

For Research Use Only. Not for use in diagnostic procedures.

### AMPK Pathway

ACACA	ADRA2A	AKT3	CPT1C	FOXO3	INSR	PFKFB3	PPP2R1B	PRKACB	RB1CC1	STRADB
ACACB	ADRA2B	ATG13	CPT2	GAPDH	LEPR	PFKFB4	PPP2R2B	PRKAG1	RPS6KB1	TP53
ACTB	ADRA2C	CAMKK1	CRTC2	GPAM	LIPE	PNPLA2	PPP2R4	PRKAG2	RPS6KB2	TSC1
ADIPOR1	AK1	CAMKK2	CRY1	GPAT2	MLYCD	PPARGC1A	PRKAA1	PRKAG3	RPTOR	TSC2
ADIPOR2	AK2	CHRNA1	EEF2K	GYS1	MTOR	PPARGC1B	PRKAA2	PRKAR1A	SLC2A4	ULK1
ADRA1A	AK3	CHRNA1	EIF4EBP1	GYS2	PDPK1	PPP2CA	PRKAB1	PRKAR1B	SREBF1	
ADRA1B	AKT1	CPT1A	ELAVL1	HMGCR	PFKFB1	PPP2CB	PRKAB2	PRKAR2A	STK11	
ADRA1D	AKT2	CPT1B	FASN	HNF4A	PFKFB2	PPP2R1A	PRKACA	PRKAR2B	STRADA	

### Angiogenesis

ACTB	BMP2	CSF3	CXCL6	F3	GAPDH	IL12A	LECT1	NRP2	PROK1	SPHK1	TIMP1
AGGF1	BTG1	CTGF	CXCL9	FGF1	GRN	IL12B	LEP	PDGFA	PROK2	SPINK5	TIMP2
AKT1	CCL11	CXCL1	EDIL3	FGF13	GRP	IL17F	MDK	PDGFB	PTGS1	STAB1	TIMP3
AMOT	CCL15	CXCL10	EDN1	FGF2	HGF	IL1B	MMP14	PDGFD	PTN	TEK	TNF
ANG	CCL2	CXCL11	EFNA1	FGFBP1	HIF1A	IL6	MMP2	PECAM1	RHOB	TGFA	TNNI2
ANGPT1	CD55	CXCL12	EFNB2	FGFR3	HPSE	ITGAV	MMP9	PF4	RNH1	TGFB1	TNNI3
ANGPT2	CD59	CXCL13	EGF	FIGF	ID1	ITGB3	NOS3	PGF	RUNX1	TGFB2	TYMP
ANGPTL1	CDH5	CXCL14	ENG	FLT1	IFNB1	JAG1	NOTCH4	PLAU	S1PR1	TGFB1	VEGFA
ANGPTL4	CHGA	CXCL2	EPHB4	FN1	IFNG	KDR	NPPB	PLG	SERPINC1	THBS1	VEGFB
ANPEP	COL18A1	CXCL3	ERBB2	FOXO4	IGF1	KITLG	NPR1	PPBP	SERPINE1	THBS2	VEGFC
BA11	COL4A3	CXCL5	EREG	FST	IL10	KLK3	NRP1	PRL	SERPINF1	TIE1	

### Apoptosis

ACTB	BCL10	BNIP3	CASP4	COMMD4	FAF1	HTT	JPH3	NAIP	PPIA	SQSTM1	TNFSF15
AIFM1	BCL2	BNIP3L	CASP5	CRADD	FAS	IFNG	JUN	NFKB1	PPID	SYCP2	TNFSF8
AKT1	BCL2A1	BOK	CASP6	CTSB	FASLG	IGF1	KCNIP1	NFKBIA	PRF1	TMEM123	TP53
APAF1	BCL2L1	BRAF	CASP7	CTSS	FEM1B	IGF1R	LTA	NFKBIE	PVR	TMEM57	TP53BP2
APP	BCL2L10	C1orf159	CASP8	CYBB	FOXO1	IGF2	LTBR	NGF	PYCARD	TNF	TP63
ATG12	BCL2L11	CAPN1	CASP8AP2	CYCS	FUS	IKKB	MADD	NGFR	PYGL	TNFRSF10A	TP73
ATG16L1	BCL2L2	CAPN2	CASP9	CYLD	GAA	IKBK	MAG	NGFRAP1	RAB25	TNFRSF10B	TRADD
ATG3	BECN1	CAPN3	CCDC103	DAPK1	GADD45A	IL10	MAP1LC3A	NOD1	RELA	TNFRSF11B	TRAF2
ATG5	BFAR	CAPN5	CD27	DEFB1	GALNT5	INS	MAP2K4	NOL3	RIPK1	TNFRSF14	TRAF3
ATG7	BID	CAPN6	CD40	DENND4A	GAPDH	IRF1	MAP3K1	NOX1	RIPK2	TNFRSF17	TXNL4B
ATP6V1G2	BIK	CAPN7	CD40LG	DFFA	GLUD1	IRF2	MAPK10	NOX4	RIPK3	TNFRSF1B	ULK1
BAD	BIRC2	CAPNS1	CD70	DIABLO	GLUL	IRF3	MAPK8	OR10J3	RPS6KB1	TNFRSF21	XIAP
BAG1	BIRC3	CASP1	CDKN2A	DPYSL4	GRB2	IRF4	MCL1	PARP1	S100A7A	TNFRSF25	
BAG3	BIRC5	CASP10	CFLAR	EDA2R	GZMB	IRF5	MDM2	PARP2	SLC25A4	TNFRSF4	
BAK1	BIRC6	CASP14	CHUK	EIF5B	HELLS	IRF6	MGEA5	PIK3C3	SNCA	TNFRSF8	
BAX	BMF	CASP2	CIDEA	ESR1	HRK	IRF7	MYC	PIK3R1	SP1	TNFRSF9	
BBC3	BNIP2	CASP3	CIDEB	FADD	HSPBAP1	IRGM	MYD88	PMAIP1	SPATA2	TNFSF10	

### Cardio Toxicity

ABHD2	BCAT1	CD14	FOSL1	IGFBP5	PLAU	PVR	TCF4	TXNIP	WIP1	
ADRA2A	BTG2	COL3A1	GJA1	IL6	PPBP	RPS6KB1	TGFB2	UBXN2A		
AIFM1	CCL7	DUSP8	HSPA2	MCM6	PRKAB2	SERPINE1	TIAM1	VCAN		
AK3	CCR1	EGR1	HSPH1	PLA2G4A	PSMD7	SPP1	TIMP1	VEGFA		

### Cell Cycle

ANAPC2	BUB1	CCNE2	CDC34	CDKN1B	CSNK1E	FBXW11	HSPA2	MCM3	MSH5	PKMYT1	PRKACA
ATM	BUB1B	CCNF	CDC6	CDKN2A	CSNK2A1	FEN1	HUS1	MCM4	MYBL2	PLK1	PRKAR2B
ATR	CASP3	CCNG1	CDC7	CDKN2B	CSNK2B	FGFR10P	KIF2C	MCM5	MYC	PLK4	PRKCA
AURKA	CCNA1	CCNG2	CDK1	CDKN2C	CUL2	GADD45A	KNTC1	MCM6	NBN	POLD1	PRKCB
AURKB	CCNA2	CCNH	CDK2	CDKN2D	CUL3	CDK1	KPNA2	MCM7	NCAPD3	POLD2	PSMD2
BCCIP	CCNB1	CCNT1	CDK4	CDKN3	DKC1	H2AFX	LIG1	MDM2	NDC80	POLD3	PSMD7
BCL2	CCNB2	CDC14A	CDK5R1	CENPF	DMC1	H3F3A	LIN9	MKI67	NEK2	POLD4	PTTG1
BIRC5	CCNC	CDC16	CDK5RAP1	CENPN	E2F1	HDAC1	MAD2L1	MLH1	NPM1	POLE2	RAD1
BLM	CCND1	CDC20	CDK6	CHEK1	E2F3	HDAC8	MAPK1	MLH3	NUF2	PPP2CA	RAD17
BRCA1	CCND2	CDC25A	CDK7	CHEK2	E2F5	HIST1H3H	MAPK3	MNAT1	NUP62	PPP2CB	RAD21
BRCA2	CCND3	CDC25B	CDK8	CKS1B	EP300	HJURP	MAX	MRE11A	ORC6	PPP2R1A	RAD50
BTRC	CCNE1	CDC25C	CDKN1A	CKS2	FBXO5	HSP90AA1	MCM2	MSH4	PCNA	PPP2R1B	RAD51

# Annotated Gene List

## HTG EdgeSeq

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#### Cell Cycle Continued

RAD51C	RBL1	RFC4	RUVBL1	SMC1B	STAG2	TERF2IP	TINF2	TYMS	WEE1
RAD9A	RBL2	RPA1	SERTAD1	SMC3	STMN1	TERT	TOP2A	UBB	
RB1	RFC1	RPA3	SKP2	SMC4	SYCP2	TFDP1	TOP3A	UBE2C	
RBBP8	RFC3	RRM2	SMC1A	SPC25	TERF1	TFDP2	TP53	UBE2I	

#### Cluster of Differentiation

ABCG2	CCR7	CD33	CD70	CXCR1	FCER2	IL10RA	ITGA2	KLRD1	PDCD1	TLR1	TNFRSF21
ACKR1	CCR8	CD34	CD74	CXCR2	FCGR1A	IL10RB	ITGA3	L1CAM	PDCD1LG2	TLR2	TNFRSF4
ACKR3	CCR9	CD38	CD79A	CXCR3	FGFR1	IL13RA2	ITGA4	LAG3	PDGFRA	TLR3	TNFRSF8
ADAM17	CD14	CD3D	CD80	CXCR4	FGFR2	IL1R1	ITGA5	LEPR	PDGFRB	TLR4	TNFRSF9
ALCAM	CD160	CD4	CD83	CXCR5	FGFR3	IL1R2	ITGA6	LIFR	PECAM1	TLR6	TNFSF10
ALK	CD163	CD40	CD86	CXCR6	FGFR4	IL2RA	ITGAM	MME	PLAUR	TLR8	TNFSF11
ANPEP	CD19	CD40LG	CD8A	DDR1	FLT3	IL2RB	ITGAV	MPL	PROM1	TLR9	TNFSF13B
BMPR1B	CD2	CD44	CDH1	ENG	FZD10	IL2RG	ITGB1	MS4A1	PTPRC	TNFRSF10A	TNFSF14
C5AR1	CD209	CD47	CDH2	ENTPD1	FZD4	IL3RA	ITGB2	MSR1	PVR	TNFRSF10B	TNFSF8
CCR1	CD22	CD5	CDH5	EPCAM	FZD9	IL4R	ITGB3	MST1R	S1PR1	TNFRSF10C	TSPAN7
CCR2	CD24	CD52	CEACAM3	ERBB2	ICAM1	IL5RA	ITGB4	MUC1	SELE	TNFRSF10D	VCAM1
CCR3	CD27	CD55	CEACAM5	F11R	ICOS	IL6R	JAG1	NCAM1	SLAMF7	TNFRSF12A	
CCR4	CD274	CD59	CSF1R	F3	IFNGR1	IL6ST	KDR	NGFR	SLC7A5	TNFRSF14	
CCR5	CD276	CD63	CSF3R	FAS	IGF1R	IL7R	KIT	NRP1	TEK	TNFRSF17	
CCR6	CD28	CD68	CTLA4	FASLG	IGF2R	INSR	KLRB1	NT5E	THY1	TNFRSF18	

