



## Department of Pathology and Clinical Laboratories

### MiOncoSeq

### OncoSeq Assay Test Definition

#### 1.0 Purpose and Scope

N/A

#### 2.0 Applies To

MiOncoSeq Lab

#### 3.0 Terms and Definitions

##### OncoSeq v6a Assay Test Definition

The OncoSeq v6a Assay covers all or parts of 1,792 genes that have been implicated in cancer. The assay design consists of approximately 4.5 Mb of target sequence including exons of targeted genes as well as regions added for technical reasons. A complete gene list is appended below.

The OncoSeq v6a Assay tests for somatic mutations in 1,779 protein coding genes and reports nonsynonymous somatic single nucleotide variants (SNVs), plus splicing variants (up to 2 bases into an intron) that are present at 5% or greater allelic fraction in the tumor sample. The assay covers somatic single nucleotide variants (SNVs), small insertions and deletions (indels), and indels up to exon length. The assay also reports variants as low as 1% allelic fraction if the variant exists with sufficient read support. Variants are annotated to RefSeq and reported with respect to the most commonly reported isoform, if there are multiple relevant annotations. An additional 13 noncoding or HLA loci genes are targeted for detection of LOH only and somatic variants are not reported in these genes.

The OncoSeq v6a Assay reports germline variants in 182 cancer predisposition genes. Variants at less than 0.5% population frequency are reported. The list of 182 cancer predisposition genes is appended at the end of this document.

OncoSeq validation against Sanger sequencing and externally generated data indicates that the assay has above 90% sensitivity for the detection of clonal mutations in samples with at least 20% tumor purity, and above 90% positive predictive value.

In cases where a matched normal sample is unavailable or of unacceptable quality, the OncoSeq v6a Assay filters by population frequencies instead of presence in the normal sample; this process recovers approximately 97% of the real somatic variants but also calls some private germline variants that cannot be distinguished from somatic mutations.

## 4.0 Policy/Instructions

OncoSeq v6a Assay Gene List (genes in *italics>*) do not have somatic variants reported)

AATK	ABCA1	ABCB1	ABCB11	ABCB4	ABCC1
ABCC2	ABCG1	ABCG2	ABI1	ABL1	ABL2
ABRAXAS1	ACD	ACE	ACSL6	ACTA2	ACTC1
ACVR1	ACVR1B	ACVR2A	ACVR2B	ACVRL1	ADAM17
ADAMTS20	ADGRA2	ADGRB3	ADGRL2	ADGRL3	ADRB1
ADRB2	AFF1	AFF2	AFF3	AHR	AIP
AJUBA	AKAP9	AKT1	AKT2	AKT3	ALK
ALKBH6	ALOX12B	ALOX5	AMER1	APC	APEX1
APH1A	APOA1	APOB	APOBEC3A	APOBEC3B	AR
ARAF	AREG	ARFRP1	ARHGAP10	ARHGAP26	ARHGAP35
ARHGEF12	ARID1A	ARID1B	ARID2	ARID5B	ARNT
ARNT2	ARPC1A	ARPC1B	ARTN	ARX	ASCL1
ASCL2	ASCL3	ASCL4	ASCL5	ASH1L	ASH2L
ASPSCR1	ASXL1	ASXL2	ASXL3	ATAD2	ATAD2B
ATF1	ATM	ATP1A1	ATP2B3	ATP6AP1	ATP6AP2
ATP6V1B2	ATR	ATRX	ATXN1	AURKA	AURKB
AURKC	AXIN1	AXIN2	AXL	B2M	BACH1
BACH2	BAG4	BAP1	BARD1	BAX	BAZ1A
BAZ1B	BAZ2A	BAZ2B	BBC3	BCAR3	BCL10
BCL11A	BCL11B	BCL2	BCL2A1	BCL2L1	BCL2L11
BCL2L2	BCL3	BCL6	BCL7A	BCL9	BCL9L
BCOR	BCORL1	BCR	BDNF	BID	BIRC2
BIRC3	BIRC5	BIRC8	BLK	BLM	BLNK
BMI1	BMPR1A	BMPR1B	BMX	BPTF	BRAF
BRCA1	BRCA2	BRD1	BRD2	BRD3	BRD4
BRD7	BRD8	BRD9	BRDT	BRIP1	BRPF1
BRPF3	BRWD1	BRWD3	BTC	BTG1	BTG2
BTG3	BTK	BTRC	BUB1	BUB1B	BUB3
CACNA1D	CADM2	CALR	CAMTA1	CAPRIN2	CARD10
CARD11	CARD6	CARD8	CARD9	CARM1	<i>(CASC11)</i>
CASP8	CBFA2T2	CBFA2T3	CBFB	CBL	CBLB
CBLC	CBX1	CBX2	CBX3	CBX4	CBX5
CBX6	CBX7	CBX8	CCDC6	CCN1	CCN2
CCN3	CCN4	CCN5	CCN6	CCNB3	CCND1
CCND2	CCND3	CCNE1	CCNE2	CCNL1	CD19
CD1D	CD22	CD274	CD276	CD28	CD33
CD38	CD40	CD40LG	CD44	CD58	CD70
CD79A	CD79B	CD80	CD86	CDC14A	CDC20
CDC25A	CDC25B	CDC25C	CDC42	CDC6	CDC73
CDH1	CDH10	CDH11	CDH2	CDH20	CDH3
CDH5	CDH7	CDK1	CDK10	CDK12	CDK13
CDK14	CDK15	CDK16	CDK17	CDK18	CDK19
CDK2	CDK20	CDK3	CDK4	CDK5	CDK6

