Figure S1. List of 426 genes in HemaScan™ panel.

| ABL1, ACTB, AKT1, AKT2, AKT3, ALK, AMER1, ANKR1D11, APC, APH1A, AR, ARAF, ARFRP1, ARHGAP26, ARID1A, ARID2, ASXL1, ATM, ATR, ATRX, AURKA, AURKB, AXIN1, AXL, B2M, BAP1, BARD1, BCL10, BCLI1B, BCL2, BCL2L1, BCL6, BCL7A, BCOR, BCORL1, BCR, BIRC3, BLM, BRAF, BRCA1, BRCA2, BRD4, BRIP1, BRSK1, BTG1, BTG2, BTG3, BTK, BTLA, CIITROR3F0, CAD, CARD11, CBFB, CBL, CCND1, CCND2, CCND3, CCNE1, CCT5B, CD22, CD274, CD28, CD36, CD58, CD70, CD79A, CD79B, CDC73, CDH1, CDK12, CDK4, CDK6, CDK8, CDK9, CDKN1B, CDKN2A, CDKN2B, CDKN2C, CEBPA, CHD2, CHEK1, CHEK2, CITC, CIC, CSK1B, CPS1, CREBBP, CRKL, CRLF2, CSF1R, CSF3R, CTCL, CTNNB1, CUX1, CXCR4, DAXX, DDR2, DDIT3, DNMT3A, DOT1L, DTX1, DUSP2, DUSP9, EBF1, ECT2L, EED, EGF, EGR, ELF2, EP300, EPHA3, EPHA5, EPHA7, EPB1, EPHB1, EPHB2, ERBB3, ERBB4, ERG, ESR1, ETS1, ETV1, ETV4, ETV6, EWSR1, EXOSC6, EZH2, FAF1, FAM46C, FNAC, FANC, FANCD2, FANCE, FANCF, FANCG, FANCL, FAS, FBXO11, FBXO13, FBXW7, FGFR10, FGFR4, FGFR9, FGFR23, FGFR3, FGFR4, FGFR6, FGFR1, FGFR2, FGFR3, FGFR4, FHT, FLCN, FLI1, FLT3, FLT4, FLWCH1, FOXL2, FOXO1, FOXO3, FOXP1, FR2, FYN, GADD45B, GATA1, GATA2, GATA3, GID4, GNA11, GNA12, GNA13, GNAQ, GNAS, GPR124, GRIN2A, GSK3B, GTSE1, HDAC1, HDAC4, HDAC7, HGF, HIST1H1C, HIST1H1D, HIST1H1E, HIST1H2AC, HIST1H2AG, HIST1H2AL, HIST1H2AM, HIST1H2BC, HIST1H2BJ, HIST1H2BK, HIST1H2BO, HIST1H2B, HNF1A, HRAS, HSP90AA1, ICK, ID3, IDH1, IDH2, IFG1R, IKKBE, IKZF1, IKZF2, IL20RA, IL7R, INHBA, INPP4B, INPP5D, IRF1, IRF4, IRF8, IRS2, JAK1, JAK2, JAK3, JARID2B, JUN, KAT6A, KDM2B, KDM4C, KDM5A, KDM5C, KDM6A, KDR, KEAP1, KIT, KLHL6, KRAS, LERF1, LILRB1, LRP1B, LRRK2, MAP, MAFB, MAGED1, MAL1, MAP2K1, MAP2K2, MAP2K4, MAP3K1, MAP3K4, MAP3K6, MAPK7, MAPK1, MCL1, MDM2, MDM4, MED12, MEF2B, MEF2C, MEF2D, MEF2F, MEF2G, MEF2H, MFL1, MFL2, MIR114, MIR162, MIR36, MIR448, MIR520, MIR615, MIR608, MIR708, MMR, MRE11A, MRE11B, MSH2, MSH3, MSH6, MTOC, MUC2, MUTH, MYC, MYCL, MYCN, MYD88, MYO1A8, NCOA2, NCTN, NF1, NF2, NF2L2L, NFKBIA, NKK2-1, NODE1, NOTCH1, NOTCH3, NPM1, Nras, NTRC2, NTRK1, NTRK3, NUP93, NUP98, P2RY5, PAG1, PAK3, PALB2, PASK, PAX5, PBRM1, PC, PCBP1, PCLO, PDCD1, PDCD1LG2, PDGFRA, PDGFRB, PDK1, PHF6, PIK3CA, PIK3CG, PIK3R2, PIK3R2, PIM1, PLCG1, PLCG2, POU2F2, PPP2R1A, PRDM1, PRKAR1A, PRKDC, PRSS8, PTCH1, PTEN, PTPN11, PTPN2, PTPN6, PTPRO, RAD1, RAD50, RAD51, RAF1, RARA, RASGEF1A, RB1, RELN, RET, RHOA, RHOA2, RICTOR, RNF43, ROS1, RPTOR, RUNX1, S1PR2, SDHA, SDHB, SDHC, SDHD, SERP2, SETBP1, SETD2, SF3B1, SGK1, SMAD2, SMAD4, SMARCA1, SMARCA4, SMARCB1, SMARCD1, SMAC1A, SMCA3, SMG3, SOCS1, SOCS2, SOCS3, SOX10, SOX2, SPEN, SPOP, SRC, SRSF2, STAT2, STAT3, STAT5A, STAT5B, STAT6, STK11, SUFU, SUZ12, TAF1, TBL1XR1, TCF3, TCL1A, TET2, TET3, TGFB2L2, TLL2, TMEM304, TMPRSS2, TMSL3, TNFAIP3, TNFRSF1A, TNFRSF14, TNFRSF17, TOP1, TP53, TP63, TRAF2, TRAF3, TRAF5, TSC1, TSC2, TSHR, TUSC3, TYK2, U2AF1, U2AF2, VAV1, VHL, WDR90, WHSC1, WIPI, WISP3, WT1, WWOX, XBF1, XPO1, YY1AP1, ZMYM3, ZNF217, ZNF24, ZNF703, ZRSR2 |
Figure S2. Genetic landscape confirmed as SNV and InDels in HemaScan™ in five patients.

