TEMPUS xO GENE PANEL

Targeted panel of 1714 genes | Tumor DNA Coverage: 500x | RNA reads: 50 million

Onco-seq panel includes clinically relevant genes and a wide array of biologically relevant genes

Genes A-C

AATK
ABCA1
ABCB1
ABCB11
ABCB4
ABCC1
ABCC2
ABCG1
ABCG2
ABI1
ABL1
ABL2
ACE
ACSL6
ACTA2
ACTC1
ACVR1
ACVR1B
ACVR2A
ACVR2B
ADAM17
ADAMTS20
ADRB1
ADRB2
AFF1
AFF2
AFF3
AHR
AIP
AJUBA
AKAP9
AKT1
AKT2
AKT3
ALK
ALKBH6
ALOX12B
ALOX5
AMER1
APC
APEX1
APH1A
APOA1
APOB
AR
ARAF
AREG
ARFRP1
ARHGAP10
ARHGAP26
ARHGAP35
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
ATR
ATRX
AURKA
AURKB
AURKC
AXIN1
AXIN2
AXL
B2M
BABAM1
BACH1
BACH2
BAG4
BAI3
BAP1
BARD1
BAX
BAZ1A
BAZ1B
BAZ2A
BAZ2B
BBC3
BCAR3
BCL10
BCL11A
BCL11B
BCL2
BCL2A1
BCL2L1
BCL2L11
BCL2L2
BCL3
BCL6
BCL7A
BCL9
BCLAF1
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
C11orf30
CACNA1C
CACNA1S
CACNB2
CADM2
CALR
CAMTA1
CAPRIN2
CARD10
CARD11
CARD6
CARD8
CARM1
CASC11
CASP8
CBFA2T2
CBFA2T3
CBFB
CBL
CBLB
CBLC
CBX1
CBX2
CBX3
CBX4
CBX5
CBX6
CBX7
CBX8
CCDC6
CCNB3
CCND1
CCND2
CCND3
CCNE1
CCNE2
CCNL1
CD1D
CD22
CD274
CD276
CD28
CD40
CD40LG
CD44
CD70
CD79A
CD79B
CD80
CD86
CDC14A
CDC20
CDC25A
CDC25B
CDC25C
CDC42
CDC6
CDC73
CDH1
CDH10
CDH11
CDH2
CDH20
CDH3
CDH5
CDH7
CDK1
CDK10
CDK11A
CDK11B
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
CHD1
CHD1L
CHD2
CHD3
CHD4
CHD5
CHD6
CHD7
CHD9
CHEK1
CHEK2
CHIC1
CHIC2
CHUK
CIC
CIITA
CKS1B
CKS2
CLIP1
CMPK1
CNKSR1
CNOT3
CNTFR
COL3A1
COMT
COPS3
CRBN
CREB1
CREB3L1
CREB3L2
CREB3L4
CREBBP
CREM
CRHR1
CRK
CRKL
CRLF2
CRTC1
CRTC2
CRTC3
CSF1
CSF1R
CSF2RA
CSF2RB
CSF3R
CSK
CSNK1D
CSNK1E
CTCF
CTCFL
CTLA4
CTNNA1
CTNNA2
CTNNA3
CTNNB1
CTNND1
CTSD
CTSL1
CTSS
CUL3
CUL4A
CUL4B
CUX1
CYLD
CYP17A1
CYP1A2
CYP21A2
CYP2A6
CYP2B6
CYP2C19
CYP2C8
CYP2C9
CYP2D6
CYP2J2
CYP2R1
CYP3A4
CYP3A5
CYP4F2

Genes D-F

DACH1
DACH2
DAXX
DBH
DCC
DCUN1D1
DCUN1D2
DDB2
DDIT3
DDR1
DDR2
DDX3X
DDX5
DDX6
DEK
DHFR
DHH
DIAPH1
DIAPH2
DIAPH3
DICER1
DIRAS3
DIS3
DKC1
DMXL1
DNM2
DNMT1
DNMT3A
DNMT3B
DNMT3L
DOCK2
DOT1L
DPYD
DRD1
DRD2
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
ELP3
EML4
EP300
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
FAM175A
FAM46C
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
FIGF
FKBP10
FKBP5
FKBP9
FLCN
FLG
FLI1
FLT1
FLT3
FLT3LG
FLT4
FOLH1
FOS
FOSB
FOSL1
FOSL2
FOXA1
FOXA2
FOXA3
FOXG1
FOXL1
FOXL2
FOXM1
FOXN3
FOXO1
FOXO3
FOXO4
FOXP1
FOXP2
FOXP3
FOXP4
FOXQ1
FRK
FRS2
FRS3
FSHR
FUBP1
FUS
FYN
FZR1