CDK7	CDK8	CDK9	CDKN1A	CDKN1B	CDKN1C
CDKN2A	CDKN2B	CDKN2C	CDKN3	CDX1	CDX2
CEBPA	CEBPB	CEBPD	CEBPE	CEBPG	CEBPZ
CECR2	CENPE	CES1	CES2	CHCHD7	CHD1
CHD1L	CHD2	CHD3	CHD4	CHD5	CHD6
CHD7	CHD9	CHEK1	CHEK2	CHIC1	CHIC2
CHUK	CIC	CIITA	CILK1	CKS1B	CKS2
CLIP1	CMPK1	CNKSR1	CNOT3	CNTFR	COMT
COPS3	CRBN	CREB1	CREB3L1	CREB3L2	CREB3L4
CREBBP	CREM	CRHR1	CRK	CRKL	CRLF2
CRTC1	CRTC2	CRTC3	CSF1	CSF1R	CSF2RA
CSF2RB	CSF3R	CSK	CSNK1A1	CSNK1D	CSNK1E
CTCF	CTCF1	CTLA4	CTNNA1	CTNNA2	CTNNA3
CTNNB1	CTNND1	CTSD	CTSL	CTSS	CUL3
CUL4A	CUL4B	CUX1	CXCR4	CYLD	CYP17A1
CYP1A2	CYP21A2	CYP2A6	CYP2B6	CYP2C19	CYP2C8
CYP2C9	CYP2D6	CYP2J2	CYP2R1	CYP3A4	CYP3A5
CYP4F2	CYSLTR2	DACH1	DACH2	DAXX	DBH
DCC	DCUN1D1	DCUN1D2	DDB2	DDIT3	DDR1
DDR2	DDX3X	DDX41	DDX5	DDX6	DEK
DGCR8	DHFR	DHH	DIAPH1	DIAPH2	DIAPH3
DICER1	DIRAS3	DIS3	DIS3L2	DKC1	DNM2
DNMT1	DNMT3A	DNMT3B	DNMT3L	DOCK2	DOT1L
DPYD	DRD1	DRD2	DROSHA	DSC2	DSG2
DSP	DUSP22	DVL1	DVL2	DVL3	DYRK2
E2F1	E2F3	E2F5	E2F6	E2F7	EBF1
ECT2L	EED	EGF	EGFR	EGR1	EGR2
EHF	EHMT1	EHMT2	EIF1AX	ELANE	ELF1
ELF2	ELF3	ELF4	ELF5	ELK1	ELK3
ELK4	ELOC	ELP1	ELP3	EML4	EMSY
EP300	EPAS1	EPCAM	EPGN	EPHA1	EPHA2
EPHA3	EPHA4	EPHA5	EPHA6	EPHA7	EPHA8
EPHB1	EPHB2	EPHB3	EPHB4	EPHB6	EPOR
ERBB2	ERBB3	ERBB4	ERCC1	ERCC2	ERCC3
ERCC4	ERCC5	EREG	ERF	ERG	ESCO1
ESCO2	ESPL1	ESR1	ESR2	ESRRA	ETS1
ETS2	ETV1	ETV2	ETV3	ETV3L	ETV4
ETV5	ETV6	ETV7	EWSR1	EXT1	EXT2
EXTL1	EZH1	EZH2	FADD	FANCA	FANCB
FANCC	FANCD2	FANCE	FANCF	FANCG	FANCI
FANCL	FANCM	FAS	FASLG	FAT1	FAT2
FAT3	FAT4	FBN1	FBXO11	FBXO8	FBXW11
FBXW7	FEN1	FER	FES	FEV	FGF1
FGF10	FGF11	FGF12	FGF13	FGF14	FGF16
FGF17	FGF18	FGF19	FGF2	FGF20	FGF21
FGF22	FGF23	FGF3	FGF4	FGF5	FGF6
FGF7	FGF8	FGF9	FGFR1	FGFR2	FGFR3

