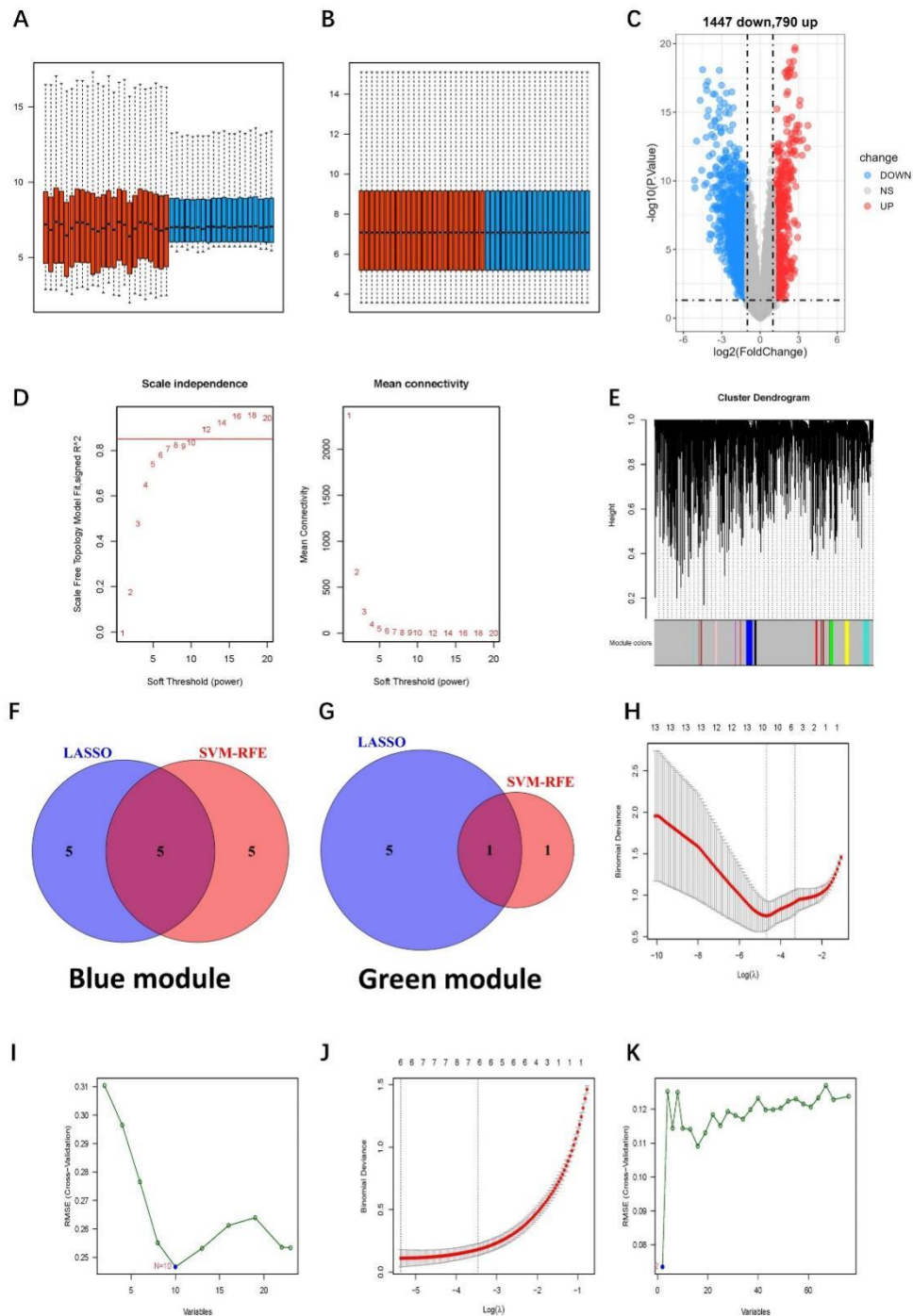
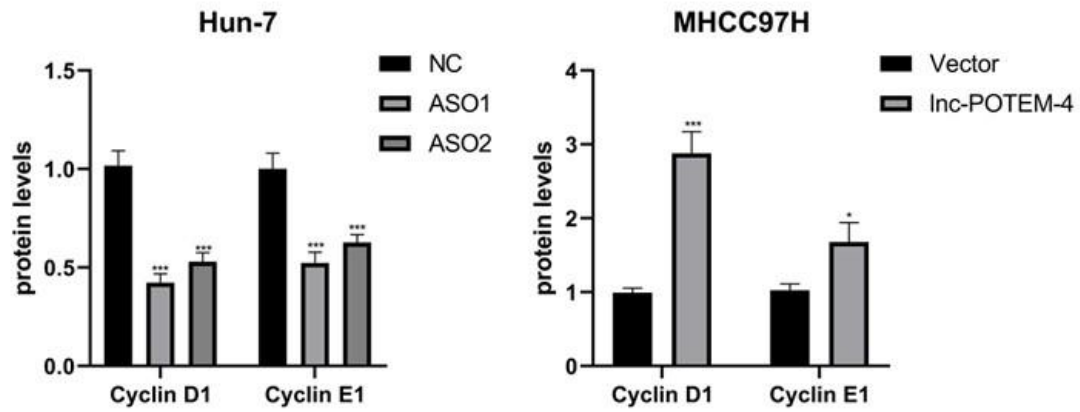
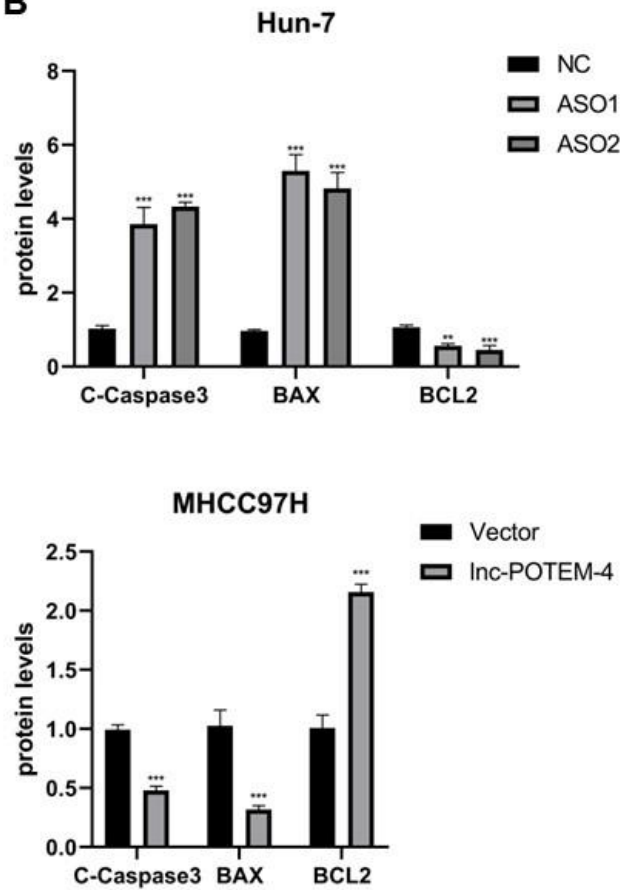


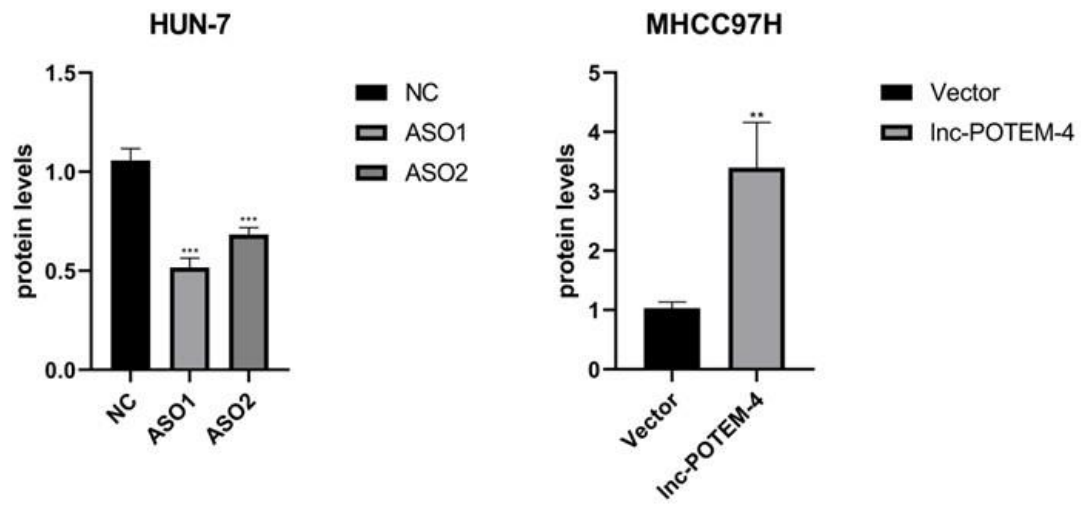


Supplementary Figure 1 Screening of lncRNAs associated with liver cancer. (A) Boxplot before batch correction. (B) Boxplot after batch correction. (C) Total Differential RNA Volcano Plot. (D) Construction of a Scale-free Topological Network. (E) Hierarchical Clustering Dendrogram of Modules. (F) Venn diagram (MEblue). (G) Venn diagram (MEgreen). (H) LASSO (MEblue). (I) SVM-RFE (MEblue). (J) LASSO (MEgreen). (K) SVM-RFE (MEblue).