#### DMPK

ABCA2	ABCC10	ABCD3	CYP1B1	CYP3A5	SLC10A2	SLC22A2	SLC28A1	SLC38A2	SLC7A5	SLCO2B1	UGT1A6
ABCA3	ABCC11	ABCD4	CYP2A6	CYP4A22	SLC15A1	SLC22A3	SLC28A2	SLC38A5	SLC7A6	SLCO3A1	UGT2B7
ABCA4	ABCC12	ABCF1	CYP2B6	CYP7A1	SLC15A2	SLC22A6	SLC28A3	SLC39A6	SLC7A7	SLCO4A1	
ABCA5	ABCC2	ABCG8	CYP2C19	FMO3	SLC16A1	SLC22A7	SLC29A1	SLC3A1	SLC7A8	SULT1A1	
ABCA9	ABCC3	AHR	CYP2C8	FMO5	SLC16A2	SLC22A8	SLC29A2	SLC3A2	SLC7A9	SULT1B1	
ABCB11	ABCC4	AHRR	CYP2C9	FYN	SLC19A1	SLC22A9	SLC2A13	SLC45A3	SLCO1A2	SULT2A1	
ABCB4	ABCC5	CYP19A1	CYP2D6	GSTM1	SLC19A2	SLC25A13	SLC2A14	SLC5A1	SLCO1B1	TBP	
ABCB6	ABCC6	CYP1A1	CYP2U1	GSTM3	SLC19A3	SLC25A3	SLC2A2	SLC5A4	SLCO1B3	UGT1A1	
ABCC1	ABCD1	CYP1A2	CYP3A4	SLC10A1	SLC22A1	SLC26A2	SLC31A1	SLC7A11	SLCO2A1	UGT1A4	

#### DNA Repair

APEX1	CDK7	DNAJB13	DNAJC11	DNAJC4	ERCC3	MGMT	MSH6	PMS1	RAD23B	RPA3	XPC
APEX2	DBB2	DNAJB14	DNAJC12	DNAJC5	ERCC4	MLH1	MUTYH	PMS2	RAD50	SLK	XRCC1
ATM	DMC1	DNAJB2	DNAJC13	DNAJC5B	ERCC5	MLH3	NEIL1	PNKP	RAD51	SMUG1	XRCC2
ATR	DNAJA1	DNAJB5	DNAJC14	DNAJC5G	ERCC6	MMS19	NEIL2	POLB	RAD51B	TDG	XRCC3
ATXN3	DNAJA2	DNAJB6	DNAJC15	DNAJC6	ERCC8	MPG	NEIL3	POLD3	RAD51C	TOP3A	XRCC4
BRCA1	DNAJA3	DNAJB7	DNAJC16	DNAJC7	EXO1	MRE11A	NTHL1	POLL	RAD51D	TOP3B	XRCC5
BRCA2	DNAJA4	DNAJB8	DNAJC17	DNAJC8	FEN1	MSH2	OGG1	PRKDC	RAD52	TREX1	XRCC6
BRIP1	DNAJB1	DNAJB9	DNAJC18	DNAJC9	LIG1	MSH3	PARP1	RAD18	RAD54L	UNG	XRCC6BP1
CCNH	DNAJB11	DNAJC1	DNAJC21	ERCC1	LIG3	MSH4	PARP2	RAD21	RFC1	XAB2	
CCNO	DNAJB12	DNAJC10	DNAJC3	ERCC2	LIG4	MSH5	PARP3	RAD23A	RPA1	XPA	

#### EGF/PDGF Pathway

ACTR2	BAD	CCND1	DUSP6	FASLG	GSK3B	KRAS	MAPK10	NFATC3	PDPK1	PRKCA	RPS6KB1
AKT1	BCAR1	CHUK	EGF	FN1	HBEGF	LTA	MAPK3	NFKB1	PIK3CA	PTEN	SHC1
AKT2	BCL2	COL1A1	EGFR	FOS	HRAS	MAP2K1	MAPK8	NRAS	PIK3R1	RAF1	SRC
AKT3	BRAF	CREB1	EGR1	FOXO3	IKBKB	MAP2K4	MAPK9	NUP62	PIK3R2	RAP1A	STAT1
ARAF	CASP3	CSNK2A1	EIF4E	GAB1	IL2	MAP2K7	MKNK1	PDGFA	PLAT	RASA1	STAT3
ATF1	CASP9	CSNK2B	ELK1	GRB2	JAK1	MAP3K2	MMP7	PDGFB	PLCG1	RHOA	STAT5A
ATF2	CBL	DUSP1	EPS8	GSK3A	JUN	MAPK1	NCK2	PDGFRA	PPP2CA	RPS6KA5	TP53

### EGFR/HER Pathway

AKT1	CTNNBIP1	HEY1	IGFBP2	KRAS	MAPK12	MTOR	PDK1	PIK3R5	PRKCG	SHC3
AKT1S1	CTNND2	HEY2	IGFBP3	MAP2K1	MAPK13	NRAS	PIK3C2A	PLCB1	PRKCZ	SHC4
AKT2	EGF	HEYL	IGFBP4	MAP2K2	MAPK14	NRG1	PIK3C3	PLCB4	RAC1	STAT1
AKT3	EGFR	HGF	IGFBP5	MAP2K4	MAPK3	NRG2	PIK3CA	PLCE1	RAC2	STAT2
ARAF	EPGN	HRAS	IGFBP6	MAP2K7	MAPK6	NRG3	PIK3CB	PLCG1	RAC3	STAT3
AREG	ERBB2	IGF1	IGFBP7	MAP3K1	MAPK7	NRG4	PIK3CD	PLCG2	RAF1	STAT4
BRAF	ERBB3	IGF1R	ITPKB	MAP3K2	MAPK8	PAK1	PIK3CG	PRKCA	RASGRP1	STAT5A
BTC	ERBB4	IGF2	JAK1	MAPK1	MAPK9	PAK11P1	PIK3R1	PRKCB	RASGRP2	STAT5B
CDH1	EREG	IGF2R	JAK2	MAPK10	MDM2	PAK3	PIK3R2	PRKCD	SHC1	STAT6
CTNNB1	HBEGF	IGFBP1	JAK3	MAPK11	MET	PAK7	PIK3R3	PRKCE	SHC2	TGFA

### FGFR Pathway

AKT1	CDH13	FGF16	FGF5	GAB1	KLB	MAPK10	NRAS	PIK3R1	PRKCD	RHOB	SRC
AKT1S1	CDH2	FGF17	FGF6	GRB2	KRAS	MAPK11	PAK1	PIK3R2	PRKCE	RHOA	TCF4
AKT2	CDH3	FGF18	FGF7	HEY1	MAP2K1	MAPK12	PAK11P1	PIK3R3	PRKCG	SHC1	
AKT3	CDH5	FGF19	FGF8	HEY2	MAP2K2	MAPK13	PAK3	PIK3R5	PRKCZ	SHC2	
ARAF	CRK	FGF2	FGF9	HEYL	MAP2K3	MAPK14	PAK7	PLCB1	RAC1	SHC3	
BRAF	FGF1	FGF20	FGFBP1	HRAS	MAP2K4	MAPK3	PIK3C2A	PLCB4	RAC2	SHC4	
CADM1	FGF10	FGF21	FGFR1	ITPKB	MAP2K5	MAPK6	PIK3C3	PLCE1	RAC3	SOS1	
CBL	FGF11	FGF22	FGFR10P	JUN	MAP2K6	MAPK7	PIK3CA	PLCG1	RAF1	SOS2	
CBLC	FGF12	FGF23	FGFR2	JUNB	MAP2K7	MAPK8	PIK3CB	PLCG2	RASGRP1	SPRY1	
CDC42	FGF13	FGF3	FGFR3	JUND	MAP3K1	MAPK9	PIK3CD	PRKCA	RASGRP2	SPRY2	
CDH1	FGF14	FGF4	FGFR4	KL	MAPK1	MTOR	PIK3CG	PRKCB	RHOA	SPRY4	

### Hedgehog Pathway

BCL2	BOC	DISP1	FKBP8	GREM1	LATS1	NPC1	PTCHD1	SMO	WNT1	WNT3	WNT7B
BMP2	BTRC	DISP2	FOXE1	GSK3B	LATS2	NUMB	PTCHD2	STK3	WNT10A	WNT3A	WNT8A
BMP4	CDON	ERBB4	FRMD6	HHAT	LRP2	OTX2	PTCHD3	STK36	WNT10B	WNT4	WNT8B
BMP5	CSNK1A1	FAT4	GAS1	HHIP	MAPK1	PRKACA	RAB23	SUFU	WNT11	WNT5A	WNT9A
BMP6	CSNK1E	FBXW11	GLI1	IFT52	MOB1B	PRKACB	RUNX2	TP53	WNT16	WNT5B	WNT9B
BMP7	CTNNB1	FGF9	GLI2	IHH	MTSS1	PTCH1	SFRP1	VEGFA	WNT2	WNT6	ZIC1
BMP8B	DHH	FGFR3	GLI3	KCTD11	NF2	PTCH2	SHH	WIF1	WNT2B	WNT7A	ZIC2

### Housekeepers

ACTB	DDX5	GAPDH	OAZ1	RPL38	RPS7	SOD1	YWHAZ				
ATP5F1	EEF1G	NCL	PPIA	RPL6	SLC25A3	TBP					

### Hypoxia

ADM	ARNT	CCNG2	EGLN2	F3	HIF1AN	JMJD6	MXI1	P4HA1	PGF	SLC2A1	VEGFA
ADORA2B	ATR	COP55	EGR1	FAM162A	HIF3A	LGALS3	NAMPT	P4HB	PIM1	SLC2A3	
ALDOC	BHLHE40	CTSA	EIF4EBP1	FOS	HK2	LOX	NCOA1	PDK1	PKM	TP53	
ANGPTL4	BLM	DDIT4	ENO1	GBE1	HMOX1	MAP3K1	NDRG1	PER1	PLAU	TP1	
ANKRD37	BNIP3	DNAJC5	EPO	GPI	HNF4A	MET	NFKB1	PFKFB3	RBPJ	TXNIP	
ANXA2	BNIP3L	EDN1	ERO1L	GYS1	IER3	MIF	NOS3	PFKFB4	SERPINE1	USF2	
APEX1	CA9	EGLN1	F10	HIF1A	IGFBP3	MMP9	ODC1	PFKL	SLC16A3	VDAC1	

