## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: AML prognostic P vlaues, LSC+/LSC- P values and average expressions in LSC+ versus LSC- of 203 mRNA splicing factors. Related to Figure 1.

File Name: Supplementary Data 2

Description: 866 significantly enriched reproducible binding peaks for RBM17 in the genome identified from RBM17 eCLIP-seq in K562 cells. Related to Figure 3.

File Name: Supplementary Data 3 Description: Differentially spliced events in K562 cells treated with shRBM17 versus control shscramble. Related to Figure 3.

File Name: Supplementary Data 4 Description: Splicing events directly bound by RBM17. Related to Figure 3.

File Name: Supplementary Data 5

Description: Coding potential and protein domain changes prediction of splicing events affected by RBM17 knockdown in K562 cells. Related to Figure 4.

File Name: Supplementary Data 6 Description: Differentially expressed proteins in K562 cells treated with shRBM17 versus control shscramble. Related to Figure 4.

File Name: Supplementary Data 7 Description: Proteins included in the EIF4A2\_KD\_DN and EIF4A2\_KD\_UP gene set. Related to Figure 7.

File Name: Supplementary Data 8 Description: Protein expression changes of 22 translation related factors in K562 cells with and without EIF4A2 knockdown or RBM17 knockdown. Related to Figure 7.