FGFR4	FGR	FH	FHIT	FKBP10	FKBP5
FKBP9	FLCN	FLI1	FLT1	FLT3	FLT3LG
FLT4	FOLH1	FOS	FOSB	FOSL1	FOSL2
FOXA1	FOXA2	FOXA3	FOXC1	FOXG1	FOXL1
FOXL2	FOXN1	FOXN3	FOXO1	FOXO3	FOXO4
FOXP1	FOXP2	FOXP3	FOXP4	FOXQ1	FOXR1
FOXR2	FRK	FRS2	FRS3	FSHR	FUBP1
FUS	FYN	FZR1	G6PC3	G6PD	GAB1
GAB2	GABPA	GALNT12	GATA1	GATA2	GATA3
GATA4	GATA5	GATA6	GDNF	GEN1	GFI1
GFI1B	GFRA4	GGCX	GHR	GID4	GLA
GLCCI1	GLI1	GLI2	GLI3	GLIS1	GLIS2
GLIS3	GNA11	GNA13	GNAQ	GNAS	GNRHR
GOT1	GPC3	GPC5	GPS2	GRB10	GRB2
GRB7	GREM1	GRIN2A	GRK4	GRK5	GRM3
GRM8	GSK3A	GSK3B	GTF2I	GTPBP4	GUCY1A2
H1-2	H1-3	H1-4	H1-5	(H19)	H3-3A
H3-3B	H3C2	H4C5	HAX1	HBEGF	HCK
HDAC1	HDAC10	HDAC11	HDAC2	HDAC3	HDAC4
HDAC5	HDAC6	HDAC7	HDAC8	HDAC9	HDGF
HDGFRP3	HELLS	HES1	HES2	HES4	HEY1
HEY2	HGF	HIF1A	HIF1AN	(HLA-A)	(HLA-B)
(HLA-C)	(HLA-DPA1)	(HLA-DPB1)	(HLA-DQA1)	(HLA-DQB1)	(HLA-DRA)
(HLA-DRB1)	HLF	HLTF	HMGA1	HMGA2	HMGCR
HNF1A	HNF1B	HNRNPA3	HOXA10	HOXA11	HOXA13
HOXA3	HOXA9	HOXB13	HOXB3	HOXC10	HOXC11
HOXC13	HOXD10	HOXD11	HOXD13	HOXD3	HOXD4
HR	HRAS	HSD11B2	HSD3B1	HSP90AA1	HSP90AB1
HSPBAP1	HTR1A	HTR2A	ICOS	ICOSLG	ID1
ID2	ID3	ID4	IDH1	IDH2	IFNLR1
IGF1	IGF1R	IGF2	IGF2R	IHH	IKBIP
IKBKB	IKBKE	IKZF1	IKZF2	IKZF3	IL10RA
IL10RB	IL11RA	IL12RB1	IL12RB2	IL13RA1	IL15RA
IL17RA	IL17RB	IL17RC	IL18R1	IL18RAP	IL1R1
IL1R2	IL1RAP	IL20RA	IL20RB	IL21R	IL22RA1
IL22RA2	IL23R	IL2RA	IL2RB	IL2RG	IL3
IL3RA	IL4R	IL5RA	IL6R	IL6ST	IL7R
IL9R	ING1	ING4	INHBA	INPP4B	INSR
INSRR	INTS12	IQGAP1	IQGAP2	IQGAP3	IRAK1
IRF4	IRF5	IRF6	IRF8	IRS1	IRS2
IRS4	ITK	ITPKB	JADE1	JAK1	JAK2
JAK3	JARID2	JAZF1	JMJD1C	JMJD4	JMJD6
JMJD7	JMJD8	JUN	JUNB	JUND	JUP
KAT2A	KAT2B	KAT5	KAT6A	KAT6B	KAT7
KAT8	KCNH2	KCNJ5	KCNQ1	KDM1A	KDM1B
KDM2A	KDM2B	KDM3A	KDM3B	KDM4A	KDM4B
KDM4C	KDM4D	KDM5A	KDM5B	KDM5C	KDM5D