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#### Immuno-Oncology

ACKR2	CCL21	CD274	CRP	EDA2R	ID4	IL1RN	IRAK1	MAGEB1	NOD2	STAT5A	TNFRSF4
ACKR3	CCL22	CD276	CSF1	EOMES	IDO1	IL2	IRF1	MAGEB2	NODAL	STAT5B	TNFRSF8
ACKR4	CCL23	CD28	CSF1R	FADD	IFNA2	IL20	IRF2	MAGEB3	NOS2	STAT6	TNFRSF9
ADIPOQ	CCL24	CD38	CSF2	FAF1	IFNAR1	IL20RA	IRF3	MAGEC1	NR3C1	STC2	TNFSF10
APCS	CCL25	CD3D	CSF3	FAS	IFNB1	IL20RB	IRF4	MAGEC2	OMD	TBX21	TNFSF11
APOL3	CCL26	CD4	CSF3R	FASLG	IFNG	IL21	IRF5	MAGED1	OSM	TGFB1	TNFSF13B
AREG	CCL27	CD40	CTLA4	FGL2	IFNGR1	IL22	IRF6	MAGED2	PDCD1	TGFB2	TNFSF14
BCL2	CCL28	CD40LG	CXCL1	FOS	IFNL3	IL22RA1	IRF7	MAGEE1	PDCD1LG2	THPO	TNFSF15
BCL6	CCL3	CD47	CX3CR1	FOXP3	IL10	IL22RA2	IRF8	MAGEF1	PF4V1	TICAM1	TNFSF8
BMP2	CCL4	CD68	CXADR	FPR1	IL10RA	IL23A	IRF9	MAGEL2	PIAS1	TIRAP	TNFSF9
BMP4	CCL5	CD70	CXCL1	GATA3	IL10RB	IL23R	ITGAM	MAPK1	PIAS2	TLR1	TNNC2
BMP6	CCL7	CD80	CXCL10	GBP1	IL11	IL24	ITGB2	MAPK8	PIAS3	TLR2	TNNI2
BMP7	CCL8	CD86	CXCL11	GBP2	IL11RA	IL27	ITM2A	MBL2	PPARG	TLR3	TNNI3
C3	CCR1	CD8A	CXCL12	GNLY	IL12A	IL2RA	JAK2	MIF	PPBP	TLR4	TOLLIP
C3AR1	CCR10	CEACAM3	CXCL13	GPI	IL12B	IL2RB	KIT	MMP9	PRDM1	TLR5	TRADD
C5	CCR2	CEACAM5	CXCL14	GPR17	IL12RB2	IL2RG	KITLG	MPO	PRF1	TLR6	TRAF6
C5AR1	CCR3	CEACAM7	CXCL16	GZMA	IL13	IL3	KNG1	MS4A1	PTCRA	TLR7	TSLP
CA9	CCR4	CEBPA	CXCL2	GZMB	IL13RA2	IL33	LAG3	MSTN	PTGS2	TLR8	TYK2
CASP1	CCR5	CEBPD	CXCL3	GZMH	IL15	IL3RA	LIF	MX1	RAG1	TLR9	TYMP
CCL1	CCR6	CHI3L1	CXCL5	HAVCR2	IL16	IL4	LTA	MYD88	RIPK1	TNF	VEGFA
CCL11	CCR7	CKLF	CXCL6	HIF1A	IL17A	IL4R	LTB	NFAT5	RIPK2	TNFRSF10A	VTCN1
CCL13	CCR8	CKMT1A	CXCL9	HLA-A	IL17F	IL5	LTBR	NFATC1	RORC	TNFRSF10B	XCL1
CCL14	CCR9	CKMT2	CXCR1	HLA-B	IL17RB	IL5RA	LY96	NFATC3	SELE	TNFRSF10C	XCL2
CCL15	CCRL2	CMKLR1	CXCR2	HLA-E	IL18	IL6	LYZ	NFATC4	SLC11A1	TNFRSF10D	XCR1
CCL16	CCT2	CMTM1	CXCR3	HPGD	IL19	IL6R	MADCAM1	NFKB1	SLIT2	TNFRSF11B	
CCL17	CD14	CMTM2	CXCR4	ICAM1	IL1A	IL6ST	MAF	NFKBIA	SPP1	TNFRSF14	
CCL18	CD160	CMTM3	CXCR5	ICOS	IL1B	IL7	MAGEA1	NGFR	STAT1	TNFRSF17	
CCL19	CD19	CMTM4	CXCR6	ID1	IL1R1	IL7R	MAGEA11	NGFRAP1	STAT2	TNFRSF1B	
CCL2	CD209	CNTF	CXCL4	ID2	IL1R2	IL9	MAGEA2	NLRP3	STAT3	TNFRSF21	
CCL20	CD27	CRLF2	DDX58	ID3	IL1RAP	ILK	MAGEA4	NOD1	STAT4	TNFRSF25	

#### JAK/STAT Pathway

A2M	CRK	F2R	IFNAR1	IL4	JAK1	MPL	PDGFRA	PTPN11	SMAD5	SPI1	STAT5A
AKT1	CRP	FAS	IFNG	IL4R	JAK2	MYC	PIAS1	PTPRC	SOCS1	SRC	STAT5B
BCL2L1	CSF1R	FCER2	IFNGR1	IL6ST	JAK3	NFKB1	PIAS2	SH2B1	SOCS2	STAM	STAT6
CCND1	CXCL9	FCGR1A	IL10RA	INSR	JUN	NOS2	PIAS3	SMAD1	SOCS3	STAT1	STUB1
CDKN1A	EGFR	GATA3	IL20	IRF1	JUNB	NR3C1	PRL	SMAD2	SOCS4	STAT2	TYK2
CEBPA	EPOR	GHR	IL2RA	IRF9	LRG1	OAS1	PRLR	SMAD3	SOCS5	STAT3	USF1
CEBPD	F2	GRB2	IL2RG	ISG15	MCL1	OSM	PTPN1	SMAD4	SP1	STAT4	YY1

#### MAP Kinase Pathway

ARAF	CCND1	CDK6	CDKN2D	EGFR	HRAS	MAP2K1	MAP3K1	MAPK11	MAPK8	MKNK1	PRDX6
ATF2	CCND2	CDKN1A	CHUK	EGR1	HSPA5	MAP2K2	MAP3K2	MAPK12	MAPK8IP2	MOS	RAC1
BRAF	CCND3	CDKN1B	COL1A1	ELK1	HSPB1	MAP2K3	MAP3K3	MAPK13	MAPK9	MST1	RAF1
CCNA1	CCNE1	CDKN1C	CREB1	ETS1	JUN	MAP2K4	MAP3K4	MAPK14	MAPKAPK2	MYC	RB1
CCNA2	CDC42	CDKN2A	CREBBP	ETS2	KRAS	MAP2K5	MAP4K1	MAPK3	MAPKAPK3	NFATC4	SFN
CCNB1	CDK2	CDKN2B	DLK1	FOS	KSR1	MAP2K6	MAPK1	MAPK6	MAX	NRAS	SMAD4
CCNB2	CDK4	CDKN2C	E2F1	GRB2	LAMTOR3	MAP2K7	MAPK10	MAPK7	MEF2C	PAK1	TP53

#### NFkB Pathway

AGT	BIRC3	CD40	CXCL2	FOS	IL1A	LTA	NFKBIA	RELB	TIFA	TLR9	TRADD
AKT1	CARD11	CD83	CXCL3	HMOX1	IL1B	LTBR	NFKBIE	RHOA	TIMP1	TNF	TRAF2
ATF1	CASP1	CFLAR	EGFR	ICAM1	IL1R1	MALT1	NOD1	RIPK1	TLR1	TNFAIP2	TRAF3
BCL2A1	CASP8	CHUK	EGR1	IFNG	IRAK1	MAP3K1	PSIP1	STAT1	TLR2	TNFAIP3	TRAF6
BCL2L1	CCL2	CSF1	ELK1	IKKBK	IRAK2	MYD88	RAF1	STX11	TLR3	TNFRSF10A	
BCL3	CCL20	CSF2	FADD	IKBKG	IRF1	NFKB1	REL	TBK1	TLR4	TNFRSF10B	
BIRC2	CCL5	CSF3	FASLG	IL10	JUN	NFKB2	RELA	TICAM1	TLR6	TNFSF10	

Other

ACADS	BLVRA	CLDN3	EBF4	FUT8	HSF2	LAMP5	MTA1	PCOLCE	QSOX2	SFRP2	TNN
ACLY	BMP8A	CLIC1	ECI2	GABBR2	HSF4	LAT	MTDH	PCSK6	RAB27B	SGK1	TNR
ACTR1B	BTG3	CMC2	EFNA2	GAL	HSPA1A	LCN1	MTMR2	PDGFC	RALA	SGK2	TNXB
ACVR1B	C17orf53	CNIH4	EFNA3	GALNT3	HSPA1B	LCN2	MVP	PDIA4	RAMP2	SH3PXD2A	TOMM40
ACVR1C	C19orf40	CNPY1	EFNA5	GAMT	HSPA1L	LETMD1	MYBL1	PDLIM7	RAMP3	SIL1	TOR1A
ACVR2A	C1orf106	CNPY2	EFNB1	GAS6	HSPA8	LGALS1	MYCL	PDPN	RARB	SIN3A	TP53I3
ADAM23	C1orf86	CNPY4	EGR3	GATA4	HSPB2	LINC00886	NAB2	PELP1	RASA4	SIN3B	TPD52
ADAMTS1	C1QA	CNTFR	EI24	GATA5	HSPB3	LMO2	NAP1L1	PEX12	RASAL1	SIRT2	TRAF7
ADCK3	C5orf55	COL11A2	EIF4A1	GBP7	HSPB6	LOXL1	NASP	PFDN1	RASD1	SIRT3	TRIB1
ADORA2A	CA12	COL17A1	EIF6	GDAP1	HSPB8	LPL	NAT1	PFDN2	RASGRF1	SIRT4	TRIM72
AFF1	CACNA1C	COL1A2	ELL2	GDF6	IDH1	LRP12	NAT2	PGR	RASSF1	SIX1	TRIP13
AGFG1	CACNA1D	COL4A2	ELMO1	GEMIN2	IDO2	LRP1B	NAT8L	PHB	RASSF7	SMAD7	TRIP4
AHNAK	CACNA1E	COL4A4	EML4	GFRA1	IFI27	LRRFIP2	NCOA3	PHB2	RBM10	SMAD9	TSC22D3
AHNAK2	CACNA1H	COL4A5	ENDOD1	GLIS3	IFNA5	LTF	NCOR1	PHF6	RBX1	SMARCB1	TSPYL5
AIMP2	CACNA2D1	COL5A1	ENDOG	GM2A	IFNW1	LTN1	NCOR2	PHGDH	RECQL5	SNAI2	TTC9
AKR1C3	CACNA2D3	COL5A2	EPHA2	GML	INFA Family	LYVE1	NF1	PIAS4	REST	SNAI3	TTF1
ALDH2	CACNA2D4	COL6A6	ERG	GMPS	INHBA	MACC1	NFE2L2	PIDD1	RET	SORT1	TUBB3
ALDH4A1	CACNB2	COL9A3	ESM1	GNAI3	INHBB	MAFF	NFE2L3	PIM3	RGS2	SOST	U2AF1
ALKBH2	CACNB4	COMP	ESR2	GNAQ	INPP5J	MAGEA10-	NFKBIZ	PIN1	RIN1	SOX10	UBE2Z
ALKBH3	CACNG1	COX7B	ETV4	GNAZ	INTS7	MAGEA5	NKX2-1	PINX1	RIT1	SOX9	UBE3A
AMER1	CACNG6	CREB3L1	ETV5	GNG11	IRAK3	MAML2	NME1	PIR	RND2	SPARC	UQCRRF51
AMFR	CACYBP	CRLS1	ETV7	GNG12	IRS2	MAOA	NME7	PITRM1	RNF43	SPEF1	USMG5
AMH	CAD	CRTAC1	EVL	GNG4	ITGA7	MAOB	NMU	PLA2G10	ROS1	SPOP	UTY
ANLN	CALD1	CRYAB	EXOC3	GNG7	ITGA9	MAP1B	NNMT	PLA2G2A	RPL13	SRM	VAMP8
ANXA1	CALML3	CTNNA1	EXT1	GNGT1	ITGB6	MAP3K13	NOG	PLA2G3	RPL35	SSX1	VAPA
ANXA3	CALML6	CTPS1	EYA1	GNL3	ITGB8	MAP3K14	NOLC1	PLA2G4C	RPRM	STEAP4	VASH1
ANXA8	CAMK2B	CTSC	EZR	GPC4	ITLN2	MAP3K8	NPM2	PLA2G4E	RPS4X	STK32A	VDAC2
AP2B1	CARM1	CTSD	F8	GPD2	JAG2	MAP7D1	NR0B2	PLA2G4F	RPS6KA6	STK39	VDR
APBB1	CASP12	CTSH	FABP4	GPER1	KAT2B	MAPKAPK5	NR1H3	PLD1	RRAS2	SUSD3	VHL
APBBP2	CAV1	CTSL	FAM105A	GNPMB	KATNBL1	MAPKAPK5-	NR1H4	PLEK2	RRM2B	SUV39H2	VIPR1
AR	CBX5	CTS	FAM133A	GPR160	KCNK5	AS1	NR1I2	PLK2	RSP02	SWAP70	VPS13A
ARHGAP44	CCBL2	CXCL8	FAM213A	GPR180	KDM1A	MAPRE2	NR4A1	PLK3	RTN1	SYNCRIP	WWOX
ARHGEF16	CCNB3	CYR61	FAM64A	GPSM2	KDM3A	MAPT	NRIP1	PMEP1	RTN4RL1	SYP	XBP1
ARID1B	CCS	DAPL1	FAM83B	GRIN1	KDM3B	MAT2A	NSD1	PMS2P3	RUNDC1	TADA3	YBX3
ARMC1	CCT3	DAXX	FANCA	GRIN2B	KDM5B	MAZ	NTF3	POLR2H	RXRG	TAP1	ZAK
ARNT2	CCT4	DBI	FANCB	GSN	KDM5C	MCCC1	NTN3	POLR2J	S100A4	TAP2	ZBTB10
ASB13	CCT5	DDX17	FANCC	GSTA2	KDM6A	MDC1	NTRK1	PPAP2B	S100A6	TBL1X	ZBTB16
ASB16-AS1	CCT6A	DDX39B	FANCE	GTF2H3	KDM7A	MECOM	NTRK2	PPAT	S100A8	TBL1XR1	ZBTB32
ASB9	CCT7	DDX59	FANCF	GUCY1A3	KEAP1	MED1	NUDT13	PPIB	S100B	TBL1Y	ZFP36L1
ASNS	CDC14B	DEPDC1	FANCG	H3F3C	KIF3A	MED12	NUMBL	PPM1D	SACS	TC11B	ZHX2
ASPM	CDC42BPA	DES1	FANCL	HDAC10	KIF3B	MED23	NUPR1	PPP1R15A	SAFB	TEP1	ZNF189
ASXL1	CDH15	DHCR24	FBN1	HDAC11	KIF5B	MED24	OASL	PPP2R2C	SAP30	TESC	ZNF385B
ATP5G1	CDK5	DHX58	FCGR1B	HDAC3	KLK12	MELK	OCLN	PPP3CB	SCAPER	TET2	ZNF420
ATP7A	CDK9	DIAPH3	FES	HDAC4	KLHDC10	MEN1	OPCML	PPP3CC	SCN3A	TFF3	ZNF502
ATP7B	CDKL5	DICER1	FGFRL1	HDAC5	KLK4	MGA	ORM2	PPP3R2	SCUBE1	TGFB3	ZNF552
ATR	CDX2	DKK2	FHIT	HECTD4	KMT2B	MGAT4A	PA2G4	PRAME	SEC22C	TGFBI	ZNF589
AURKC	CEBPE	DKK4	FKBP5	HERC3	KMT2C	MGST1	PAG1	PRKACG	SEC61G	TGFBR2	ZNF805
B3GNT8	CECR6	DMD	FLJ10474	HIC1	KMT2D	MIA	PALB2	PRKX	SELM	THBS4	
BAG4	CELSR2	DNAJC22	FLNA	HMGA2	KRT18	MLLT3	PALM2-AKAP2	PRMT1	SERPINA3	THEM4	
BAG5	CEP55	DSC2	FLNC	HMGXB3	KRT19	MLLT4	PARK7	PRR15L	SERPINA9	TIPARP	
BAIAP3	CHI3L2	DTX1	FLRT1	HNF1A	KRT6A	MLPH	PARP4	PTDSS1	SERPINB2	TK1	
BAP1	CHMP4B	DTX3	FLRT2	HNRNPA1	KRT7	MMP11	PAX3	PTHLH	SERPINB5	TMEFF1	
BATF	CIC	DUSP2	FOXC2	HNRNPU	KRT8	MMP3	PAX5	PTP4A1	SERPINH1	TMEM132A	
BBS4	CIRBP	DUSP4	FOXO3	HOXA10	LAMA1	MRPL13	PBRM1	PTPRR	SETBP1	TMEM74B	
BCOR	CITED2	DUSP5	FOXRED1	HOXD1	LAMA5	MS1	PBX3	PTTG2	SETD2	TMSB10	
BDNF	CKB	EAF2	FRS2	HSD17B12	LAMB4	MT1X	PCK1	PUS1	SF3A1	TNKS	
BIRC7	CLCF1	EBAG9	FRS3	HSF1	LAMC3	MT2A	PCNX	QDPR	SF3B5	TNKS2	

