



Fig. S3 a) The housekeeping gene *Gapdh* is not marked by H3K27me3 in normal murine GMP and murine *MLL-AF9* bulk blasts. In contrast, *Cdkn2b*, *Gata2* and *Egr1* are H3K27me3 marked, identifying these gene loci as PRC2 targets. Data are from Geo Accession GSE29130 for GMP and from Geo Accession GSE34962 for *MLL-AF9* blasts. WIG-files were visualized using IGV (<http://www.broadinstitute.org/igv/>).

b) – d) Exposure to UNC1999 results in similar transcriptional changes as *Eed* knockout on a *Cdkn2a*^{ko} genetic background. b) Significant enrichment of PRC2 Kim geneset in UNC1999 treated cells.

c) Significant negative enrichment of *MLL-AF9* direct binding targets geneset in UNC1999 treated cells.

d) Significant negative enrichment of *MLL-ENL* direct binding targets in UNC1999 treated cells.