KDM6A	KDM6B	KDM7A	KDM8	KDR	KDSR
KEAP1	KEL	KHSRP	KIAA1804	KIF1B	KIT
KITLG	KLF12	KLF4	KLF5	KLF6	KLF8
KLHL6	KMT2A	KMT2B	KMT2C	KMT2D	KMT2E
KMT5A	KMT5B	KMT5C	KNSTRN	KRAS	LATS1
LATS2	LCK	LDB1	LDLR	LEF1	LEPR
LGR4	LGR5	LGR6	LHCGR	LIFR	LMNA
LMO1	LMO2	LMO7	LMTK2	LMTK3	LPP
LRP1B	LRP5	LRP6	LRRK2	LSM1	LTK
LYL1	LYN	LZTR1	MAD1L1	MAD2L1	MAD2L2
MAF	MAFB	MAGED1	MAGI2	MAK	MALT1
MAML1	MAML2	MAML3	MAMLD1	MAOA	MAP2K1
MAP2K2	MAP2K3	MAP2K4	MAP2K5	MAP2K6	MAP2K7
MAP3K1	MAP3K10	MAP3K11	MAP3K12	MAP3K13	MAP3K14
MAP3K15	MAP3K19	MAP3K2	MAP3K3	MAP3K4	MAP3K5
MAP3K6	MAP3K7	MAP3K8	MAP3K9	MAP4	MAP4K1
MAP4K2	MAP4K3	MAP4K4	MAP4K5	MAPK1	MAPK10
MAPK11	MAPK12	MAPK13	MAPK14	MAPK15	MAPK3
MAPK4	MAPK6	MAPK7	MAPK8	MAPK9	MARCHF1
MAST1	MAST2	MATK	MAU2	MAX	MAZ
MBD1	MBD3	MBD4	MC1R	MCL1	MCM8
MCPH1	MDM2	MDM4	MECOM	MED12	MED12L
MED29	MEF2B	MEN1	MERTK	MET	MGA
MGMT	MID1	MINK1	MIPOL1	MITF	MLF1
MLH1	MLH3	MLLT1	MLLT10	MLLT11	MLLT3
MLLT6	MLST8	MMP11	MN1	MNX1	MOB1A
MOB1B	MOS	MPG	MPL	MRE11	MRTFA
MRTFB	MSH2	MSH3	MSH4	MSH6	MSI2
MST1	MST1R	MTAP	MTCP1	MTDH	MTOR
MUSK	MUTYH	MXD1	MYB	MYBL1	MYBL2
MYBPC3	MYC	MYCL	MYCN	MYD88	MYH11
MYH7	MYL2	MYL3	MYLK	MYOD1	NAB1
NAB2	NAT2	NBN	NCK1	NCK2	NCOA1
NCOA2	NCOA3	NCOA4	NCOR1	NCOR2	NCSTN
NDRG1	NEK1	NEK10	NEK11	NEK2	NEK3
NEK4	NEK5	NEK6	NEK7	NEK8	NEK9
NF1	NF2	NFATC1	NFATC2	NFATC3	NFATC4
NFE2L2	NFE2L3	NFIA	NFIB	NFIC	NFIX
NFKB1	NFKB2	NFKBIA	NFKBIB	NFKBID	NFKBIE
NFKBIZ	NGF	NHP2	NIPBL	NKX2-1	NKX2-2
NKX2-3	NKX2-4	NKX2-5	NKX2-6	NKX2-8	NKX3-1
NKX3-2	NLRP1	NOD2	NONO	NOP10	NOTCH1
NOTCH2	NOTCH2NLA	NOTCH3	NOTCH4	NPM1	NPPB
NPR1	NQO1	NR0B1	NR3C1	NR3C2	NR4A1
NR4A2	NR4A3	NRAS	NRG1	NRG2	NRG3
NRG4	NRIP1	NRTN	NSD1	NSD2	NSD3
NT5C2	NTF3	NTF4	NTHL1	NTRK1	NTRK2

