKT2	CD274	EML4	FLT3	IGF1	MEN1	PDGFRB	RB1	STK40
AKT3	CD276	EMSY (C11orf30)	FLT4	IGF1R	*MET	PDK1	RBM10	SUFU
ALK	CD74	EP300	FOXA1	IGF2	MGA	PDPK1	RECQL4	SUZ12
ALOX12B	CD79A	EPCAM	FOXL2	IKBKE	MITF	PGR	REL	SYK
AMER1 (FAM123B)	CD79B	EPHA3	FOXO1	IKZF1	MLH1	PHF6	RET	TAF1
ANKRD11	CDC73	EPHA5	FOXP1	IL10	MLL3	PHOX2B	RHEB	TBX3
ANKRD26	CDH1	EPHA7	FRS2	IL7R	MPL	PIK3C2B	RHOA	TCF3
APC	CDK12	EPHB1	FUBP1	INHBA	MRE11 (MRE11A)	PIK3C2G	RICTOR	TCF7L2
AR	CDK4	ERBB2 (HER2)	FYN	INHBA	MSH2	PIK3C3	RIT1	TENT5C (FAM46C)
ARAF	CDK6	ERBB3	GABRA6	INPP4A	MSH3	PIK3CA	RNF43	TERC
ARFRP1	CDK8	ERBB4	GATA1	INPP4B	MSH6	PIK3CB	ROS1	TERT
ARID1A	CDKN1A	ERCC1	GATA2	INSR	MST1	PIK3CD	RPS6KA4	TET1
ARID1B	CDKN1B	ERCC2	GATA3	IRF2	MST1R	PIK3CG	RPS6KB1	TET2
ARID2	CDKN2A	ERCC3	GATA4	IRF4	MTOR	PIK3R1	RPS6KB2	TFE3
ARID5B	CDKN2B	ERCC4	GATA6	IRS1	MUTYH	PIK3R2	RPTOR	TFRC
ASXL1	CDKN2C	ERCC5	GEN1	IRS2	MYB	PIK3R3	RUNX1	TGFBR1
ASXL2	CEBPA	ERG	GID4	JAK1	MYC	PIM1	RUNX1T1	TGFBR2
ATM	CENPA	ERRF1	GLI1	JAK2	MYCL (MYCL1)	PLCG2	RYBP	TMEM127
ATR	CHD2	ESR1	GNA11	JAK3	MYCN	PLK2	SDHA	TMPRSS2
ATRX	CHD4	ETS1	GNA13	JUN	MYD88	PMAIP1	SDHAF2	TNFAIP3
AURKA	CHEK1	ETV1	GNAQ	KAT6A	MYO1D	PMS1	SDHB	TNFRSF14
AURKB	CHEK2	ETV4	GNAS	KDMSA	NAB2	PMS2	SDHC	TOP1
AXIN1	CIC	ETV5	GPS2	KDM5C	NBN	PNRC1	SDHD	TOP2A
AXIN2	COP1 (RFWD2)	ETV6	GREM1	KDM6A	NCOA3	POLD1	SETBP1	TP53
AXL	CREBBP	EWSR1	GRIN2A	KDR	NCOR1	POLE	SETD2	TP63
B2M	CRKL	EZH2	GRM3	KEAP1	NEGR1	PPARG	SF3B1	TRAF2
BAP1	CRLF2	FANCA	GSK3B	KEL	NF1	PPM1D	SH2B3	TRAF7
BARD1	CSF1R	FANCC	H1-2 (HIST1H1C)	KIF5B	NF2	PPP2R1A	SH2D1A	TSC1
BBC3	CSF3R	FANCD2	H2BC5 (HIST1H2BD)	KIT	NFE2L2	PPP2R2A	SHQ1	TSC2
BCL10	CSNK1A1	FANCE	H3-3A (H3F3A)	KLF4	NFKBIA	PPP6C	SLIT2	TSHR
BCL2	CTCF	FANCF	H3-3B (H3F3B)	KLHL6	NKX2-1	PRDM1	SLX4	U2AF1
BCL2L1	CTLA4	FANCG	H3-4 (HIST3H3)	KMT2A (MLL)	NKX3-1	PREX2	SMAD2	VEGFA
BCL2L11	CTNNA1	FANCI	H3-5 (H3F3C)	KRAS	NOTCH1	PRKAR1A	SMAD3	VHL
BCL2L2	CTNNB1	FANCL	H3C1 (HIST1H3A)	LAMP1	NOTCH2	PRKCI	SMAD4	VTCN1
BCL6	CUL3	FAS	H3C10 (HIST1H3H)	LATS1	NOTCH3	PRKDC	SMARCA4	WT1
BCOR	CUX1	FAT1	H3C11 (HIST1H3I)	LATS2	NOTCH4	PRKN (PARK2)	SMARCB1	XIAP
BCORL1	CXCR4	FBXW7	H3C12 (HIST1H3J)	LMO1	NPM1	PRSS8	SMARCD1	XPO1
BCR	CYLD	FGF1	H3C13 (HIST2H3D)	LRP1B	NRAS	PTCH1	SMC1A	XRCC2
BIRC3	DAXX	FGF10	H3C14 (HIST2H3C)	LYN	NRG1	PTEN	SMC3	YAP1
BLM	DCUN1D1	FGF14	H3C15 (HIST2H3A)	LZTR1	NSD1	PTPN11	SMO	YES1
BMPR1A	DDR2	FGF19	H3C2 (HIST1H3B)	MAGI2	NTRK1	PTPRD	SNCAIP	ZBTB2
BRAF	DDX41	FGF2	H3C3 (HIST1H3C)	MALT1	NTRK2	PTPRS	SOCS1	ZBTB7A
BRCA1	DHX15	FGF23	H3C4 (HIST1H3D)	MAP2K1	NTRK3	PTPRT	SOX10	ZFHX3
BRCA2	DICER1	FGF3	H3C6 (HIST1H3E)	MAP2K2	NUP93	QKI	SOX17	ZNF217
BRD4	DIS3	FGF4	H3C7 (HIST1H3F)	MAP2K4	NUTM1	RAB35	SOX2	ZNF703
BRIP1	DNAJB1	FGF5	H3C8 (HIST1H3G)	MAP3K1	PAK1	RAC1	SOX9	ZRSR2
BTG1	DNMT1	FGF6	HGF	MAP3K13	PAK3	RAD21	SPEN	*EGFR exons 2-7 (vIII) & MET exon 14 skipping events also reported
BTK	DNMT3A	FGF7	HNF1A	MAP3K14	PAK5 (PAK7)	RAD50	SPOP	
CALR	DNMT3B	FGF8	HNRNPK	MAP3K4	PALB2	RAD51	SPTA1	
CARD11	DOT1L	FGF9	HOXB13	MAPK1	PARP1	RAD51B	SRC	
CASP8	E2F3	FGFR1	HRAS	MAPK3	PAX3	RAD51C	SRSF2	