# Annotated Gene List

## HTG EdgeSeq

### Oncology Biomarker Panel

For Research Use Only. Not for use in diagnostic procedures.

#### PI3K/AKT Pathway

ADAR	CASP9	CTNNB1	FASLG	GRB2	IRAK1	MAPK3	PABPC1	PIK3CG	PTK2	RHOA	TIRAP
AKT1	CCND1	EIF2AK2	FKBP1A	GSK3B	IRS1	MAPK8	PAK1	PIK3R1	PTPN11	RPS6KA1	TLR4
AKT2	CD14	EIF4B	FOS	HRAS	ITGB1	MTCP1	PDGFRA	PIK3R2	RAC1	RPS6KB1	TOLLIP
AKT3	CDC42	EIF4E	FOXO1	HSPB1	JUN	MTOR	PDK1	PRKCA	RAF1	SHC1	TSC1
APC	CDKN1B	EIF4EBP1	FOXO3	IGF1	MAP2K1	MYD88	PDK2	PRKCB	RASA1	SOS1	TSC2
BAD	CHUK	EIF4G1	GJA1	IGF1R	MAPK1	NFKB1	PDPK1	PRKCZ	RBL2	SRF	WASL
BTK	CSNK2A1	ELK1	GRB10	ILK	MAPK14	NFKBIA	PIK3CA	PTEN	RHEB	TCL1A	YWHAH

#### Receptors, Ligands and Cell Signaling

ACSL3	BBC3	CDH1	FOSL1	HEYL	MAP2K1	MAPK7	PAK3	PLCB1	RAC1	SLC2A1	WNT3A
ACSL4	BCL2	CDKN1A	FTH1	HMOX1	MAP2K2	MAPK8	PAK7	PLCB4	RAC2	SOCS3	WNT5A
ACSL5	BCL2A1	CDKN1B	GADD45A	HRAS	MAP2K4	MAPK9	PCNA	PLCE1	RAC3	SORBS1	WNT6
ADM	BCL2L1	CEBPD	GADD45B	ICAM1	MAP2K7	MCL1	PIK3C2A	PLCG1	RAF1	SQSTM1	
AKT1	BIRC3	CPT2	GATA3	ID1	MAP3K1	MMP7	PIK3C3	PLCG2	RASGRP1	STAT1	
AKT1S1	BMP2	CSF1	GCLC	IFNG	MAPK1	MTOR	PIK3CA	PPARD	RASGRP2	TNF	
AKT2	BMP4	DAB2	GCLM	IFRD1	MAPK10	MYC	PIK3CB	PRKCA	RB1	TNFSF10	
AKT3	BRAF	EGFR	GSR	IRF1	MAPK11	NOTCH1	PIK3CD	PRKCB	SERPINE1	TXN	
ARAF	BTG2	EMP1	HERPUD1	ITPKB	MAPK12	NQO1	PIK3CG	PRKCD	SHC1	TXNRD1	
ARNT	CA9	EPO	HES1	JAG1	MAPK13	NRAS	PIK3R1	PRKCE	SHC2	VEGFA	
ATF4	CCL5	FABP1	HES5	KRAS	MAPK14	OLR1	PIK3R2	PRKCG	SHC3	WISP1	
AXIN2	CCND1	FAS	HEY1	LFNG	MAPK3	PAK1	PIK3R3	PRKCZ	SHC4	WNT1	
BAX	CCND2	FCER2	HEY2	LRG1	MAPK6	PAK1IP1	PIK3R5	PTCH1	SLC27A4	WNT2B	

#### Stem Cells

ABCB5	CD24	DLL1	ETV2	GFAP	JAG1	MIXL1	NOTCH2	PROM1	SOX17	TEK	ZEB2
ABCG2	CD34	DLL4	FGF2	GSC	JAK2	MS4A1	NR0B1	PTCH1	SOX2	TERT	ZFP42
ACTA2	CD38	DNMT1	FGF5	GSK3B	KAT5	MUC1	NR5A2	PTPRC	SOX3	TGFBRI	ZFX
AICDA	CD44	DPPA2	FGFR2	HAND1	KIT	MYBL2	NR6A1	RIF1	SOX7	THAP11	
ALB	CDC42	DPPA3	FLII	HDAC1	KITLG	MYC	NT5E	SALL4	STAT3	THY1	
ALCAM	CDK1	DPPA4	FLOT2	HNF4A	KLF17	MYCN	OLIG2	SAV1	T	TRIM28	
ALDH1A1	CHD1	DPPA5	FOXA2	HSPA9	KLF4	MYOD1	OTX2	SCN1A	TAGLN	TWIST1	
ALPL	CHD7	EGF	FOXP1	ID1	LATS1	NANOG	PAF1	SIRT1	TAL1	TWIST2	
ATM	CHEK1	EN2	FZD7	IKBKB	LIN28A	NCAM1	PAX6	SMAD1	TAT	UTF1	
ATXN1	CNOT3	ENG	GATA1	ISL1	LIN28B	NES	PECAM1	SMAD2	TAZ	WEE1	
AXL	DACH1	EPCAM	GATA2	ITGA2	MAML1	NFKB1	PLAT	SMAD3	TBX3	WNT1	
BMI1	DDR1	ERBB2	GATA3	ITGA4	MEIS1	NKX2-5	PLAUR	SMO	TCF3	WWC1	
BMP7	DES	ESRRB	GATA6	ITGA6	MERTK	NOS2	POU5F1	SNAI1	TCL1A	YAP1	
CCNA2	DKK1	ETFA	GDF3	ITGB1	MESP1	NOTCH1	PRDM14	SOX15	TDGF1	ZEB1	

#### Stress Toxicity

ADM	ATF6	BBC3	CCL2	DDB2	GADD45A	HMOX1	IFNG	NBN	RAD9A	TNF	ULK1
AKR1B1	ATF6B	BECN1	CD40LG	DDIT3	GADD45G	HSP90AA1	IL1A	NFAT5	RIPK1	TNFRSF10A	VEGFA
AQP1	ATG12	BID	CDKN1A	DNAJC3	GCLC	HSP90B1	IL1B	NQO1	SERPINE1	TNFRSF10B	XPC
AQP2	ATG5	BNIP3L	CFTR	EDN1	GCLM	HSPA4	IL6	PARP1	SLC2A1	TP53	
AQP4	ATG7	CA9	CHEK1	EPO	GRB2	HSPA4L	MCL1	PVR	SLC5A3	TXN	
ARNT	ATM	CALR	CHEK2	FAS	GSR	HSPA5	MMP9	RAD17	SQSTM1	TXNL4B	
ATF4	ATR	CASP1	CRP	FTH1	GSTP1	HUS1	MRE11A	RAD51	TLR4	TXNRD1	