NTRK3	NUDT15	NUMB	NUMBL	NUP214	NUP93
NUP98	OLIG2	OSMR	PAK1	PAK2	PAK3
PAK4	PAK5	PAK6	PALB2	PALLD	PARP1
PARP2	PARP3	PARP4	PATZ1	PAX1	PAX2
PAX3	PAX4	PAX5	PAX6	PAX7	PAX8
PAX9	PAXIP1	PBRM1	PBX1	PBX2	PBX3
PBX4	PCBP1	PCSK9	PDCD1	PDCD1LG2	PDGFA
PDGFB	PDGFC	PDGFD	PDGFRA	PDGFRB	PDK1
PDPK1	PDS5A	PDS5B	PEAR1	PEG3	PERP
PGF	PGR	PHB	PHF1	PHF2	PHF6
PHF8	PHIP	PHLPP1	PHLPP2	PHOX2A	PHOX2B
PICALM	PIK3C2A	PIK3C2B	PIK3C2G	PIK3C3	PIK3CA
PIK3CB	PIK3CD	PIK3CG	PIK3R1	PIK3R2	PIK3R3
PIK3R4	PIM1	PIM2	PIM3	PKHD1	PKP2
PLA2G2A	PLAG1	PLAGL1	PLAGL2	PLCB1	PLCB2
PLCB3	PLCB4	PLCG1	PLCG2	PLK1	PLK2
PLK3	PLK4	PMAIP1	PML	PMS1	PMS2
PNRC1	POLD1	POLE	POR	POT1	POU2AF1
POU2F2	POU5F1	POU5F1B	POU5F2	POU6F1	POU6F2
PPARA	PPARD	PPARG	PPFIA1	PPM1D	PPP1R1C
PPP2R1A	PPP2R1B	PPP2R2A	PPP2R2B	PPP2R2C	PPP2R2D
PPP6C	PRCC	PRDM1	PRDM10	PRDM11	PRDM12
PRDM13	PRDM14	PRDM15	PRDM16	PRDM2	PRDM4
PRDM5	PRDM6	PRDM7	PRDM8	PRDM9	PREX2
PRF1	PRKACA	PRKACB	PRKAG2	PRKAR1A	PRKAR1B
PRKCI	PRKD1	PRKDC	PRKN	PRLR	PRMT1
PRMT2	PRMT3	PRMT5	PRMT6	PRMT7	PRMT8
PRPF40B	PRPF6	PRPS1	PRRX1	PRRX2	PRSS1
PRSS3	PRSS8	PSEN1	PSEN2	PSENE1	PSIP1
PSPN	PTCH1	PTCH2	PTEN	PTGIS	PTGS1
PTGS2	PTK2	PTK2B	PTK6	PTK7	PTPN11
PTPN13	PTPN14	PTPN2	PTPN21	PTPN22	PTPN6
PTPRB	PTPRC	PTPRD	PTPRF	PTPRG	PTPRJ
PTPRK	PTPRM	PTPRQ	PTPRR	PTPRT	PTTG1
(PVT1)	QKI	RAB23	RAB25	RABEP1	RAC1
RAC2	RAD21	RAD50	RAD51	RAD51AP1	RAD51B
RAD51C	RAD51D	RAD52	RAD54B	RAD54L	RAF1
RAP1GDS1	RARA	RARB	RARG	RASA1	RASA2
RB1	RBM10	RBM14	RBM15	RBPJ	REC8
RECQL4	REL	RELA	RELB	REST	RET
RHEB	RHOA	RHOB	RHOH	RHOT1	RICTOR
RIPK1	RIPK2	RIPK3	RIPK4	RIT1	RNF213
RNF40	RNF43	ROBO2	ROCK1	ROCK2	ROR1
ROR2	ROS1	RPA1	RPL10	RPL22	RPL5
RPN1	RPS6KB1	RPS6KB2	RPTOR	RRAGC	RRM1
RSF1	RSPO2	RSPO3	RUNDC3B	RUNX1	RUNX1T1
RUNX2	RUNX3	RUVBL1	RXRA	RYK	SAMD9

