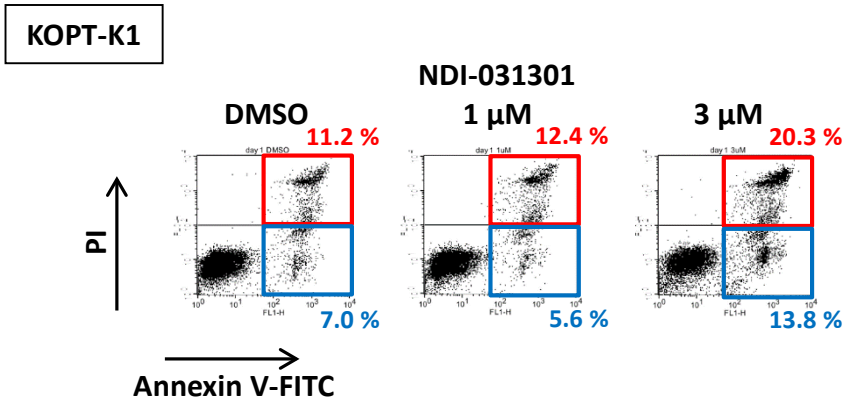

Fig S1. Apoptotic change of KOPT-K1 cells after NDI-031301 treatment. KOPT-K1 cells were cultured in the absence or presence of NDI-031301 (1 µM or 3 µM) for 24 h, and assessed for apoptosis by flow cytometric analysis following Annexin V-FITC and PI double staining. The panels show two-dimensional dot plot images with the percentage of cells in each colored fraction. Blue rectangles indicate the fractions of Annexin V-positive / PI-negative early apoptotic cells, while red rectangles indicate the fractions of Annexin V-positive / PI-positive late apoptotic cells.