#### Tissue Specific Genes

ABCA3	ACTR3B	ALAS1	AQP9	BAMBI	BTG1	CALR	CBL	CCNB1	CD160	CD52	CDK16
ABCB11	ADAR	ALB	AREG	BCL2L1	BUB1B	CAMK2N1	CBX3	CCNB2	CD19	CD55	CDK4
ABCB4	ADIPOQ	ALDH1A3	ARID1A	BCL6	C1S	CAMKK2	CCL16	CCNC	CD2	CD8A	CDK6
ABCC4	ADIPOR1	ALPL	ARID2	BCR	C5	CAPN1	CCL19	CCND3	CD22	CDC25A	CDKN2C
ABCC6	ADRA1D	ANG	ATAD2	BID	C5AR1	CAPN6	CCL2	CCR1	CD27	CDC25B	CDKN2D
ABCD3	ADRA2A	APCS	ATP5A1	BIRC2	CA9	CASP1	CCL20	CCR2	CD28	CDC34	CDKN3
ABCG8	AGER	APEX1	ATP5F1	BIRC5	CACNA1G	CASP2	CCL22	CCR3	CD33	CDCA7	CDON
ABHD2	AIFM1	APH1B	ATP6VOC	BMF	CACNA2D2	CASP8	CCL25	CCR7	CD3D	CDH2	CEBPA
ACACB	AKAP1	APOC2	ATP6V1G2	BMP1	CACNB3	CASP8AP2	CCL28	CCR9	CD4	CDH3	CENPF
ACSL3	AKR1B1	APOC4	BAG1	BNIP3	CACNG4	CASP9	CCL5	CCT2	CD40	CDH5	CENPN
ACSL5	AKT1	AQP7	BAG2	BNIP3L	CALML5	CAV2	CCNA2	CCT6B	CD40LG	CDK1	CES1



Tissue Specific Genes Continued

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CES2	CYP2C9	FGF19	HMGB2	ITM2A	MAPKAPK2	PDGFRA	PYGL	SLC25A3	TAT	UBE2T
CFLAR	CYP2D6	FGFBP1	HMGB3	JAK1	MAPKAPK3	PDGFRB	RAB4A	SLC27A4	TBK1	ULK1
CFTR	CYP2U1	FGFR4	HMGCR	JAK3	MAX	PDPK1	RAB6B	SLC28A2	TBX21	UNG
CHAD	CYP4A22	FGL2	HMGCS2	JMJD1C	MBL2	PDZK1	RAC2	SLC2A13	TCF4	VCAM1
CHD1	CYP4V2	FIGF	HMOX1	KCND2	MCL1	PECAM1	RACGAP1	SLC2A2	TCF7	VEGFC
CHD7	DAB2	FKBP1A	HNF1B	KCNIP1	MCM2	PFKFB4	RAD23A	SLC31A1	TCL1A	VGLL4
CHDH	DAB2IP	FKBP8	HNF4A	KDM4B	MCM3	PGC	RAD54L	SLC38A5	TCP1	VSNL1
CHEK1	DAPK1	FLOT2	HNRNPA2B1	KIF14	MCM4	PGF	RAD9A	SLC39A6	TDG	VTCN1
CHPT1	DCK	FLRT3	HOXA11	KIF2C	MCM6	PIAS1	RAF1	SLC3A1	TFDP2	WHSC1
CIDEB	DDX10	FLT1	HOXA9	KIT	MCM7	PIAS2	RAG1	SLC3A2	TFF1	WHSC1L1
CKLF	DDX5	FLT3LG	HOXB13	KL	MDM4	PIK3CD	RAMP1	SLC45A3	TFPI2	WISP2
CKMT2	DEGS1	FLT4	HPN	KLB	MFNG	PIK3R3	RARA	SLC5A1	TGFB1	WNT6
CKSB	DISP2	FMO3	HSD17B4	KLK1	MGEA5	PIK3R5	RAS1	SLC5A3	THBS1	WT1
CKS2	DKK1	FMO5	HSPA12A	KLK2	MGMT	PIM1	RASGRF2	SLC7A6	THPO	WWC1
CLCA2	DKK3	FOXA1	HSPA14	KLK3	MKI67	PIM2	RASGRP1	SLC7A7	TIAM1	XCL1
CLIC3	DLC1	FOXC1	HSPA6	KLK5	MKNK1	PKP1	RASGRP2	SLC7A8	TINF2	XRCC5
CMTM1	DLGAP5	FOXE1	HSPB7	KLRB1	MLF1	PLA1A	RBP1	SLC7A9	TLR1	YWHAH
CMTM2	DLK1	FOXL2	HSPD1	KLRD1	MLYCD	PLA2G5	RBPMS2	SLC01B1	TLR2	YY1
CNPY3	DLL3	FOXO3	HSPE1	KLRG1	MME	PLAUR	RELN	SLC01B3	TLR5	ZIC2
COL11A1	DNAJB13	FPR1	IBSP	KNG1	MMP9	PLCB1	RFC3	SLC02A1	TLR8	
COL18A1	DNAJC12	FRZB	ICAM1	KPNA2	MPO	PLCG1	RFC4	SLC02B1	TLX1	
COL1A1	DNAJC9	FUBP1	ICOS	KRT13	MS4A1	PLCG2	RNF149	SMARCA4	TMEM116	
COL27A1	DNMT1	FZD4	ID2	KRT14	MSH2	PLG	RNF4	SMC3	TMEM45A	
COL2A1	DNMT3A	GAB1	IDH2	KRT16	MSH6	PLK1	RPA1	SMC4	TMEM45B	
COL4A6	DNTT	GAS1	IFIT2	KRT17	MSL2	PLK4	RPA3	SMPDL3B	TMPRSS2	
COX5A	DPPA4	GATA1	IFNGR1	KRT5	MKI67	PML	RPL5	SMS	TNC	
CP	DSG3	GATA2	IGF2R	LAMA3	MTHFD1	POLL	RPS6KA1	SNCA	TNFAIP2	
CRADD	DSP	GCLC	IGFBP1	LAMB3	MUC1	POLR2D	RPS6KA5	SNRPB	TNFRSF10C	
CREB3L3	DST	GCLM	IGFBP3	LAMC2	MUTYH	PORCN	RPS7	SOC5	TNFRSF11B	
CREB3L4	DTX4	GGH	IGFBP5	LEFTY1	MXI1	PPAP2A	RRM1	SOD1	TNFRSF1B	
CREB5	DUSP10	GHR	IL10RA	LEFTY2	MYB	PPBP	RRM2	SOD2	TNFSF13B	
CRP	E2F3	GNA11	IL10RB	LEP	MYD88	PPID	RSP01	SORD	TNFSF14	
CRYAA	ECT2	GNAS	IL17RB	LEPR	MYLIP	PPP2R1B	RUNX1T1	SOS1	TNNC2	
CSDE1	EGFR	GNGT2	IL17RD	LFNG	NAMPT	PPP3CA	RUNX3	SOX15	TNNI2	
CSF1R	EGLN2	GNLY	IL1A	LIG4	NANOG	PPP3R1	S100A2	SOX3	TNNI3	
CSF3	EIF4B	GPAM	IL1B	LIPA	NCAPD3	PRC1	SALL4	SP1	TOLLIP	
CSF3R	EIF4EBP1	GPI	IL1RAP	LPCAT1	NCOA2	PRDM2	SCUBE2	SPDEF	TOP1	
CST6	EIF5B	GPR126	IL1RN	LRG1	NCOA4	PRF1	SEC14L2	SPI1	TOP2A	
CSTB	EMP3	GRB10	IL20RB	LRIG1	NEIL3	PRKAG2	SENP1	SPINK1	TOP2B	
CTSB	EN2	GRB2	IL22RA1	LRMP	NFATC3	PRKAR1B	SERPINC1	SPINK5	TP53AIPI	
CTSS	ENO1	GRIA3	IL2RB	LRP2	NKX3-1	PRKCA	SERPINE1	SRA1	TP63	
CX3CR1	EOMES	GRIN2A	IL2RG	LRRK2	NLK	PRKCG	SF3B1	SRSF1	TPO	
CXCL1	ERO1L	GSTM1	IL3RA	LTA	NOV	PRKG1	SFN	SRSF2	TPX2	
CXCL12	ERRFI1	GSTP1	IL6	LTA4H	NOX4	PRL	SHC3	STAB1	TREX1	
CXCL13	ETV1	GUK1	IL6R	LTB	NPM1	PRMT8	SHMT1	STAG2	TRIM28	
CXCL14	EXOSC8	GYS2	IL7R	LTBP1	NPPB	PROK1	SIAH1	STAT4	TRRAP	
CXCL16	EZH2	GZMA	INS	LYN	NQO1	PROK2	SLA	STAT5B	TSC22D1	
CXCL6	F10	GZMB	INSR	MAD2L1	NR4A3	PSG2	SLC10A1	STAT6	TSHR	
CXCR1	F2	GZMH	IRF1	MADD	NUSAP1	PSIP1	SLC10A2	STC1	TSPAN13	
CXCR2	FABP1	H2AFX	IRF2	MAGED2	OAZ1	PSMD7	SLC11A1	STC2	TSPAN14	
CXCR4	FABP7	HDAC2	IRF3	MAP2K3	OLR1	PSMG1	SLC15A1	STEAP1	TSPAN7	
CXXC5	FAM117B	HDAC6	IRF4	MAP3K12	ORM1	PSRC1	SLC16A3	STK36	TTK	
CYBA	FASN	HDAC7	IRF7	MAP3K2	PA4HB	PTCRA	SLC19A1	STMN1	TXNL1	
CYBB	FBP1	HELLS	IRF8	MAP3K3	PAICS	PTEN	SLC22A1	STRADB	TXNRD1	
CYP19A1	FBX05	HGF	IRF9	MAP3K5	PAK1	PTGR1	SLC22A2	STX1A	TYK2	
CYP1A1	FBXW7	HHEX	ITGA4	MAP4K1	PAK1IP1	PTGS1	SLC22A6	SULT2A1	TYMP	
CYP1A2	FCER2	HJURP	ITGA8	MAPK1	PAX6	PTPN5	SLC22A7	SUMO1	TYMS	
CYP2A6	FEN1	HLA-E	ITGAM	MAPK10	PAX8	PTPRC	SLC22A8	SYK	UBB	
CYP2C19	FGF14	HMGAI1	ITGB2	MAPK14	PBX1	PYCARD	SLC22A9	T	UBE2C	
CYP2C8	FGF18	HMGB1	ITGB7	MAPK9	PCNA	PYCR1	SLC25A13	TAL1	UBE2I	

# Annotated Gene List

## HTG EdgeSeq

### Oncology Biomarker Panel

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#### WNT Pathway

APC	CHSY1	DKK1	FRZB	FZD8	LRP6	NFATC1	RHOA	VANGL2	WNT3	WNT8A
AXIN1	CSNK1A1	DKK3	FZD1	FZD9	MAPK8	NKD1	RUVBL1	WIF1	WNT3A	WNT
AXIN2	CTNNB1	DVL1	FZD2	GSK3B	MMP7	NLK	SFRP1	WISP1	WNT4	
BOD1	CTNNBIP1	DVL2	FZD3	HSPA12A	MT1A	PITX2	SFRP4	WNT1	WNT5A	
BTRC	CXADR	EP300	FZD4	JUN	MTFF1	PORCN	SKP2	WNT10A	WNT5B	
CALM1	CYP4V2	FBXW11	FZD5	KREMEN1	MTSS1	PPARD	SOX17	WNT11	WNT6	
CCND1	DAAM1	FGF4	FZD6	LEF1	MYC	PRICKLE1	TCF7	WNT2	WNT7A	
CCND2	DAB2	FOSL1	FZD7	LRP5	NAV2	PRMT6	TCF7L1	WNT2B	WNT7B	

