

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: List of differentially regulated genes with statistically significant difference between WT and *Vav3*^{-/-} B-cell progenitors

File Name: Supplementary Data 2

Description: Gene-ontology (molecular functions, biological function and pathway) analyses of all the differentially expressed genes in *Vav3* deficient p190 BCR-ABL+ B-cell progenitors.

File Name: Supplementary Data 3

Description: Exome sequencing and evaluation of mutations and/or deletion in genes known to be mutated and/or deleted in B-ALL.

File Name: Supplementary Data 4

Description: Differentially bound peaks identified by Diffbind analyses of *Bmi1* CUT&RUNseq data.

File Name: Supplementary Data 5

Description: Differentially bound peaks identified by Diffbind analyses of *Ring1b* CUT&RUNseq data

File Name: Supplementary Data 6

Description: Differentially bound peaks identified by Diffbind analyses of H2AK119Ub CUT&RUNseq data.

File Name: Supplementary Data 7

Description: Overlapping genes with decreased *Bmi1*, *Ring1b* and H2AK119Ub occupancy in *Vav3*^{-/-} leukemic B-cell progenitors.

File Name: Supplementary Data 8

Description: Overlapping genes with increased *Bmi1*, *Ring1b* and H2AK119Ub occupancy in *Vav3*^{-/-} leukemic B-cell progenitors.