**Supplementary Material 1**

**1. Leukemia lymphoma panel from Peripheral blood.** The total cell viability is 98.6%, the gated cell viability is 99.9%. The populations identified on the histogram include 92% lymphocytes, 4% granulocytes, 1% monocytes, and 0.1% blasts. The lymphocyte gate has 16% B lymphocytes with a K/L ratio of 1.34, 77% T lymphocytes with a CD4/CD8 ratio of 1.92, and 7% NK lymphocytes. The CD45 versus side scatter histogram demonstrated 89% of cells in the lymphocyte gate, 1% of cells in the monocyte gate, 4% in the granulocytic gate and 0% in the blast gate; the remainder of cells are either CD45 negative or non-viable for analysis. The overall scattergram pattern shows no abnormal cell populations. There is no increase in blasts. T-cells predominate and show a normal CD4/ CD8-ratio with no significant loss of T-cell antigenic markers. B-cells are polyclonal. No increase in plasma cells is noted. Summary: No immunophenotypic evidence of lymphoproliferative disorder, acute leukemia or plasma cell neoplasm. The following markers were performed: flow cytometric antibodies: CD10, CD117, CD13, CD14, CD19, CD19/CD38, CD19/Kappa, CD19/Lambda, CD2, CD20, CD23, CD3, CD33, CD34, CD38, CD4, CD45, CD5, CD5/CD19, CD56, CD7, CD8, FMC7, HLA-DR

**2. Leukemia lymphoma panel from bone marrow specimen.** The total cell viability is 92.94 %, the gated cell viability is 96.34%. The populations identified on the histogram include 76% lymphocytes, 4% granulocytes, 0% monocytes, 0.81% blasts, 2.68% plasma cells, and 6% CD45-. The lymphocyte gate has 15% B lymphocytes, 77% T lymphocytes with a CD4/CD8 ratio of 1.75, and 8% NK lymphocytes. The CD45 versus side scatter histogram demonstrated 76% of cells in the lymphocyte gate, 0% of cells in the monocyte gate, 4% in the granulocytic gate and 1% in the blast gate; the remainder of cells are either CD45 negative or non-viable for analysis. The overall scattergram pattern shows no abnormal cell populations. There is no increase in blasts. T-cells predominate and show a normal CD4/ CD8-ratio with no significant loss of T-cell antigenic markers. B-cells are polyclonal. There are 3% polyclonal plasma cells present with DAKO staining. Summary: No immunophenotypic evidence of lymphoproliferative disorder, acute leukemia or plasma cell neoplasm. The following markers were performed: CD10, CD117, CD13, CD138, CD14, CD19, CD19/CD38, CD19/Kappa, CD19/Lambda, CD2, CD20, CD23, CD3, CD33, CD34, CD38, CD4, CD45, CD5, CD5/CD19, CD56, CD7, CD8, cKAPPA, cLAMBDA, FMC7, HLA-DR

**3. FISH study.** Fluorescence in-situ hybridization (FISH) was performed on interphase nuclei using probes localized to the D5S721 (5p15.2), EGR1 (5q23-31), D7Z1 (7cen), D7S486 (7q31), D8Z2 (8cen), and D20S108 (20q12) gene regions. Two hundred nuclei were examined, and the results were within normal limits for the laboratory's established background rates. Chromosome analysis-normal male karyotype at the band level 350 as determined by the trypsin- Giemsa method. Genes included in this profile: Hotspot: ABL1, BRAF, CBL, CSF3R, DNMT3A, FLT3, GATA2, HRAS, IDH1, IDH2, JAK2, KIT, KRAS, MPL, MYD88, NPM1, NRAS, PTPN11, SETBP1, SF3B1, SRSF2, U2AF1, WT1. Full: ASXL1, BCOR, CALR, CEBPA, ETV6, EZH2, IKZF1, NF1, PHF6, PRPF8, RB1, RUNX1, SH2B3, STAG2, TET2, TP53, ZRSR2. Fusion: ABL1, ALK, BCL2, BRAF, CCND1, CREBBP, EGFR, ETV6, FGFR1, FGFR2, FUS, HMGA2, JAK2, KMT2A, MECOM, MET, MLLT10, MLLT3, MYBL1, MYH11, NTRK3, NUP214, PDGFRB, PDGFRA, RARA, RBM15, RUNX1, TCF3, TFE3. Expression: BAALC, MECOM, MYC, SMC1A, WT1