#### OBP Probes

A2M	ADIPOQ	ANAPC2	ATF2	BCL2L1	C17orf53	CARM1	CCNB3	CD40LG	CDKN2A	CLCF1	CREB3L4
ABCA2	ADIPOR1	ANG	ATF4	BCL2L10	C19orf40	CASP1	CCNC	CD44	CDKN2B	CLDN3	CREB5
ABCA3	ADIPOR2	ANGPT1	ATF6	BCL2L11	C1orf106	CASP10	CCND1	CD47	CDKN2C	CLIC1	CREBBP
ABCA4	ADM	ANGPT2	ATF6B	BCL2L2	C1orf159	CASP12	CCND2	CD5	CDKN2D	CLIC3	CRK
ABCA5	ADORA2A	ANGPTL1	ATG12	BCL3	C1orf86	CASP14	CCND3	CD52	CDKN3	CMC2	CRLF2
ABCA9	ADORA2B	ANGPTL4	ATG13	BCL6	C1QA	CASP2	CCNE1	CD55	CDON	CMKLR1	CRLS1
ABCB11	ADRA1A	ANKRD37	ATG16L1	BCOR	C1S	CASP3	CCNE2	CD59	CDX2	CMTM1	CRP
ABCB4	ADRA1B	ANLN	ATG3	BCR	C3	CASP4	CCNF	CD63	CEACAM3	CMTM2	CRTAC1
ABCB5	ADRA1D	ANPEP	ATG5	BDNF	C3AR1	CASP5	CCNG1	CD68	CEACAM5	CMTM3	CRTC2
ABCB6	ADRA2A	ANXA1	ATG7	BECN1	C5	CASP6	CCNG2	CD70	CEACAM7	CMTM4	CRY1
ABCC1	ADRA2B	ANXA2	ATM	BFAR	C5AR1	CASP7	CCNH	CD74	CEBPA	CNIH4	CRYAA
ABCC10	ADRA2C	ANXA3	ATP5A1	BHLHE40	C5orf55	CASP8	CCNO	CD79A	CEBPB	CNOT3	CRYAB
ABCC11	AFF1	ANXA8	ATP5F1	BID	CAI2	CASP8AP2	CCNT1	CD80	CEBPD	CNPY1	CSDE1
ABCC12	AGER	AP2B1	ATP5G1	BIK	CA9	CASP9	CCR1	CD83	CEBPE	CNPY2	CSF1
ABCC2	AGFG1	APAF1	ATP6V0C	BIRC2	CACNA1C	CAV1	CCR10	CD86	CECR6	CNPY3	CSF1R
ABCC3	AGGF1	APBB1	ATP6V1G2	BIRC3	CACNA1D	CAV2	CCR2	CD8A	CELSR2	CNPY4	CSF2
ABCC4	AGT	APC	ATP7A	BIRC5	CACNA1E	CBL	CCR3	CDC14A	CENPF	CNTF	CSF3
ABCC5	AHNAK	APCS	ATP7B	BIRC6	CACNA1G	CBLC	CCR4	CDC14B	CENPN	CNTFR	CSF3R
ABCC6	AHNAK2	APEX1	ATR	BIRC7	CACNA1H	CBX3	CCR5	CDC16	CEP55	COL11A1	CSNK1A1
ABCD1	AHR	APEX2	ATRX	BLM	CACNA2D1	CBX5	CCR6	CDC20	CES1	COL11A2	CSNK1E
ABCD3	AHRR	APH1B	ATXN1	BLVRA	CACNA2D2	CCBL2	CCR7	CDC25A	CES2	COL17A1	CSNK2A1
ABCD4	AICDA	APOC2	ATXN3	BMF	CACNA2D3	CCDC103	CCR8	CDC25B	CFLAR	COL18A1	CSNK2B
ABCF1	AIFM1	APOC4	AURKA	BMI1	CACNA2D4	CCL1	CCR9	CDC25C	CFTR	COL1A1	CST6
ABCG2	AIMP2	APOL3	AURKB	BMP1	CACNB2	CCL11	CCRL2	CDC34	CHAD	COL1A2	CSTB
ABCG8	AK1	APP	AURKC	BMP2	CACNB3	CCL13	CCS	CDC42	CHD1	COL27A1	CTGF
ABHD2	AK2	APPPB2	AXIN1	BMP4	CACNB4	CCL14	CCT2	CDC42BPA	CHD7	COL2A1	CTLA4
ACACA	AK3	AQP1	AXIN2	BMP5	CACNG1	CCL15	CCT3	CDC6	CHDH	COL3A1	CTNNA1
ACACB	AKAP1	AQP2	AXL	BMP6	CACNG4	CCL16	CCT4	CDC7	CHEK1	COL4A2	CTNNB1
ACADS	AKR1B1	AQP4	B3GNT8	BMP7	CACNG6	CCL17	CCT5	CDCA7	CHEK2	COL4A3	CTNNBIP1
ACKR1	AKR1C3	AQP7	BAD	BMP8A	CACYBP	CCL18	CCT6A	CDH1	CHGA	COL4A4	CTNND2
ACKR2	AKT1	AQP9	BAG1	BMP8B	CAD	CCL19	CCT6B	CDH13	CHI3L1	COL4A5	CTPS1
ACKR3	AKT1S1	AR	BAG2	BMPR1B	CADM1	CCL2	CCT7	CDH15	CHI3L2	COL4A6	CTSA
ACKR4	AKT2	ARAF	BAG3	BNIP2	CALD1	CCL20	CD14	CDH2	CHMP4B	COL5A1	CTSB
ACLY	AKT3	AREG	BAG4	BNIP3	CALM1	CCL21	CD160	CDH3	CHPT1	COL5A2	CTSC
ACSL3	ALAS1	ARHGAP44	BAG5	BNIP3L	CALML3	CCL22	CD163	CDH5	CHRNA1	COL6A6	CTSD
ACSL4	ALB	ARHGFE16	BAI1	BOC	CALML5	CCL23	CD19	CDK1	CHRN1	COL9A3	CTSH
ACSL5	ALCAM	ARID1A	BAIAP3	BOD1	CALML6	CCL24	CD2	CDK16	CHSY1	COMMD4	CTSL
ACTA2	ALDH1A1	ARID1B	BAK1	BOK	CALR	CCL25	CD209	CDK2	CHUK	COMP	CTSS
ACTB	ALDH1A3	ARID2	BAMBI	BRAF	CAMK2B	CCL26	CD22	CDK4	CIC	COPS5	CTSV
ACTR1B	ALDH2	ARMC1	BAP1	BRCA1	CAMK2N1	CCL27	CD24	CDK5	CIDEA	COX5A	CUL2
ACTR2	ALDH4A1	ARNT	BATF	BRCA2	CAMKK1	CCL28	CD27	CDK5R1	CIDEB	COX7B	CUL3
ACTR3B	ALDOC	ARNT2	BAX	BRIP1	CAMKK2	CCL3	CD274	CDK5RAP1	CIRBP	CP	CX3CL1
ACVR1B	ALK	ASB13	BBC3	BTC	CAPN1	CCL4	CD276	CDK6	CITFD2	CPT1A	CX3CR1
ACVR1C	ALKBH2	ASB16-AS1	BBS4	BTG1	CAPN2	CCL5	CD28	CDK7	CKB	CPT1B	CXADR
ACVR2A	ALKBH3	ASB9	BCAR1	BTG2	CAPN3	CCL7	CD33	CDK8	CKLF	CPT1C	CXCL1
ADAM17	ALPL	ASNS	BCAT1	BTG3	CAPN5	CCL8	CD34	CDK9	CKMT1A	CPT2	CXCL10
ADAM23	AMER1	ASPM	BCCIP	BTK	CAPN6	CCNA1	CD38	CDKL5	CKMT2	CRADD	CXCL11
ADAMTS1	AMFR	ASXL1	BCL10	BTRC	CAPN7	CCNA2	CD3D	CDKN1A	CKS1B	CREB1	CXCL12
ADAR	AMH	ATAD2	BCL2	BUB1	CAPNS1	CCNB1	CD4	CDKN1B	CKS2	CREB3L1	CXCL13
ADCK3	AMOT	ATF1	BCL2A1	BUB1B	CARD11	CCNB2	CD40	CDKN1C	CLCA2	CREB3L3	CXCL14