Genes G-I

G6PC3
G6PD
GAB1
GAB2
GABPA
GALNT12
GATA1
GATA2
GATA3
GATA5
GATA6
GDNF
GFI1
GFI1B
GFRA4
GGCX
GHR
GID4
GLA
GLCCI1
GLI1
GLI2
GLI3
GLIS1
GLIS2
GLIS3
GNA11
GNA13
GNAQ
GNAS
GNRHR
GOT1
GPC3
GPC5
GPR124
GPS2
GRB10
GRB2
GRB7
GREM1
GRIN2A
GRK4
GRK5
GRM3
GRM8
GSK3A
GSK3B
GSTT1
GTPBP4
GUCY1A2
H3F3A
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
HIST1H1E
HIST1H3B
HIST1H4E
HLA-A
HLA-B
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
ICK
ICOS
ICOSLG
ID1
ID2
ID3
ID4
IDH1
IDH2
IFNLR1
IGF1
IGF1R
IGF2
IGF2R
IHH
IKBIP
IKBKAP
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
IRS1
IRS2
IRS4
ITK
ITPKB

Genes J-L

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
KMT2B
KMT2E
KRAS
LATS1
LATS2
LCK
LDB1
LDLR
LEF1
LEPR
LGR4
LGR5
LGR6
LHCGR
LIFR
LMNA
LMO1
LMO2
LMO7
LMTK2
LMTK3
LPHN2
LPHN3
LPP
LRP1B
LRP5
LRP6
LRRK2
LSM1
LTK
LYL1
LYN
LZTR1

TEMPUS xO GENE PANEL

Genes M-O

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
MARCH1
MAST1
MAST2
MATK
MAU2
MAX
MBD1
MBD3
MC1R
MCL1
MCPH1
MDM2
MDM4
MDS2
MECOM
MED12
MED12L
MED29
MEF2B
MEN1
MERTK
MET
MGA
MGMT
MID1
MINK1
MIPOL1
MITF
MKL1
MKL2
MLF1
MLH1
MLH3
MLL
MLL2
MLL3
MLLT1
MLLT10
MLLT11
MLLT3
MLLT6
MLST8
MN1
MNX1
MOB1A
MOB1B
MOS
MPG
MPL
MRE11A
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
NEK2A
NEK3
NEK4
NEK5
NEK6
NEK7
NEK8
NEK9
NF1
NF2
NFATC1
NFATC2
NFATC3
NFATC4
NFE2L2
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
NOTCH2NL
NOTCH3
NOTCH4
NPM1
NPPB
NPR1
NQO1
NR0B1
NR3C1
NR3C2
NR4A1
NR4A2
NR4A3
NRAS
NRG1
NRG2
NRG3
NRG4
NRIP1
NRTN
NSD1
NT5C2
NTF3
NTF4
NTRK1
NTRK2
NTRK3
NUMB
NUMBL
NUP214
NUP93
NUP98
NUTM1
NUTM2A
NUTM2B
NUTM2F
NUTM2G
ODC1
ODZ2
OLIG2
OSMR

Genes P-R

PAK1
PAK2
PAK3
PAK4
PAK6
PAK7
PALB2
PALLD
PARK2
PARP1
PARP2
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
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
PPP2R2B
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
PRLR
PRMT1
PRMT2
PRMT3
PRMT5
PRMT6
PRMT7
PRMT8
PRPF40B
PRPF6
PRRX1
PRRX2
PRSS1
PRSS3
PRSS8
PSEN1
PSEN2
PSENEN
PSIP1
PSPN
PTCH1
PTCH2
PTEN
PTGIS
PTGS1
PTGS2
PTK2
PTK2B
PTK6
PTK7
PTPN11
PTPN2
PTPN21
PTPN6
PTPRB
PTPRC
PTPRD
PTPRF
PTPRG
PTPRJ
PTPRK
PTPRM
PTPRQ
PTPRR
PTPRT
PTTG1
PVT1
RAB23
RAB25
RABEP1
RAC1
RAC2
RAD21
RAD50
RAD51
RAD51AP1
RAD51B
RAD51C
RAD51D
RAD52
RAD54B
RAD54L
RAF1
RAP1GDS1
RARA
RARB
RARG
RASA1
RB1
RBM10
RBM14
RBM15
RBMX
RBMXL1
RBMXL2
RBPJ
REC8
RECQL4
REL
RELA
RELB
RET
RHEB
RHOA
RHOB
RHOH
RHOT1
RICTOR
RIPK1
RIPK2
RIPK3
RIPK4
RIT1
RNF213
RNF40
RNF43
ROBO2
ROCK1
ROCK2
ROR1
ROR2
ROS1
RPA1
RPL5
RPN1
RPS6KB1
RPS6KB2
RPTOR
RRM1
RSPO2
RSPO3
RUNX1
RUNX1T1
RUNX2
RUNX3
RUVBL1
RXRA
RYK
RYR1
RYR2

