

| Gene name |        |         |           |           |         |          |         |         |              |
|-----------|--------|---------|-----------|-----------|---------|----------|---------|---------|--------------|
| ABCC9     | CALR   | CUL5    | FANCD2    | HIST1H2BF | LEF1    | NBN      | PLA2G2D | SF3B1   | TINF2 (TIN2) |
| ABL1      | CARD11 | CUX1    | FANCE     | HIST1H3D  | LRP1B   | NCOR1    | PLCG2   | SFRS1   | TLR2         |
| ACTG1     | CBL    | CYLD    | FANCG     | HIST1H4D  | LTB     | NCOR2    | POT1    | SFRS7   | TLR9         |
| AKT1      | CBLB   | DAXX    | FANCI     | HNRNPBK   | LUC7L2  | NF1      | POU2AF1 | SGK1    | TNFAIP3      |
| ANKRD11   | CCND1  | DCLRE1C | FANCL     | HRAS      | LYN     | NFE2     | PRDM1   | SH2B3   | TNFRSF14     |
| ARID1A    | CCND3  | DDX3X   | FAS       | ICOS      | MALT1   | NFKB1    | PRKCB   | SHH     | TNKS         |
| ARID1B    | CD200  | DIS3    | FAT1      | ID3       | MAP2K1  | NFKB2    | PTEN    | SMAD2   | TOX          |
| ARID2     | CD274  | DKC1    | FAT3      | IDH1      | MAPK1   | NFKBIA   | PTPN1   | SMC1A   | TP53         |
| ARID5B    | CD58   | DLC1    | FBXW7     | IDH2      | MAX     | NFKBIE   | PTPN11  | SMC3    | TRAF3        |
| ARPP21    | CD79A  | DNM2    | FGFR3     | IKBKA     | MDM2    | NOTCH1   | RAD21   | SMC5    | TRAF6        |
| ASXL1     | CD79B  | DNMT1   | FLI1      | IKZF1     | MED12   | NOTCH2   | RAD51C  | SNX7    | TYK2         |
| ATF7IP    | CDK4   | DNMT3A  | FLT3      | IKZF2     | MEF2B   | NPM1     | RAG1    | SOCS1   | TYK3         |
| ATM       | CDKN2A | DNMT3B  | FNDC3A    | IKZF3     | MEF2C   | NR3C2    | RAG2    | SOX5    | U2AF1        |
| ATRX      | CDKN2B | EBF1    | FOXP1     | IL7R      | MGA     | NRAS     | RASA2   | SP140   | U2AF2        |
| B2M       | CDKN2C | ECT2L   | FYN       | IRAK1     | miR125a | NSD2     | RB1     | SPEN    | UBR5         |
| BCL10     | CEBPA  | EED     | G6PC3     | IRAK4     | miR-142 | NT5C2    | REL     | SPIB    | USP29        |
| BCL2      | CEBPE  | EGR1    | GAB2      | IRF1      | miR155  | PAG1     | RELA    | SRSF2   | VPREB1       |
| BCL6      | CHD2   | EGR2    | GATA1     | IRF4      | miR15a  | PALB2    | RELB    | STAG1   | WHSC1        |
| BCL7A     | CHK2   | ELANE   | GATA2     | IRF7      | miR16-1 | PAX5     | RELN    | STAG2   | WHSC1L1      |
| BCOR      | CIITA  | EP300   | GATA3     | ITPKB     | MIR17HG | PDCD1    | RHOA    | STAT1   | WT1          |
| BCR       | CNOT3  | EPHA7   | GCET2     | JAK1      | miR21   | PDCD1LG2 | RIPK1   | STAT3   | XPO1         |
| BIRC3     | CREBBP | EPOR    | GF11B     | JAK2      | mir34b  | PDGFRB   | ROBO1   | SUZ12   | ZAP70        |
| BLK       | CRLF2  | ERG     | GNA13     | JAK3      | mir34c  | PEG3     | ROR1    | SYK     | ZMYM2        |
| BMI1      | CSF2RA | ETV6    | GNAS      | JARID2    | MLL     | PHF6     | RPL10   | TBL1XR1 | ZMYM3        |
| BRAF      | CSF3R  | EZH2    | GNB1      | KDM4C     | MLL2    | PHIP     | RPL5    | TCF3    | ZRSR2        |
| BRIP1     | CTBP1  | FAM46C  | GPRC5A    | KDM6A     | MLL3    | PIGA     | RUNX1   | TERC    |              |
| BTG1      | CTBP2  | FAM5C   | HAX1      | KIT       | MPL     | PIK3CA   | RUNX2   | TERT    |              |
| BTK       | CTCF   | FANCA   | HIST1H1E  | KLHL6     | MS4A1   | PIK3CB   | SAMHD1  | TET1    |              |
| BTLA      | CTLA4  | FANCB   | HIST1H2AD | KRAS      | MYB     | PIK3CG   | SETBP1  | TET2    |              |
| C22orf194 | CTNNA1 | FANCC   | HIST1H2BE | LAMB4     | MYD88   | PIK3R1   | SETD2   | TGDS    |              |

**Supplemental Table S4.** *List of the 295 genes that were targeted for bulk sequencing.*