OBP Probes Continued

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CXCL16	DESI1	DNMT3A	ELMO1	EYA1	FGF5	FZD1	GNG4	HDAC8	HSPA1L	IL10RB	IRAK3
CXCL2	DFFA	DNTT	EML4	EZH2	FGF6	FZD10	GNG7	HECTD4	HSPA2	IL11	IRF1
CXCL3	DHCR24	DPPA2	EMP1	EZR	FGF7	FZD2	GNGT1	HELLS	HSPA4	IL11RA	IRF2
CXCL5	DHH	DPPA3	EMP3	F10	FGF8	FZD3	GNGT2	HERC3	HSPA4L	IL12A	IRF3
CXCL6	DHX58	DPPA4	EN2	F11R	FGF9	FZD4	GNL3	HERPUD1	HSPA5	IL12B	IRF4
CXCL8	DIABLO	DPPA5	ENDOD1	F2	FGFBP1	FZD5	GNLY	HES1	HSPA6	IL12RB2	IRF5
CXCL9	DIAPH3	DPYSL4	ENDOG	F2R	FGFR1	FZD6	GPAM	HES5	HSPA8	IL13	IRF6
CXCR1	DICER1	DSC2	ENG	F3	FGFR10P	FZD7	GPAT2	HEY1	HSPA9	IL13RA2	IRF7
CXCR2	DISP1	DSG3	ENO1	F8	FGFR2	FZD8	GPC4	HEY2	HSPB1	IL15	IRF8
CXCR3	DISP2	DSP	ENTPDI	FABP1	FGFR3	FZD9	GPD2	HEYL	HSPB2	IL16	IRF9
CXCR4	DKC1	DST	EOMES	FABP4	FGFR4	GAA	GPER1	HGF	HSPB3	IL17A	IRGM
CXCR5	DKK1	DTX1	EP300	FABP7	FGFRL1	GAB1	GPI	HHAT	HSPB6	IL17F	IRS1
CXCR6	DKK2	DTX3	EPCAM	FADD	FGL2	GABBR2	GNPMB	HHEX	HSPB7	IL17RB	IRS2
CXXC4	DKK3	DTX4	EPGN	FAF1	FHIT	GADD45A	GPR126	HHIP	HSPB8	IL17RD	ISG15
CXXC5	DKK4	DUSP1	EPHA2	FAM105A	FIGF	GADD45B	GPR160	HIC1	HSPBAP1	IL18	ISL1
CYBA	DLC1	DUSP10	EPHB4	FAM117B	FKBP1A	GADD45G	GPR17	HIF1A	HSPD1	IL19	ITGA2
CYBB	DLGAP5	DUSP2	EPO	FAM133A	FKBP5	GAL	GPR180	HIF1AN	HSPE1	IL1A	ITGA3
CYCS	DLK1	DUSP4	EPOR	FAM162A	FKBP8	GALNT3	GPSM2	HIF3A	HSPH1	IL1B	ITGA4
CYLD	DLL1	DUSP5	EPS8	FAM213A	FLII	GALNT5	GRB10	HIST1H3H	HTT	IL1R1	ITGA5
CYP19A1	DLL3	DUSP6	ER-013	FAM64A	FLJ10474	GAMT	GRB2	HJURP	HUS1	IL1R2	ITGA6
CYP1A1	DLL4	DUSP8	ER-028	FAM83B	FLNA	GAPDH	GREM1	HK2	IBSP	IL1RAP	ITGA7
CYP1A2	DMC1	DVL1	ER-067	FANCA	FLNC	GAS1	GRIA3	HLA-A	ICAM1	IL1RN	ITGA8
CYP1B1	DMD	DVL2	ER-099	FANCB	FLOT2	GAS6	GRIN1	HLA-B	ICOS	IL2	ITGA9
CYP2A6	DNAJA1	E2F1	ER-109	FANCC	FLRT1	GATA1	GRIN2A	HLA-E	ID1	IL20	ITGAM
CYP2B6	DNAJA2	E2F3	ER-120	FANCE	FLRT2	GATA2	GRIN2B	HMGAI	ID2	IL20RA	ITGAV
CYP2C19	DNAJA3	E2F5	ER-147	FANCF	FLRT3	GATA3	GRN	HMGAI2	ID3	IL20RB	ITGB1
CYP2C8	DNAJA4	EAF2	ER-154	FANCG	FLT1	GATA4	GRP	HMGB1	ID4	IL21	ITGB2
CYP2C9	DNAJB1	EBAG9	ER-160	FANCL	FLT3	GATA5	GSC	HMGB2	IDH1	IL22	ITGB3
CYP2D6	DNAJB11	EBF4	ER-171	FAS	FLT3LG	GATA6	GSK3A	HMGB3	IDH2	IL22RA1	ITGB4
CYP2U1	DNAJB12	ECI2	ERBB2	FASLG	FLT4	GBE1	GSK3B	HMGCR	IDO1	IL22RA2	ITGB6
CYP3A4	DNAJB13	ECT2	ERBB3	FASN	FM03	GBP1	GSN	HMGCS2	IDO2	IL23A	ITGB7
CYP3A5	DNAJB14	EDA2R	ERBB4	FAT4	FM05	GBP2	GSR	HMGXB3	IER3	IL23R	ITGB8
CYP4A22	DNAJB2	EDIL3	ERCC1	FBN1	FN1	GBP7	GSTA2	HMOX1	IFI27	IL24	ITLN2
CYP4V2	DNAJB5	EDN1	ERCC2	FBP1	FOS	GCLC	GSTM1	HNF1A	IFIT2	IL27	ITM2A
CYP7A1	DNAJB6	EEF1G	ERCC3	FBX05	FOSL1	GCML	GSTM3	HNF1B	IFNA2	IL2RA	ITPKB
CYR61	DNAJB7	EEF2K	ERCC4	FBXW11	FOXA1	GDAP1	GSTP1	HNF4A	IFNA5	IL2RB	JAG1
DAAM1	DNAJB8	EFNA1	ERCC5	FBXW7	FOXA2	GDF3	GTTF2H3	HNRNPA1	IFNAR1	IL2RG	JAG2
DAB2	DNAJB9	EFNA2	ERCC6	FCER2	FOXC1	GDF6	GTSE1	HNRNPA2B1	IFNB1	IL3	JAK1
DAB2IP	DNAJC1	EFNA3	ERCC8	FCGR1A	FOXC2	GEMIN2	GUCY1A3	HNRNPU	IFNG	IL33	JAK2
DACH1	DNAJC10	EFNA5	EREG	FCGR1B	FOXO3	GFAP	GUK1	HOXA10	IFNGR1	IL3RA	JAK3
DAPK1	DNAJC11	EFNB1	ERG	FEM1B	FOXO1	GFRA1	GYS1	HOXA11	IFNL3	IL4	JMJD1C
DAPL1	DNAJC12	EFNB2	ERO1L	FEN1	FOXI1	GGH	GYS2	HOXA9	IFNW1	IL4R	JMJD6
DAXX	DNAJC13	EGF	ERRF1	FES	FOXL2	GHR	GZMA	HOXB13	IFRD1	IL5	JPH3
DBI	DNAJC14	EGFR	ESM1	FGF1	FOXO1	GJA1	GZMB	HOXD1	IFT52	IL5RA	JUN
DCK	DNAJC15	EGLN1	ESR1	FGF10	FOXO3	GLI1	GZMH	HPGD	IGF1	IL6	JUNB
DDB2	DNAJC16	EGLN2	ESR2	FGF11	FOXO4	GLI2	H2AFX	HPN	IGF1R	IL6R	JUND
DDIT3	DNAJC17	EGR1	ESRRB	FGF12	FOXP1	GLI3	H3F3A	HPSE	IGF2	IL6ST	KAT2B
DDIT4	DNAJC18	EGR3	ETFA	FGF13	FOXP3	GLIS3	H3F3C	HRAS	IGF2R	IL7	KAT5
DDR1	DNAJC21	EI24	ETS1	FGF14	FOXRED1	GLUD1	HAND1	HRK	IGFBP1	IL7R	KATNBL1
DDX10	DNAJC22	EIF2AK2	ETS2	FGF16	FPR1	GLUL	HAVCR2	HSD17B12	IGFBP2	IL9	KCND2
DDX17	DNAJC3	EIF4A1	ETV1	FGF17	FRMD6	GM2A	HBEGF	HSD17B4	IGFBP3	ILK	KCNIP1
DDX39B	DNAJC4	EIF4B	ETV2	FGF18	FRS2	GML	HDAC1	HSF1	IGFBP4	INFA-Family	KCNK5
DDX5	DNAJC5	EIF4E	ETV4	FGF19	FRS3	GMPS	HDAC10	HSF2	IGFBP5	INHBA	KCTD11
DDX58	DNAJC5B	EIF4EBP1	ETV5	FGF2	FRZB	GNA11	HDAC11	HSF4	IGFBP6	INHBB	KDM1A
DDX59	DNAJC5G	EIF4G1	ETV7	FGF20	FST	GNAI3	HDAC2	HSP90AA1	IGFBP7	INPP5J	KDM3A
DEFB1	DNAJC6	EIF5B	EVL	FGF21	FTH1	GNAQ	HDAC3	HSP90B1	IHH	INS	KDM3B
DEGS1	DNAJC7	EIF6	EXO1	FGF22	FUBP1	GNAS	HDAC4	HSPA12A	IKBKB	INSR	KDM4B
DENND4A	DNAJC8	ELAVL1	EXOC3	FGF23	FUS	GNAZ	HDAC5	HSPA14	IKBKG	INTS7	KDM5B
DEPDC1	DNAJC9	ELK1	EXOSC8	FGF3	FUT8	GNG11	HDAC6	HSPA1A	IL10	IRAK1	KDM5C
DES	DNMT1	ELL2	EXT1	FGF4	FYN	GNG12	HDAC7	HSPA1B	IL10RA	IRAK2	KDM6A

# Annotated Gene List

## HTG EdgeSeq

### Oncology Biomarker Panel



#### OBP Probes Continued

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KDM7A	LEF1	MAGEB2	MCM3	MSH6	NES	NRG3	PCK1	PIR	PPID	PSRC1	RARA
KDR	LEFTY1	MAGEB3	MCM4	MSI1	NF1	NRG4	PCNA	PITRM1	PPM1D	PTCH1	RARB
KEAP1	LEFTY2	MAGEC1	MCM5	MSL2	NF2	NRIP1	PCNX	PITX2	PPP1R15A	PTCH2	RASA1
KIF14	LEP	MAGEC2	MCM6	MSN	NFAT5	NRP1	PCOLCE	PKM	PPP2CA	PTCHD1	RASA4
KIF2C	LEPR	MAGED1	MCM7	MSR1	NFATC1	NRP2	PCSK6	PKMYT1	PPP2CB	PTCHD2	RASAL1
KIF3A	LETMD1	MAGED2	MDC1	MST1	NFATC3	NSD1	PDCD1	PKP1	PPP2R1A	PTCHD3	RASD1
KIF3B	LFNG	MAGEE1	MDK	MST1R	NFATC4	NT5E	PDCD1LG2	PLA1A	PPP2R1B	PTCRA	RASGRF1
KIF5B	LGALS1	MAGEF1	MDM2	MSTN	NFE2L2	NTF3	PDGFA	PLA2G10	PPP2R2B	PTDSS1	RASGRF2
KIT	LGALS3	MAGEL2	MDM4	MT1A	NFE2L3	NTHL1	PDGFB	PLA2G2A	PPP2R2C	PTEN	RASGRP1
KITLG	LIF	MALT1	MECOM	MT1X	NFKB1	NTN3	PDGFC	PLA2G3	PPP2R4	PTGR1	RASGRP2
KL	LIFR	MAML1	MED1	MT2A	NFKB2	NTRK1	PDGFD	PLA2G4A	PPP3CA	PTGS1	RASSF1
KLB	LIG1	MAML2	MED12	MTA1	NFKBIA	NTRK2	PDGFRA	PLA2G4C	PPP3CB	PTGS2	RASSF7
KLF12	LIG3	MAOA	MED23	MTCP1	NFKBIE	NUDT13	PDGFRB	PLA2G4E	PPP3CC	PTHLH	RB1
KLF17	LIG4	MAOB	MED24	MTDH	NFKBIZ	NUF2	PDIA4	PLA2G4F	PPP3R1	PTK2	RB1CC1
KLF4	LIN28A	MAP1B	MEF2C	MTFP1	NGF	NUMB	PDK1	PLA2G5	PPP3R2	PTN	RBBP8
KLHDC10	LIN28B	MAP1LC3A	MEIS1	MTHFD1	NGFR	NUMBL	PDK2	PLAT	PRAME	PTP4A1	RBL1
KLK1	LIN9	MAP2K1	MELK	MTMR2	NGFRAP1	NUP62	PDLIM7	PLAU	PRC1	PTPN1	RBL2
KLK2	LINC00886	MAP2K2	MEN1	MTOR	NKD1	NUPR1	PDPK1	PLAUR	PRDM1	PTPN11	RBM10
KLK3	LIPA	MAP2K3	MERTK	MTSS1	NKX2-1	NUSAP1	PDPN	PLCB1	PRDM14	PTPN5	RBP1
KLK4	LIPE	MAP2K4	MESPI1	MUC1	NKX2-5	OAS1	PDZK1	PLCB4	PRDM2	PTPRC	RBPJ
KLK5	LMO2	MAP2K5	MET	MUTYH	NKX3-1	OASL	PECAM1	PLCE1	PRDX6	PTPRR	RBPMS2
KLRB1	LOX	MAP2K6	MFNG	MVP	NLK	OAZ1	PELP1	PLCG1	PRF1	PTTG1	RBX1
KLRD1	LOXL1	MAP2K7	MGA	MX1	NLRP3	OCLN	PER1	PLCG2	PRICKLE1	PTTG2	RECCQL5
KLRG1	LPCAT1	MAP3K1	MGAT4A	MXI1	NME1	ODC1	PEX12	PLD1	PRKAA1	PUS1	REL
KMT2B	LPL	MAP3K12	MGEA5	MYB	NME7	OGG1	PF4	PLEK2	PRKAA2	PVR	RELA
KMT2C	LRG1	MAP3K13	MGMT	MYBL1	NMU	OLIG2	PF4V1	PLG	PRKAB1	PYCARD	RELB
KMT2D	LRIG1	MAP3K14	MGST1	MYBL2	NNMT	OLR1	PFDN1	PLK1	PRKAB2	PYCR1	RELN
KNG1	LRMP	MAP3K2	MIA	MYC	NOD1	OMD	PFDN2	PLK2	PRKACA	PYGL	REST
KNTC1	LRP12	MAP3K3	MIF	MYCL	NOD2	OPCML	PFKFB1	PLK3	PRKACB	QDPR	RET
KPNA2	LRP1B	MAP3K4	MIXL1	MYCN	NODAL	ORTOJ3	PFKFB2	PLK4	PRKACG	QSOX2	RFC1
KRAS	LRP2	MAP3K5	MKI67	MYD88	NOG	ORC6	PFKFB3	PMAIP1	PRKAG1	RAB23	RFC3
KREMENT1	LRP5	MAP3K8	MKNK1	MYLIP	NOL3	ORM1	PFKFB4	PMEPAT1	PRKAG2	RAB25	RFC4
KRT13	LRP6	MAP4K1	MLF1	MYO1D	NOLC1	ORM2	PFKL	PML	PRKAG3	RAB27B	RGS2
KRT14	LRRFIP2	MAP7D1	MLH1	NAB2	NOS2	OSM	PGC	PMS1	PRKAR1A	RAB4A	RHEB
KRT16	LRRK2	MAPK1	MLH3	NAIP	NOS3	OTX2	PGF	PMS2	PRKAR1B	RAB6B	RHOA
KRT17	LTA	MAPK10	MLLT3	NAMPT	NOTCH1	P4HA1	PGR	PMS2P3	PRKAR2A	RAC1	RHOB
KRT18	LTA4H	MAPK11	MLLT4	NANOG	NOTCH2	P4HB	PHB	PNKP	PRKAR2B	RAC2	RHOU
KRT19	LTB	MAPK12	MLPH	NAP1L1	NOTCH4	PA2G4	PHB2	PNPLA2	PRKCA	RAC3	RIF1
KRT5	LTBP1	MAPK13	MLYCD	NASP	NOV	PABPC1	PHF6	POLB	PRKCB	RACGAP1	RIN1
KRT6A	LTBR	MAPK14	MME	NAT1	NOX1	PAF1	PHGDH	POLD1	PRKCD	RAD1	RIPK1
KRT7	LTF	MAPK3	MMP11	NAT2	NOX4	PAG1	PIAS1	POLD2	PRKCE	RAD17	RIPK2
KRT8	LTN1	MAPK6	MMP14	NAT8L	NPC1	PAICS	PIAS2	POLD3	PRKCG	RAD18	RIPK3
KSR1	LY96	MAPK7	MMP2	NAV2	NPM1	PAK1	PIAS3	POLD4	PRKCZ	RAD21	RIT1
LTCAM	LYN	MAPK8	MMP3	NBN	NPM2	PAK1IP1	PIAS4	POLE2	PRKDC	RAD23A	RND2
LAG3	LYVE1	MAPK8IP2	MMP7	NCAM1	NPPB	PAK3	PIDD1	POLL	PRKG1	RAD23B	RNF149
LAMA1	LYZ	MAPK9	MMP9	NCAPD3	NPR1	PAK7	PIK3C2A	POLR2D	PRKX	RAD50	RNF4
LAMA3	MACC1	MAPKAPK2	MMS19	NCK2	NQO1	PALB2	PIK3C3	POLR2H	PRL	RAD51	RNF43
LAMA5	MAD2L1	MAPKAPK3	MNAT1	NCL	NR0B1	PALM2(AKAP2)	PIK3CA	POLR2J	PRLR	RAD51B	RNH1
LAMB3	MADCAM1	MAPKAPK5	MOB1B	NCOA1	NR0B2	PARK7	PIK3CB	PORCN	PRMT1	RAD51C	RORC
LAMB4	MADD	MAPKAPK5-	MOS	NCOA2	NR1H3	PARP1	PIK3CD	POU5F1	PRMT6	RAD51D	ROS1
LAMC2	MAF	AS1	MPG	NCOA3	NR1H4	PARP2	PIK3CG	PPAP2A	PRMT8	RAD52	RPA1
LAMC3	MAFF	MAPRE2	MPL	NCOA4	NR1I2	PARP3	PIK3R1	PPAP2B	PROK1	RAD54L	RPA3
LAMP5	MAG	MAPT	MPO	NCOR1	NR3C1	PARP4	PIK3R2	PPARD	PROK2	RAD9A	RPL13
LAMTOR3	MAGEA1	MAT2A	MRE11A	NCOR2	NR4A1	PAX3	PIK3R3	PPARG	PROM1	RAF1	RPL35
LAT	MAGEA10/	MAX	MRPL13	NDC80	NR4A3	PAX5	PIK3R5	PPARGC1A	PRR15L	RAG1	RPL38
LATS1	MAGEA5	MAZ	MS4A1	NDRG1	NR5A2	PAX6	PIM1	PPARGC1B	PSG2	RALA	RPL5
LATS2	MAGEA11	MBL2	MSH2	NEIL1	NR6A1	PAX8	PIM2	PPAT	PSIP1	RAMP1	RPL6
LCN1	MAGEA2	MCCC1	MSH3	NEIL2	NRAS	PBRM1	PIM3	PPBP	PSMD2	RAMP2	RPRM
LCN2	MAGEA4	MCL1	MSH4	NEIL3	NRG1	PBX1	PIN1	PPIA	PSMD7	RAMP3	RPS4X
LECT1	MAGEB1	MCM2	MSH5	NEK2	NRG2	PBX3	PINX1	PPIB	PSMG1	RAP1A	RPS6KA1

