

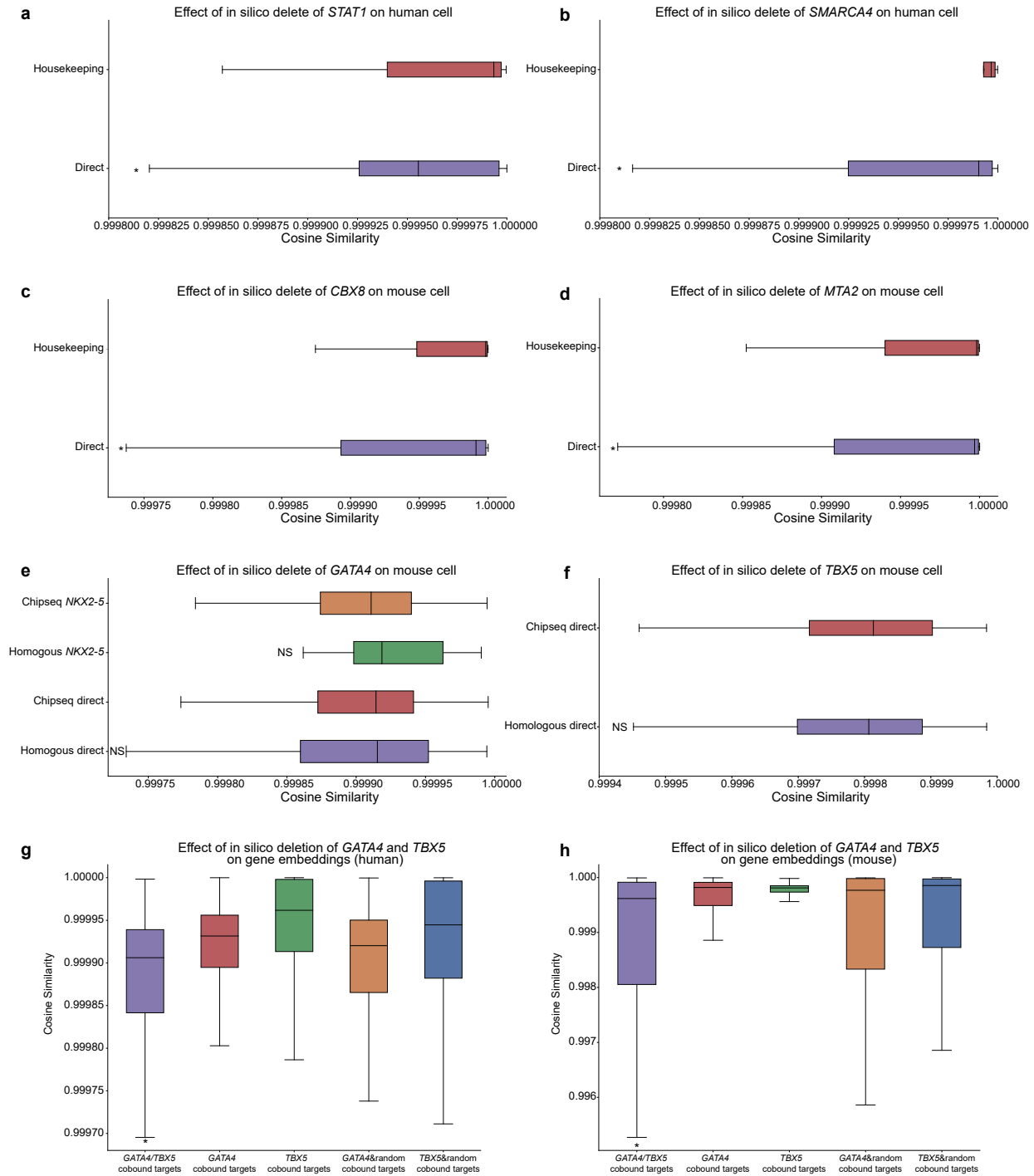


Fig. S3| Analysis of gene embedding. a, Comparison of the effects of *in silico* deletion of *STAT1* on housekeeping genes and direct target genes in human PBMC cells. **b**, Comparison of the effects of *in silico* deletion of *SMARCA4* on housekeeping genes and direct target genes in human acute myeloid leukemia cells. **c**, Comparison of the effects of *in silico* deletion of *CBX5* on housekeeping genes and direct target genes in mouse embryonic stem cells. **d**, Comparison of the effects of *in*

silico deletion of *MTA2* on mouse housekeeping genes and direct target genes in colonic epithelium cells. **e**, Effects of *in silico* deletion of *GATA4* cells on different sources of direct targets and *NKX2-5* targets, including ChIP-Seq ground-truth and homologous mapping from humans. **f**, Effects of *in silico* deletion of *TBX5* cells on different sources of direct targets, including ChIP-Seq ground-truth and homologous mapping from humans. **g-h**, Effects of the individual and combined deletion of *GATA4* and *TBX5* as well as their combinatorial deletion with other genes that are not known to co-bind with the co-bound target genes in humans and mice. (* $P < 0.05$ wilcoxon-test, NS no significance)