SAMD9L	SAV1	SBDS	SCN5A	SDHA	SDHAF2
SDHB	SDHC	SDHD	SEM1	SET	SETBP1
SETD1A	SETD1B	SETD2	SETD3	SETD4	SETD5
SETD6	SETD7	SETD9	SETDB1	SETDB2	SETMAR
SF1	SF3A1	SF3B1	SFPQ	SFRP1	SGK1
SGO1	SGO2	SH2B3	SH2D1A	SH3GL1	SHB
SHC1	SHC2	SHC3	SHC4	SHH	SHOC2
SIN3A	SIX1	SKI	SKIL	SKOR1	SKP2
SLAMF7	SLC15A2	SLC19A1	SLC22A1	SLC22A2	SLC22A3
SLC22A6	SLC26A3	SLC47A1	SLC47A2	SLC6A3	SLC6A4
SLCO1A2	SLCO1B1	SLCO1B3	SLCO2B1	SLIT2	SLX4
SMAD1	SMAD2	SMAD3	SMAD4	SMAD5	SMAD6
SMAD7	SMAD9	SMARCA1	SMARCA2	SMARCA4	SMARCA5
SMARCAD1	SMARCB1	SMARCC1	SMARCD1	SMARCD2	SMARCD3
SMARCE1	SMC1A	SMC1B	SMC2	SMC3	SMC4
SMC5	SMC6	SMCHD1	SMO	SMURF1	SMURF2
SMYD1	SMYD2	SMYD3	SMYD4	SMYD5	SOCS1
SOS1	SOS2	SOX1	SOX10	SOX17	SOX2
SOX21	SOX3	SOX4	SOX8	SOX9	SP100
SP110	SP140	SP140L	SP3	SPDEF	SPEN
SPI1	SPIB	SPIC	SPOP	SPOPL	SPRED1
SPRED2	SPRED3	SPRY2	SPRY3	SRC	SRGAP3
SRMS	SRSF2	SRY	SS18	SS18L1	SSTR1
SSTR2	SSTR3	SSTR4	SSTR5	SSX1	SSX2
SSX3	STAG1	STAG2	STARD3	STAT1	STAT2
STAT3	STAT4	STAT5A	STAT5B	STAT6	STK11
STK19	STK3	STK36	STK4	STYK1	SUFU
SULT1A1	SUV39H1	SUV39H2	SUZ12	SYK	TAF1
TAF15	TAF1L	TAL1	TAL2	TAOK1	TAOK2
TAOK3	TAP1	TAP2	TBC1D12	TBL1X	TBL1XR1
TBP	TBX18	TBX2	TBX22	TBX3	TBXAS1
TBXT	TCF12	TCF3	TCF4	TCF7	TCF7L1
TCF7L2	TCL1A	TCL1B	TEAD1	TEAD2	TEAD3
TEAD4	TEC	TEF	TEK	TENM2	TENT5C
(TERC)	TERF1	TERT	TET1	TET2	TET3
TFE3	TFEB	TFEC	TFG	TGFA	TGFB1
TGFB2	TGFBR1	TGFBR2	THADA	THPO	TIE1
TINF2	TLK1	TLK2	TLR1	TLR10	TLR2
TLR4	TLR5	TLR6	TLR7	TLR8	TLR9
TLX1	TLX2	TLX3	TMC6	TMC8	TMEM127
TMEM43	TMPRSS2	TNFAIP3	TNFRSF14	TNFRSF17	TNFRSF8
TNFRSF9	TNK1	TNK2	TNKS	TNKS2	TNNI3
TNNT2	TOP1	TOP2A	TOP2B	TP53	TP53BP1
TP63	TPM1	TPMT	TPTE	TRAF1	TRAF2
TRAF3	TRAF3IP1	TRAF3IP2	TRAF3IP3	TRAF6	TRAF7
TRIB1	TRIB2	TRIB3	TRIM24	TRIM28	TRIM33
TRIM66	TRIO	TRIP13	TRPS1	TRRAP	TSC1

