**Table S1. Ampliseq Comprehensive Cancer Panel.**

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| **Genes evaluated** | | | | | | | |
| ABL1 | AURKA | BMPR1A | CDK4 | CTNNB1 | EPHB4 | FANCD2 | FZR1 |
| ABL2 | AURKB | BRAF | CDK6 | CYLD | EPHB6 | FANCF | G6PD |
| ACVR2A | AURKC | BRD3 | CDK8 | CYP2C19 | ERBB2 | FANCG | GATA1 |
| ADAMTS20 | AXL | BRIP1 | CDKN2A | CYP2D6 | ERBB3 | FAS | GATA2 |
| AFF1 | BAI3 | BTK | CDKN2B | DAXX | ERBB4 | FBXW7 | GATA3 |
| AFF3 | BAP1 | BUB1B | CDKN2C | DCC | ERCC1 | FGFR1 | GDNF |
| AKAP9 | BCL10 | CARD11 | CEBPA | DDB2 | ERCC2 | FGFR2 | GNA11 |
| AKT1 | BCL11A | CASC5 | CHEK1 | DDIT3 | ERCC3 | FGFR3 | GNAQ |
| AKT2 | BCL11B | CBL | CHEK2 | DDR2 | ERCC4 | FGF42 | GNAS |
| AKT3 | BCL2 | CCND1 | CIC | DEK | ERCC5 | FH | GPR124 |
| ALK | BCL2L1 | CCND2 | CKS1B | DICER1 | ERG | FLCN | GRM8 |
| APC | BCL2L2 | CCNE1 | CMPK1 | DNMT3A | ESR1 | FLI1 | GUCY1A2 |
| AR | BCL3 | CD79A | COL1A1 | DPYD | ETS1 | FLT1 | HCAR1 |
| ARID1A | BCL6 | CD79B | CRBN | DST | ETV1 | FLT3 | HIF1A |
| ARID2 | BCL9 | CDC73 | CREB1 | EGFR | ETV4 | FLT4 | HLF |
| ARNT | BCR | CDH1 | CREBBP | EML4 | EXT1 | FN1 | HNF1A |
| ASXL1 | BIRC2 | CDH11 | CRKL | EP300 | EXT2 | FOXL2 | HOOK3 |
| ATF1 | BIRC3 | CDH2 | CRTC1 | EP400 | EZH2 | FOXO1 | HRAS |
| ATM | BIRC5 | CDH20 | CSF1R | EPHA3 | FAM123B | FOXO3 | HSP9OAA1 |
| ATR | BLM | CDH5 | CSMD3 | EPHA7 | FANCA | FOXP1 | HSP9OAB1 |
| ATRX | BLNK | CDK12 | CTNNA1 | EPHB1 | FANCC | FOXP4 | ICK |
| IDH1 | KRAS | MLH1 | NFKB2 | FIK3C2B | RARA | SOCS1 | TOP1 |
| IDH2 | LAMP1 | MLL | NIN | PIK3CA | RB1 | SOX11 | TP53 |
| IGF1R | LCK | MLL2 | NKX2-1 | PIK3CB | RECQL4 | SOX2 | TPR |
| IGF2 | LIFR | MLL3 | NLRP1 | PIK3CD | REL | SRC | TRIM24 |
| IGF2R | LPHN3 | MLLT10 | NOTCH1 | PIK3CG | RET | SSX1 | TRIM33 |
| IKBKB | POT1 | MMP2 | NOTCH2 | PIK3R1 | RHOH | STK11 | TRIP11 |
| IKBKE | LPP | MN1 | NOTCH4 | PIK3R2 | RNASEL | STK36 | TRRAP |
| IKZF1 | LRP1B | MPL | NPM1 | PIM1 | RNF2 | SUFU | TSC1 |
| IL2 | LTF | MRE11A | NRAS | PKHD1 | RNF213 | SYK | TSC2 |
| IL21R | LTK | MSH2 | NSD1 | PLAG1 | ROS1 | SYNE1 | TSHR |
| IL6ST | MAF | MSH6 | NTRK1 | PLCG1 | RPS6KA2 | TAF1 | UBR5 |
| IL7R | MAFB | MTOR | NTRK3 | PLEKHG5 | RRM1 | TAF1L | UGT1A1 |
| ING4 | MAGEA1 | MTR | NUMA1 | PML | RUNX1 | TAL1 | USP9X |
| IRF4 | MAGI1 | MTRR | NUP214 | PMS1 | RUNX1T1 | TBX22 | VHL |
| IRS2 | MALT1 | MUC1 | NUP98 | PMS2 | SAMD9 | TCF12 | WAS |
| ITGA10 | MAML2 | MUTYH | PAK3 | POU5F1 | SBDS | TCF3 | WHSC1 |
| ITGA9 | MAP2K1 | MYB | PALB2 | PPARG | SDHA | TCF7L1 | WRN |
| ITGB2 | MAP2K2 | MYC | PARP1 | PPP2R1A | SDHB | TCF7L2 | WT1 |
| ITGB3 | MAP2K4 | MYCL1 | PAX3 | PRDM1 | SDHC | TCL1A | XPA |
| JAK1 | MAP3K7 | MYCN | PAX5 | PRKAR1A | SDHD | TET1 | XPC |
| JAK2 | MAPK1 | MYD88 | PAX7 | PRKDC | SEPT9 | TET2 | XPO1 |
| JAK3 | MAPK8 | MYH11 | PAX8 | PSIP1 | SETD2 | TFE3 | XRCC2 |
| JUN | MARK1 | MYH9 | PBRM1 | PTCH1 | SF3B1 | TGFBR2 | ZNF384 |
| KAT6A | MARK4 | NBN | PBX1 | PTEN | SGK1 | TGM7 | ZNF521 |
| KAT6B | MBD1 | NCOA1 | PDE4DIP | PTGS2 | SH2D1A | THBS1 |  |
| KDM5C | MCL1 | NCOA2 | PDGFB | PTPN11 | SMAD2 | TIMP3 |  |
| KDM6A | MDM2 | NCOA4 | PDGFRA | PTPRD | SMAD4 | TLR4 |  |
| KDR | MDM4 | NF1 | PDGFRB | PTPRT | SMARCA4 | TLX1 |  |
| KEAP1 | MEN1 | NF2 | PER1 | RAD50 | SMARCB1 | TNFAIP3 |  |
| KIT | MET | NFE2L2 | PGAP3 | RAF1 | SMO | TNFRSF14 |  |
| KLF6 | MITF | NFKB1 | PHOX2B | RALGDS | SMUG1 | TNK2 |  |
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