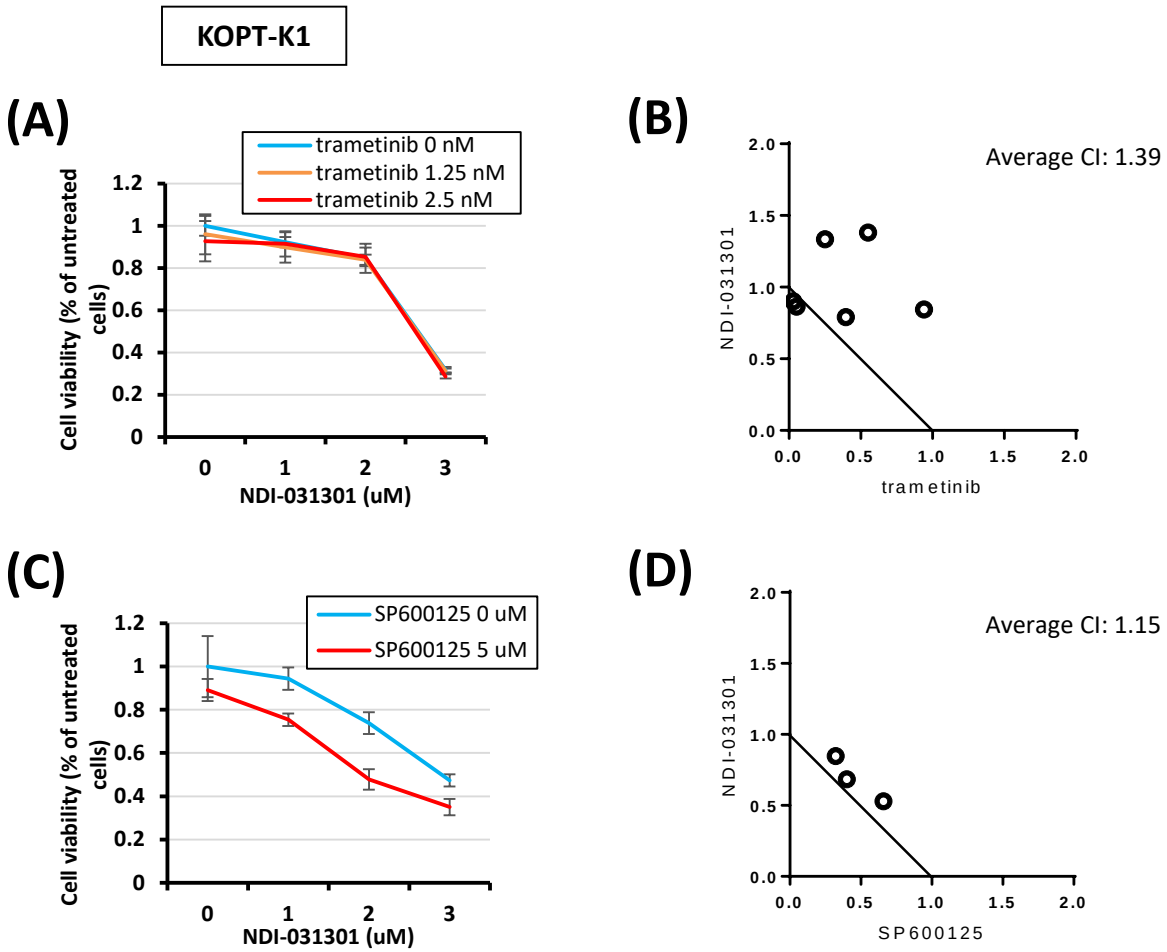

Fig S2. Combination effect of NDI-031301 and MAPK pathway inhibitors on viability of KOPT-K1 cells. KOPT-K1 cells were treated for 72 h with varying combinations of NDI-031301 (0 - 3 μM) and each of MEK1/2 inhibitor trametinib (0 – 2.5 nM) or SAPK/JNK inhibitor SP600125 (0 - 5 μM). The relative cell viability after each combinational treatment is shown in panels **(A)** and **(C)**, as mean ± s.d. percentages of the DMSO treated control value in triplicate experiment. The normalized isobolograms were obtained with the Calcusyn software. Each of the combination indices was plotted in panels **(B)** and **(D),** as a function of dose combination, and an average combination index (CI) of each drug combination is indicated in the panel.