TSC2	TSHR	TSHZ3	TTC6	TWIST1	TWIST2
TXK	TYK2	TYMS	TYRO3	U2AF1	U2AF2
UBE2D1	UBE2D2	UBE2D3	UBE2D4	UBE4A	UBR5
UGT1A1	UGT1A4	UHRF1	UHRF2	USB1	USP6
USP7	USP8	USP9X	USP9Y	UTY	VAV1
VAV2	VAV3	VDR	VEGFA	VEGFB	VEGFC
VEGFD	VGLL1	VGLL2	VGLL3	VGLL4	VHL
VHLL	VKORC1	VTCN1	WAPL	WAS	WASL
WIF1	WNK1	WNK2	WNK3	WNK4	WNT1
WNT10A	WNT10B	WNT11	WNT16	WNT2	WNT2B
WNT3	WNT3A	WNT4	WNT5A	WNT5B	WNT6
WNT7A	WNT7B	WNT8A	WNT8B	WNT9A	WNT9B
WRN	WT1	WWTR1	XBP1	XIAP	XIRP2
XPA	XPC	XPO1	XRCC2	YAP1	YEATS4
YES1	YWHAB	YWHAE	YWHAH	YWHAQ	YWHAZ
YY1	ZAP70	ZBTB16	ZBTB20	ZBTB33	ZBTB5
ZBTB7B	ZC3H12A	ZC3H12D	ZC3H7B	ZCCHC7	ZEB2
ZFHX3	ZFP36L1	ZFP36L2	ZMYM2	ZMYM3	ZMYND11
ZMYND8	ZNF217	ZNF292	ZNF384	ZNF423	ZNF444
ZNF471	ZNF521	ZNF607	ZNF639	ZNF668	ZNF703
ZNF704	ZNF750	ZNRF3	ZRSR2		



## OncoSeq v6a Assay 182 Genes for Germline Variant Reporting

ABRAXAS1	AIP	AKT1	ALK	APC	ATM
ATR	AURKA	AXIN2	BAP1	BARD1	BLM
BMPR1A	BRAF	BRCA1	BRCA2	BRIP1	BUB1B
CASP8	CBL	CCND1	CDC73	CDH1	CDK4
CDKN1B	CDKN1C	CDKN2A	CEBPA	CHEK1	CHEK2
CTNNA1	CYLD	CYP21A2	DDB2	DICER1	DKC1
EGFR	ELANE	EPCAM	EPHB2	ERCC1	ERCC2
ERCC3	ERCC4	ERCC5	ETV6	EXT1	EXT2
FANCA	FANCB	FANCC	FANCD2	FANCE	FANCF
FANCG	FANCI	FANCL	FANCM	FAS	FASLG
FH	FLCN	G6PC3	GALNT12	GATA2	GEN1
GFI1	GPC3	GREM1	HAX1	HOXB13	HOXD4
HRAS	IDH1	IDH2	IGF1	IGF2	JAK2
KIF1B	KIT	KRAS	LZTR1	MAP2K1	MAP2K2
MAX	MC1R	MEN1	MET	MITF	MLH1
MLH3	MPL	MRE11	MSH2	MSH3	MSH6
MUTYH	NBN	NF1	NF2	NHP2	NOP10
NRAS	NSD1	NTRK1	PALB2	PALLD	PAX5
PDGFRA	PDGFRB	PHB	PHOX2B	PIK3CA	PLA2G2A
PMS1	PMS2	POLD1	POLE	POT1	POU6F2
PPARG	PPM1D	PRKAR1A	PRKN	PRSS1	PTCH1
PTCH2	PTEN	PTPN11	PTPRJ	RAD50	RAD51
RAD51B	RAD51C	RAD51D	RAD54L	RAF1	RB1
RECQL4	RET	RUNX1	SBDS	SDHA	SDHAF2
SDHB	SDHC	SDHD	SH2B3	SH2D1A	SHOC2
SLX4	SMAD4	SMAD7	SMARCA4	SMARCB1	SOS1
SPRED1	STK11	SUFU	TERT	TGFB1	TGFBR1
TGFBR2	THPO	TINF2	TLR2	TLR4	TMC6
TMC8	TMEM127	TP53	TP53BP1	TSC1	TSC2
USB1	VHL	WAS	WRN	WT1	XPA
XPC	XRCC2				

## 5.0 Related Department Documents

N/A

## 6.0 References

N/A

## 7.0 Revision History

Date (mm/dd/yyyy)	Section	Revision Notes/Comments
2/24/2023	All	mjeanmar: Put into MediaLab instead of only on shared drive.
4/22/2024	All	pmingyu: Changed format.