| Gene     | Patient 1 | Patient 2 | Patient 3 | Patient 4 | Patient 5 |
|----------|-----------|-----------|-----------|-----------|-----------|
| IDH1     |           |           |           |           |           |
| IDH2     |           |           |           |           |           |
| KEAP1    |           |           |           |           |           |
| PCL0     |           |           |           |           |           |
| PCL0*    |           |           |           |           |           |
| PCL0**   |           |           |           |           |           |
| PCL0***  |           |           |           |           |           |
| RARA     |           |           |           |           |           |
| ROX1     |           |           |           |           |           |
| ALK      |           |           |           |           |           |
| CARD11   |           |           |           |           |           |
| C11orf11*|           |           |           |           |           |
| ETV4     |           |           |           |           |           |
| ETV6*    |           |           |           |           |           |
| ICOR1    |           |           |           |           |           |
| NOTCH1   |           |           |           |           |           |
| RETBP1   |           |           |           |           |           |
| STK10    |           |           |           |           |           |
| APC      |           |           |           |           |           |
| AXL      |           |           |           |           |           |
| ATR      |           |           |           |           |           |
| ASXL1    |           |           |           |           |           |
| BCL10    |           |           |           |           |           |
| BCL2     |           |           |           |           |           |
| BCRF1    |           |           |           |           |           |
| BLM      |           |           |           |           |           |
| CD26     |           |           |           |           |           |
| CDK4     |           |           |           |           |           |
| CHEK1    |           |           |           |           |           |
| CHEK2    |           |           |           |           |           |
| CREBBP   |           |           |           |           |           |
| DJ2X     |           |           |           |           |           |
| DDR2     |           |           |           |           |           |
| DDX1     |           |           |           |           |           |
| DOT1L    |           |           |           |           |           |
| EIPS0    |           |           |           |           |           |
| EPHA3    |           |           |           |           |           |
| EPHA5    |           |           |           |           |           |
| EPHA6    |           |           |           |           |           |
| FANCG    |           |           |           |           |           |
| FANCL    |           |           |           |           |           |
| FLT3     |           |           |           |           |           |
| FOXL2    |           |           |           |           |           |
| FOXO3    |           |           |           |           |           |
| GNA15    |           |           |           |           |           |
| GPR172    |           |           |           |           |           |
| HSPB1L1   |           |           |           |           |           |
| INPP4B   |           |           |           |           |           |
| KDR      |           |           |           |           |           |
| KDR*     |           |           |           |           |           |
| MPL      |           |           |           |           |           |
| MUC2     |           |           |           |           |           |
| NFE2L2   |           |           |           |           |           |
| NTRK2    |           |           |           |           |           |
| NUP35    |           |           |           |           |           |
| POGDPRB  |           |           |           |           |           |
| PIK3R2   |           |           |           |           |           |
| RAD60    |           |           |           |           |           |
| NCTOR    |           |           |           |           |           |
| RET1     |           |           |           |           |           |
| SPEN     |           |           |           |           |           |
| STK11    |           |           |           |           |           |
| TNFRSF14 |           |           |           |           |           |
| TSC2     |           |           |           |           |           |

* , ** , *** , and****: Different mutation site