OBP Probes Continued

RPS6KA5	SFRP2	SLC38A5	SOX17	SUV39H2	TIMP1	TOLLIP	UBE3A	WWC1
RPS6KA6	SFRP4	SLC39A6	SOX2	SWAP70	TIMP2	TOMM40	UBXN2A	WWOX
RPS6KB1	SGK1	SLC3A1	SOX3	SYCP2	TIMP3	TOP1	UGT1A1	XAB2
RPS6KB2	SGK2	SLC3A2	SOX7	SYK	TINF2	TOP2A	UGT1A4	XBP1
RPS7	SH2B1	SLC45A3	SOX9	SYNCRIP	TIPARP	TOP2B	UGT1A6	XCL1
RPTOR	SH3PXD2A	SLC5A1	SP1	SYP	TIRAP	TOP3A	UGT2B7	XCL2
RRAS2	SHC1	SLC5A3	SPARC	T	TK1	TOP3B	ULK1	XCR1
RRM1	SHC2	SLC5A4	SPATA2	TADA3	TLR1	TOR1A	UNG	XIAP
RRM2	SHC3	SLC7A11	SPC25	TAGLN	TLR2	TP53	UQCRFS1	XPA
RRM2B	SHC4	SLC7A5	SPDEF	TAL1	TLR3	TP53AIP1	USF1	XPC
RSP01	SHH	SLC7A6	SPEF1	TAP1	TLR4	TP53BP2	USF2	XRCC1
RSP02	SHMT1	SLC7A7	SPHK1	TAP2	TLR5	TP53I3	USMG5	XRCC2
RTN1	SIAH1	SLC7A8	SPI1	TAT	TLR6	TP63	UTF1	XRCC3
RTN4RL1	SIL1	SLC7A9	SPINK1	TAZ	TLR7	TP73	UTY	XRCC4
RUNDC1	SIN3A	SLC01A2	SPINK5	TBK1	TLR8	TPD52	VAMP8	XRCC5
RUNX1	SIN3B	SLC01B1	SPOP	TBL1X	TLR9	TPI1	VANGL2	XRCC6
RUNX1T1	SIRT1	SLC01B3	SPP1	TBL1XR1	TLX1	TPO	VAPA	XRCC6BP1
RUNX2	SIRT2	SLC02A1	SPRY1	TBL1Y	TMEFF1	TPX2	VASH1	YAP1
RUNX3	SIRT3	SLC02B1	SPRY2	TBP	TMEM116	TRADD	VCAM1	YBX3
RUVBL1	SIRT4	SLC03A1	SPRY4	TBX21	TMEM123	TRAF2	VCAN	YWHAH
RXRG	SIX1	SLC04A1	SQSTM1	TBX3	TMEM132A	TRAF3	VDAC1	YWHAZ
S100A2	SKP2	SLIT2	SRA1	TCF3	TMEM45A	TRAF6	VDAC2	YY1
S100A4	SLA	SLK	SRC	TCF4	TMEM45B	TRAF7	VDR	ZAK
S100A6	SLAMF7	SMAD1	SREBF1	TCF7	TMEM57	TREX1	VEGFA	ZBTB10
S100A7A	SLC10A1	SMAD2	SRF	TCF7L1	TMEM74B	TRIB1	VEGFB	ZBTB16
S100A8	SLC10A2	SMAD3	SRM	TCLIA	TMPRSS2	TRIM28	VEGFC	ZBTB32
S100B	SLC11A1	SMAD4	SRSF1	TCL1B	TMSB10	TRIM72	VGLL4	ZEB1
S1PR1	SLC15A1	SMAD5	SRSF2	TCP1	TNC	TRIP13	VHL	ZEB2
SACS	SLC15A2	SMAD7	SSX1	TDG	TNF	TRIP4	VIPR1	ZFP36L1
SAFB	SLC16A1	SMAD9	STAB1	TDGF1	TNFAIP2	TRRAP	VPS13A	ZFP42
SALL4	SLC16A2	SMARCA4	STAG2	TEK	TNFAIP3	TSC1	VSNL1	ZFX
SAP30	SLC16A3	SMARCB1	STAM	TEP1	TNFRSF10A	TSC2	VTCN1	ZHX2
SAV1	SLC19A1	SMC1A	STAT1	TERF1	TNFRSF10B	TSC22D1	WASL	ZIC1
SCAPER	SLC19A2	SMC1B	STAT2	TERF2IP	TNFRSF10C	TSC22D3	WEE1	ZIC2
SCN1A	SLC19A3	SMC3	STAT3	TERT	TNFRSF10D	TSHR	WHSC1	ZNF189
SCN3A	SLC22A1	SMC4	STAT4	TESC	TNFRSF11B	TSLP	WHSC1L1	ZNF385B
SCUBE1	SLC22A2	SMO	STAT5A	TET2	TNFRSF12A	TSPAN13	WIF1	ZNF420
SCUBE2	SLC22A3	SMPDL3B	STAT5B	TFDP1	TNFRSF14	TSPAN14	WIP1	ZNF502
SEC14L2	SLC22A6	SMS	STAT6	TFDP2	TNFRSF17	TSPAN7	WISP1	ZNF552
SEC22C	SLC22A7	SMUG1	STC1	TFE1	TNFRSF1B	TSPYL5	WISP2	ZNF589
SEC61G	SLC22A8	SNAI1	STC2	TFE3	TNFRSF21	TTC9	WNT1	ZNF805
SELE	SLC22A9	SNAI2	STEAP1	TFPI2	TNFRSF25	TTF1	WNT10A	
SELM	SLC25A13	SNAI3	STEAP4	TGFA	TNFRSF4	TTK	WNT10B	
SENP1	SLC25A3	SNCA	STK11	TGFB1	TNFRSF8	TUBB3	WNT11	
SERPINA3	SLC25A4	SNRPB	STK3	TGFB2	TNFRSF9	TWIST1	WNT16	
SERPINA9	SLC26A2	SOC31	STK32A	TGFB3	TNFSF10	TWIST2	WNT2	
SERPINB2	SLC27A4	SOC32	STK36	TGFB1	TNFSF11	TXN	WNT2B	
SERPINB5	SLC28A1	SOC33	STK39	TGFBR1	TNFSF13B	TXNIP	WNT3	
SERPINC1	SLC28A2	SOC34	STMN1	TGFBR2	TNFSF14	TXNL1	WNT3A	
SERPINE1	SLC28A3	SOC35	STRADA	THAP11	TNFSF15	TXNL4B	WNT4	
SERPINF1	SLC29A1	SOD1	STRADB	THBS1	TNFSF8	TXNRD1	WNT5A	
SERPINH1	SLC29A2	SOD2	STUB1	THBS2	TNFSF9	TYK2	WNT5B	
SERTAD1	SLC2A1	SORBS1	STX11	THBS4	TNKS	TYMP	WNT6	
SETBP1	SLC2A13	SORD	STX1A	THEM4	TNKS2	TYMS	WNT7A	
SETD2	SLC2A14	SORT1	SUFU	THPO	TNN	U2AF1	WNT7B	
SF3A1	SLC2A2	SOS1	SULT1A1	THY1	TNNC2	UBB	WNT8A	
SF3B1	SLC2A3	SOS2	SULT1B1	TIAM1	TNNI2	UBE2C	WNT8B	
SF3B5	SLC2A4	SOST	SULT2A1	TICAM1	TNNI3	UBE2I	WNT9A	
SFN	SLC31A1	SOX10	SUMO1	TIE1	TNR	UBE2T	WNT9B	
SFRP1	SLC38A2	SOX15	SUSD3	TIFA	TNXB	UBE2Z	WT1	