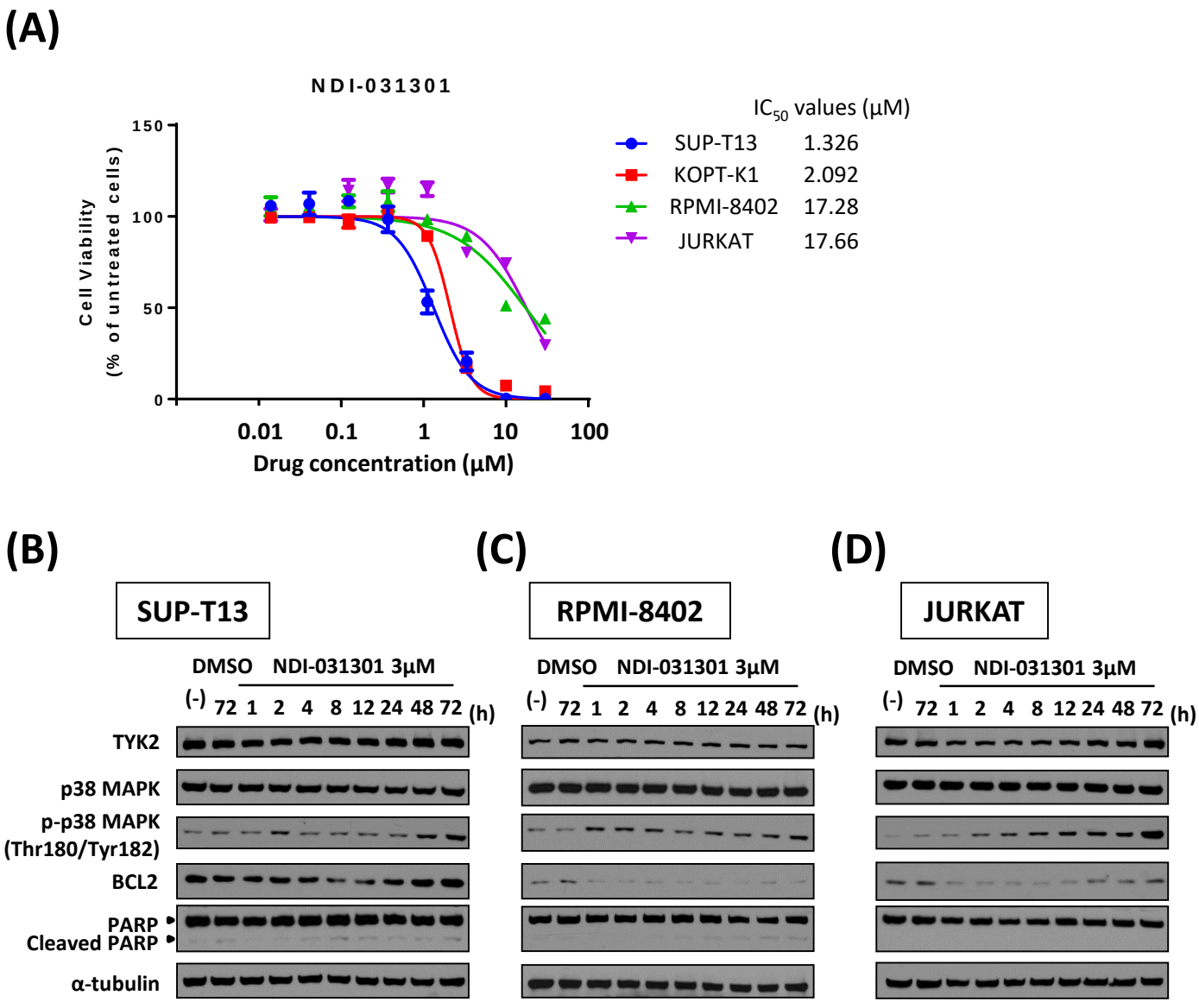

Fig S3. NDI-031301 sensitivity and the effect of the drug treatment on cellular signaling pathways in additional human T-ALL cell lines. (A) Anti-proliferative activity of NDI-031301 on additional human T-ALL cell lines. SUP-T13, KOPT-K1, RPMI-8402 and JURKAT cells were cultured with graded concentrations of the indicated inhibitor for 72 h. Cell viability values are mean ± s.d. percentages of the untreated control value in triplicate experiments. IC_{50} value in each cell line is shown. **(B-D)** Time-course analysis to assess the effect of NDI-031301 on cellular signaling pathways was conducted in each of SUP-T13 **(B)**, RPMI-8402 **(C)** and JURKAT **(D)** cells, respectively. The cells were treated with DMSO or 3 μM of NDI-031301, and harvested at the indicated times. Western blot analysis was performed with each specified antibody.

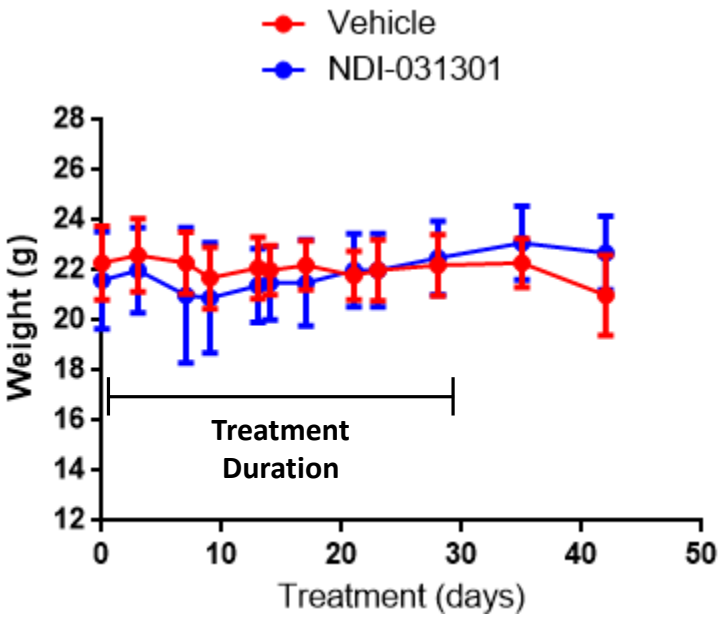

Fig S4. Trends of weight of xenografted mice treated with NDI-031301. Weights of mice treated with vehicle or NDI-031301 at 100mg/kg twice daily in this study are displayed (n = 6 for each treatment group).

