

Description of Additional Supplementary Files

Supplementary Data 1: Immunophenotype and developmental stage of IL-7Rmut leukemias.

Supplementary Data 2: Productive and non-productive IG gene rearrangements based on WES data.

Supplementary Data 3: Ordered list of genes represented in figure 3a, showing differences between control and leukemia samples.

Supplementary Data 4: Complete list of RNAseq differentially expressed genes.

Supplementary Data 5: Ordered list of significantly differentially expressed proteins represented in figure 3b showing differences between control and leukemia samples.

Supplementary Data 6: Complete list of differentially expressed proteins from proteomics analysis.

Supplementary Data 7: PAM posterior probabilities for classification of mouse samples in B-ALL subtypes.

Supplementary Data 8: List of identified single nucleotide variants (SNVs) and indels in pre-leukemic, IL-7Rmut het leukemic and IL-7Rmut hom leukemic mouse samples.

Supplementary Data 9: List of identified copy number variants in pre-leukemic, IL-7Rmut het leukemic and IL-7Rmut hom leukemic mouse samples.

Supplementary Data 10: Profiler KEGG pathway functional enrichment analysis for the top 1000 genes contributing positively (related to subgroup Ph-like 2) and negatively (related to subgroup Ph-like 1) to the first principal component of the principal component analysis (PCA) presented in figure 6a.

Supplementary Data 11: PAM posterior probabilities for classification of human samples in Ph-like subgroups.

Supplementary Data 12: Absolute and relative frequencies of human B-ALL samples (from Gu et al, 2019), and B-ALL samples with disruptive exon 6 IL7R mutations within leukemia subtypes.

Supplementary Data 13: Z-score values of chemical screen library for kinase inhibitors tested in IL-7-dependent Ba/F3 cells stably transduced with mutant IL7R (Z-score cut-offs -17.59 and 7.79).

Supplementary Data 14: Antibodies used in flow cytometry analysis.

Supplementary Data 15: Primers used for Sanger sequencing.

Supplementary Data 16: Antibodies used in Immunoblotting.

Supplementary Data 17: Primer sequences.