Genes S-T

SAMD9
SAV1
SBDS
SCN5A
SDHA
SDHAF2
SDHB
SDHC
SDHD
SET
SETBP1
SETD1A
SETD1B
SETD2
SETD3
SETD4
SETD5
SETD6
SETD7
SETD8
SETD9
SETDB1
SETDB2
SETMAR
SF1
SF3A1
SF3B1
SFPQ
SFRP1
SGK1
SGOL1
SGOL2
SH2B3
SH2D1A
SH3GL1
SHB
SHC1
SHC2
SHC3
SHC4
SHFM1
SHH
SHOC2
SKI
SKIL
SKOR1
SKP2
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
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
SOX8
SOX9
SP100
SP110
SP140
SP140L
SP3
SPDEF
SPEN
SPI1
SPIB
SPIC
SPOP
SPOPL
SPRED1
SPRED2
SPRED3
SPRY2
SPRY3
SRC
SRGAP3
SRMS
SRSF2
SS18
SS18L1
SSTR1
SSTR2
SSTR3
SSTR4
SSTR5
SSX1
SSX2
SSX3
SSX4
STAG1
STAG2
STARD3
STAT1
STAT2
STAT3
STAT4
STAT5A
STAT5B
STAT6
STK11
STK19
STK3
STK36
STK4
STYK1
SUFU
SULT1A1
SUV39H1
SUV39H2
SUV420H1
SUV420H2
SUZ12
SYK
SYNE1
TAF1
TAF15
TAF1L
TAL1
TAL2
TAOK1
TAOK2
TAOK3
TBC1D12
TBL1X
TBL1XR1
TBP
TBX18
TBX2
TBX22
TBX3
TBXAS1
TCEB1
TCF12
TCF3
TCF4
TCF7
TCF7L1
TCF7L2
TCL1A
TCL1B
TEAD1
TEAD2
TEAD3
TEAD4
TEC
TEF
TEK
TERC
TERF1
TERT
TET1
TET2
TET3
TFE3
TFEB
TFEC
TFG
TGFA
TGFB1
TGFB2
TGFBR1
TGFBR2
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
TNK1
TNK2
TNKS
TNKS2
TNNI3
TNNT2
TOP1
TOP2A
TOP2B
TP53
TP53BP1
TP63
TPM1
TPMT
TPTE
TPTE2
TRAF1
TRAF2
TRAF3
TRAF3IP1
TRAF3IP2
TRAF3IP3
TRAF6
TRAF7
TRIB1
TRIB2
TRIB3
TRIM24
TRIM28
TRIM33
TRIM66
TRIO
TRRAP
TSC1
TSC2
TSHR
TSHZ3
TWIST1
TWIST2
TXK
TYK2
TYRO3

Genes U-Z

U2AF1
U2AF2
UBE2D1
UBE2D2
UBE2D3
UBE2D4
UBE4A
UBR5
UGT1A1
UGT1A4
UHRF1
UHRF2
USB1
USP9X
USP9Y
UTY
VAV1
VAV2
VAV3
VDR
VEGFA
VEGFB
VEGFC
VGLL1
VGLL2
VGLL3
VGLL4
VHL
VHLL
VKORC1
VTCN1
WAPL
WAS
WASL
WHSC1
WHSC1L1
WIF1
WISP1
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
ZMYM3
ZMYND11
ZMYND8
ZNF217
ZNF384
ZNF423
ZNF444
ZNF471
ZNF521
ZNF607
ZNF639
ZNF668
ZNF703
ZNF704
ZNF750
ZNRF3
ZRSR2

*In addition to reporting on somatic variants, Tempus reports on a limited set of inherited variants within the specified genes. These genes are selected based on recommendations from the American College of Medical Genetics (ACMG) and Tempus assessment of genes important to cancer predisposition syndromes. Patients always have the option to opt out of receiving this information.