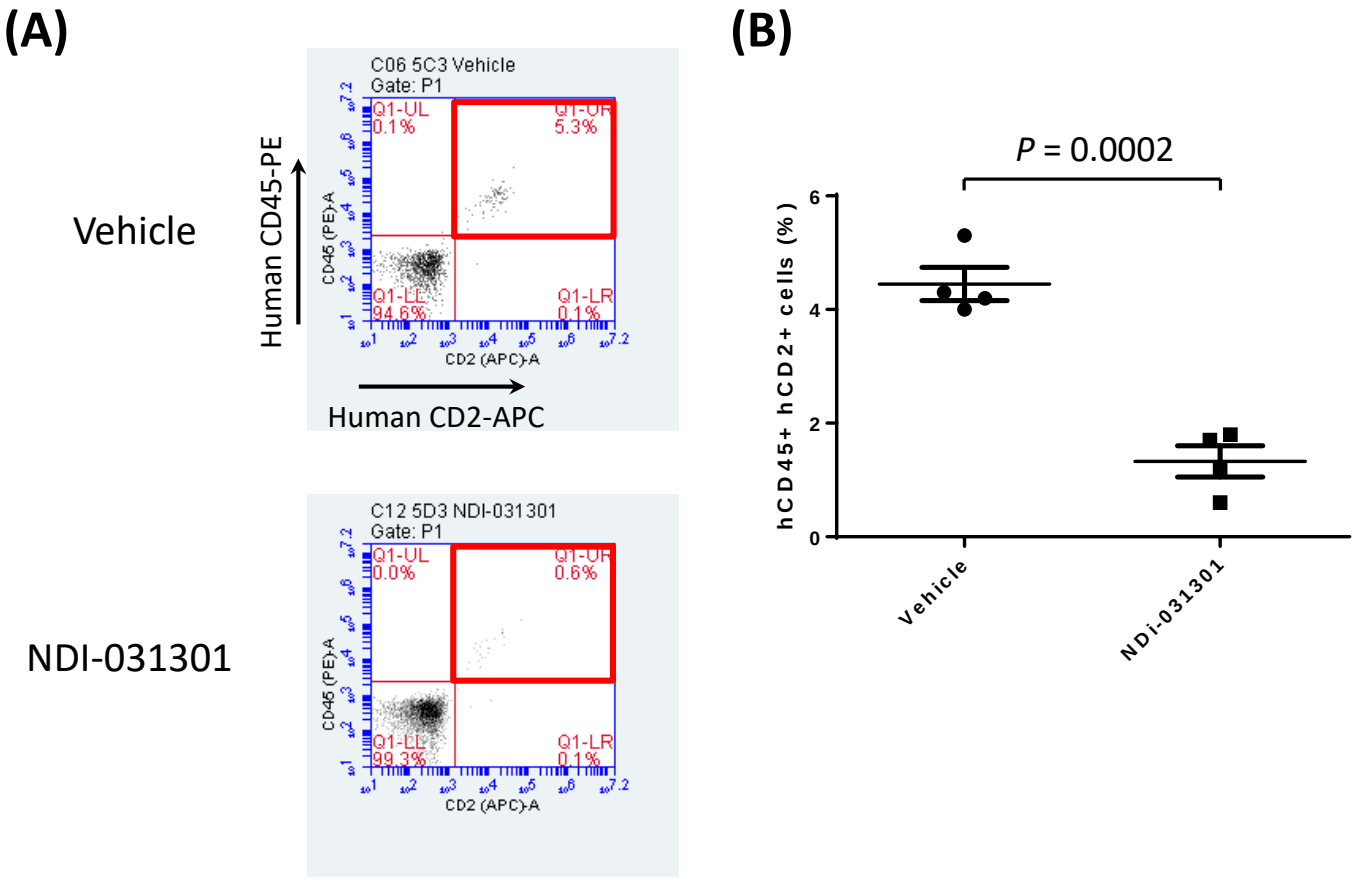

Fig S5. NDI-031301 reduces the appearance of human CD45 and CD2-double positive cells in peripheral blood of KOPT-K1 xenografted mice. (A) Appearance of human leukemia cells in peripheral blood was assessed by flow cytometric analysis following human CD45 (hCD45)-PE and human CD2 (hCD2)-APC double staining. The panels show two dimensional dot plots image on a representative mouse treated with vehicle or NDI-031301 at 100mg/kg for 29 days. Red rectangles indicate the fractions of hCD45 and hCD2-double positive cells. **(B)** The percentage of hCD45 and hCD2-double positive cells in peripheral blood of each treated mouse (n = 4 for each treatment group). Error bars represent SEM. The statistical significance was assessed by two-sample, two-tailed *t* test.