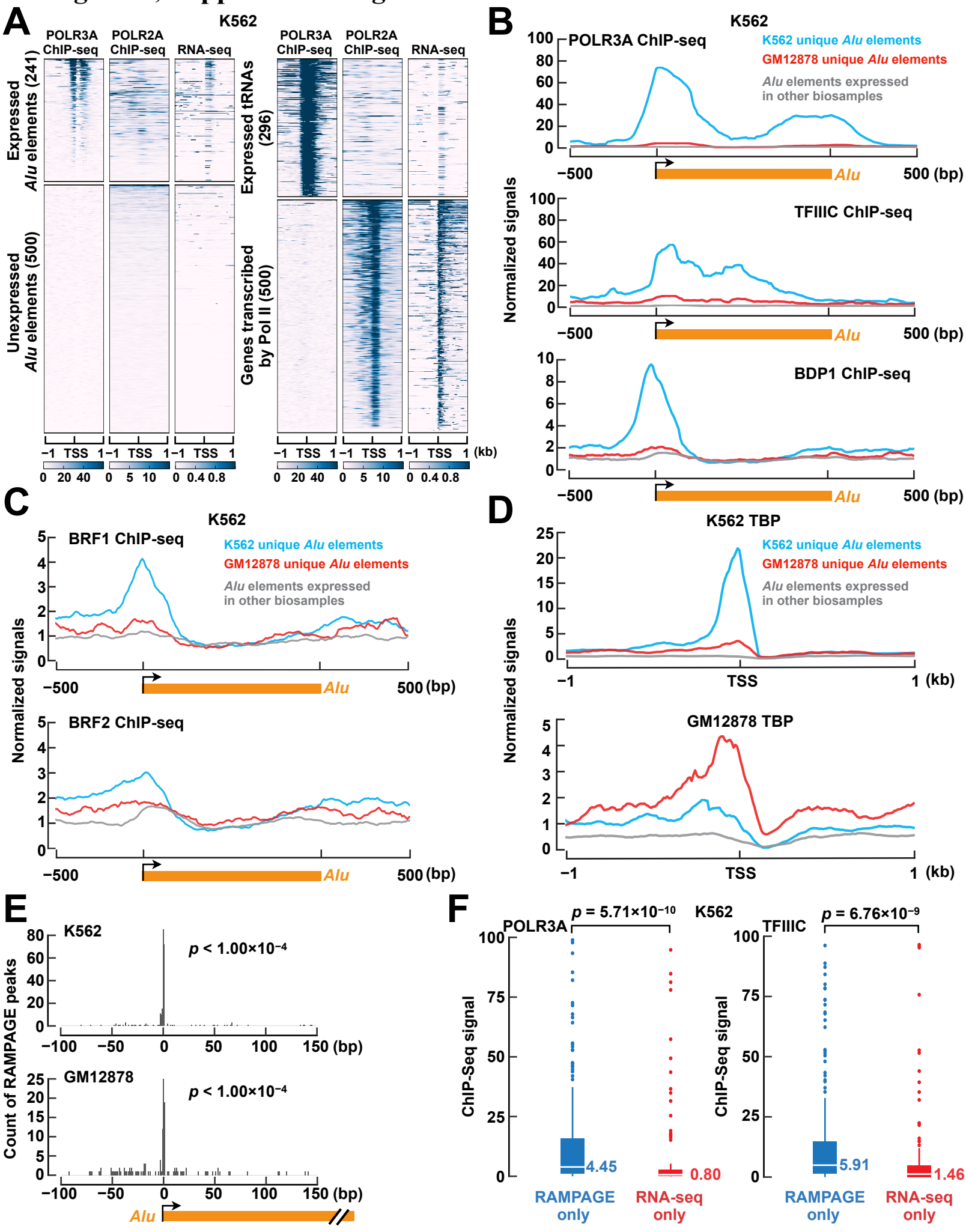
Zhang et al., Supplemental Figure S3



Supplemental Figure S3. Computational validation of expressed *Alu* elements.

A. Heatmap of normalized read densities for POLR3A ChIP-seq, POLR2A ChIP-seq, and total RNA-seq around the TSSs of expressed *Alu* elements defined by RAMPAGE, unexpressed *Alu* elements (randomly sampled, N = 500), expressed tRNAs (Raha et al. 2010), and expressed, Pol II-transcribed genes (randomly sampled, N = 500). Note that most of the RAMPAGE-defined expressed *Alu* elements show high POLR3A ChIP-seq signals, albeit not as high as expressed tRNAs, and both groups have detectable RNA-seq signals.

B. *Alu* elements specifically expressed in K562 cells (blue lines), but not *Alu* elements specifically expressed in GM12878 cells (red lines) or *Alu* elements expressed in other biosamples (grey lines), showed high ChIP-seq signals of POLR3A (top), TFIIIC (middle), and BDP1 (bottom) in K562.

C. *Alu* elements specifically expressed in K562 cells (blue lines) showed higher BRF1 ChIP-seq signals but similar BRF2 ChIP-seq signals compared with *Alu* elements specifically expressed in GM12878 cells (red lines) or *Alu* elements expressed in other biosamples (grey lines).

D. The binding of TBP exhibited specific profiles for *Alu* elements expressed uniquely in K562 cells (blue) and in GM12878 cells (red). Note that *Alu* elements expressed in the corresponding cell line showed higher binding signals than *Alu* elements unexpressed in the respective cell line.

E. RAMPAGE peaks are significantly enriched near the annotated TSSs of *Alu* elements in K562 (top) and GM12878 (bottom) cells (10,000 permutations were performed).

F. Expressed *Alu* elements uniquely identified by RAMPAGE showed significantly higher enrichment of POLR3A (left) and TFIIIC (right) ChIP-seq signals than *Alu* elements uniquely identified by RNA-seq (Conti et al. 2015). Wilcoxon rank-sum test *p*-values are provided. Note that all expressed *Alu* elements are included in these plots regardless whether they overlapped POLR3A or TFIIIC peaks, while Fig. 1G only contains the subset of expressed *Alu* elements that did not overlap POLR3A or TFIIIC peaks.