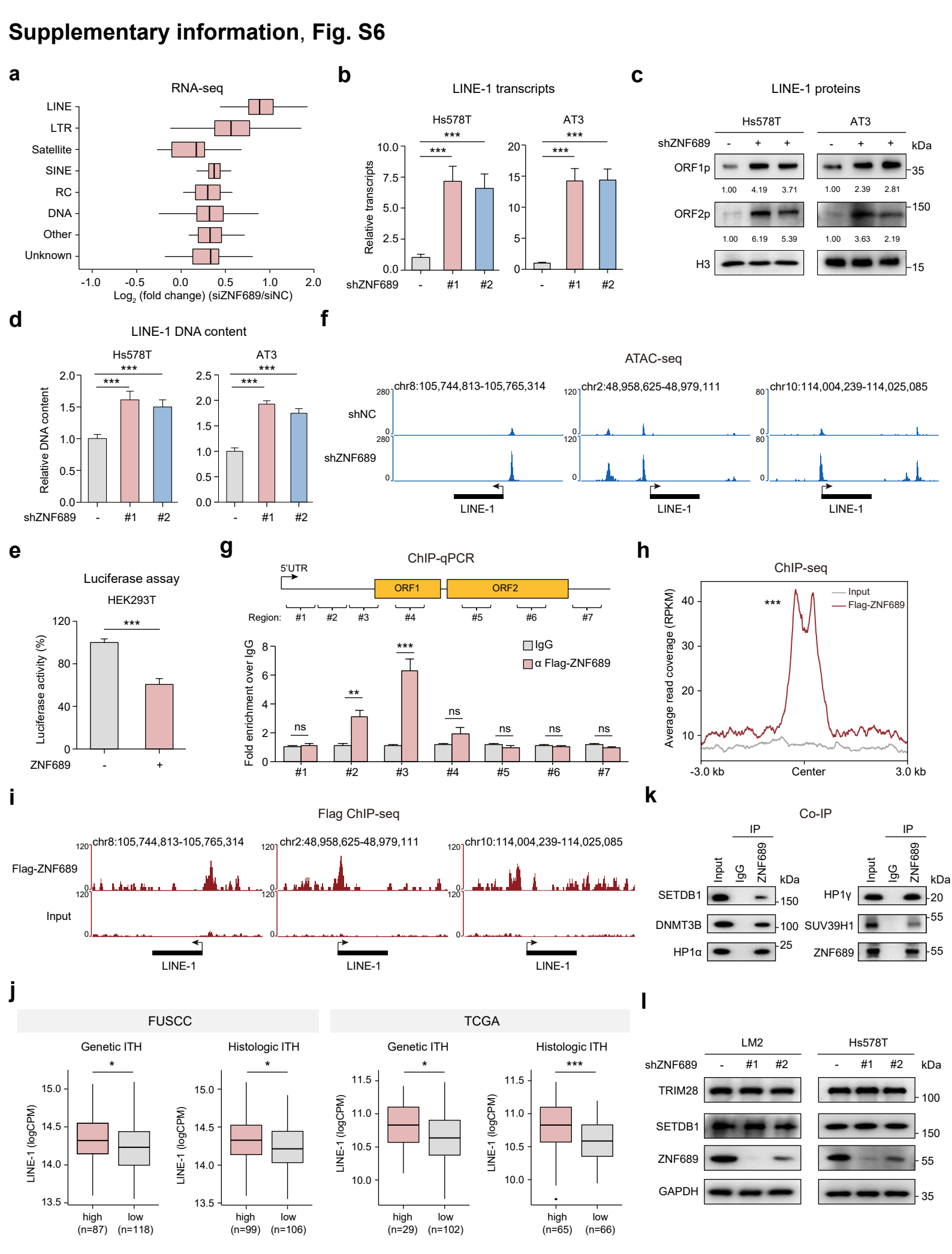
Supplementary information, Fig. S6



Supplementary information, Fig. S6 ZNF689 regulates LINE-1 activity by binding to its promoter.

a Box plots showing the expression differences of siNC and siZNF689 for different repetitive elements. LINE, long interspersed element; LTR, long terminal repeats; RC, rolling circle; DNA, DNA repeat elements. **b** LINE-1 (ORF2) transcript levels determined by RT-qPCR in shNC- and shZNF689-expressing cells. **c** Western blot analysis of LINE-1 ORF1p and ORF2p proteins in shNC and shZNF689 cells. **d** RT-qPCR analysis of the relative LINE-1 (5'-UTR for Hs578T; ORF2 for AT3) genomic DNA content in shNC and shZNF689 cells. **e** Dual-luciferase assay showcasing LINE-1 promoter activity in HEK293T cells. **f** ATAC-seq tracks demonstrating the changes in accessibility of the full-length LINE-1 promoter after ZNF689 knockdown in LM2 cells. **g** ChIP-qPCR assessment of ZNF689 enrichment at seven LINE-1 regions in LM2 cells expressing Flag-ZNF689. **h** Metaplots showing enrichment peaks of Flag-ZNF689 ChIP-seq in the full-length LINE-1 promoter in LM2 cells. **i** ChIP-seq tracks depicting the binding of ZNF689 at the full-length LINE-1 promoter in LM2 cells. **j** Comparison of LINE-1 expression differences between the high and low ITH groups in the FUSCC and TCGA cohort. **k** Co-IP analysis of SETDB1, DNMT3B, HP1α, HP1γ, and SUV39H1 with endogenous ZNF689 protein in LM2 cells. **l** Western blot analysis of TRIM28 and SETDB1 protein levels after ZNF689 knockdown. P values were determined using one-way ANOVA (**b, d**), two-tailed unpaired Student's t tests (**e, g**) and Wilcoxon tests (**h, j**). ns, not significant; *p < 0.05, **p < 0.01, ***p < 0.001.