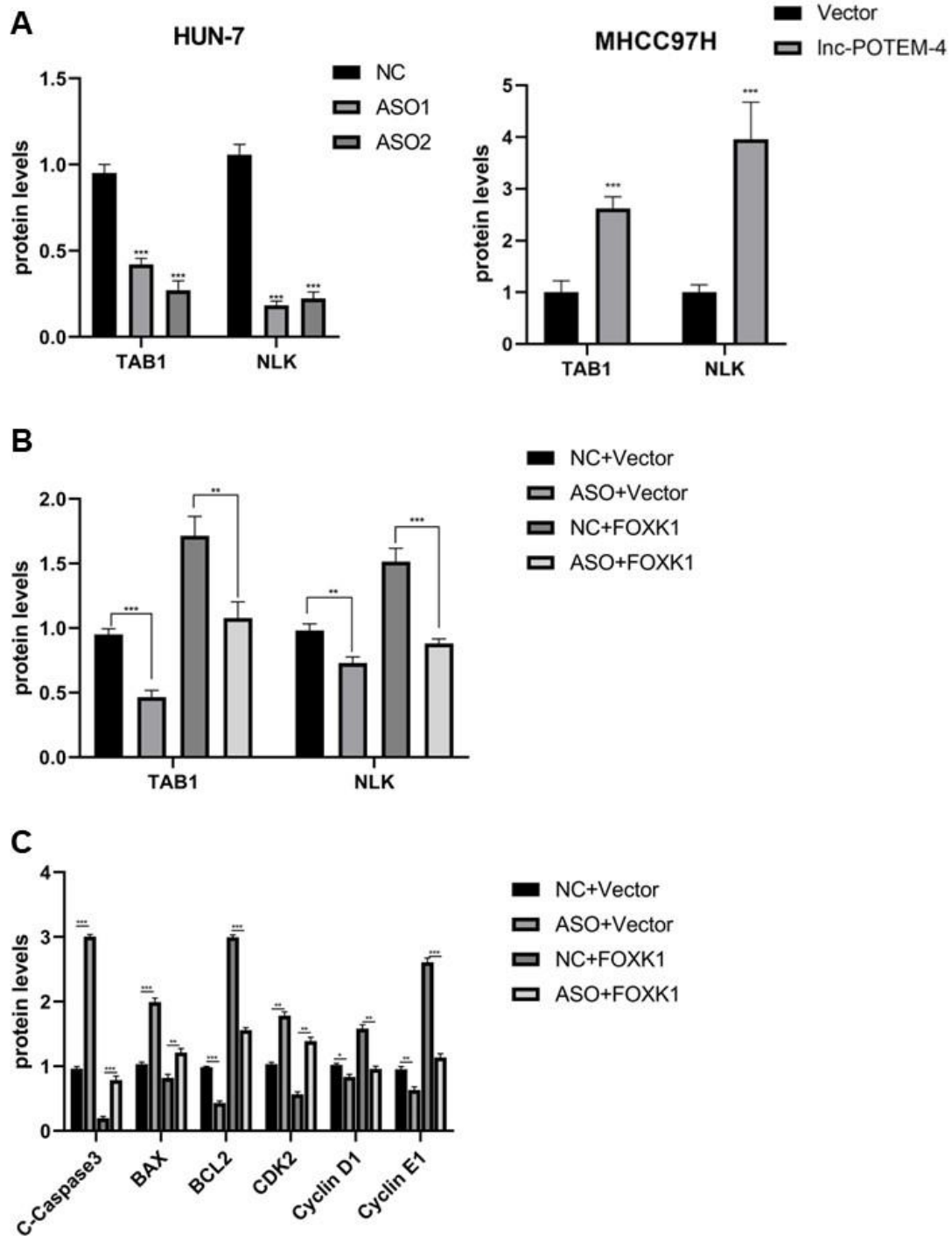
A**B**

Supplementary Figure 2 The statistical results of western blot of Fig.3. (a) The statistical results of western blot of Fig.3D, (b) The statistical results of western blot of Fig.3D. The data shown are the means $\pm$ SDs ($n = 3$), *: $P < 0.05$, **: $P < 0.01$, ***: $P < 0.001$.

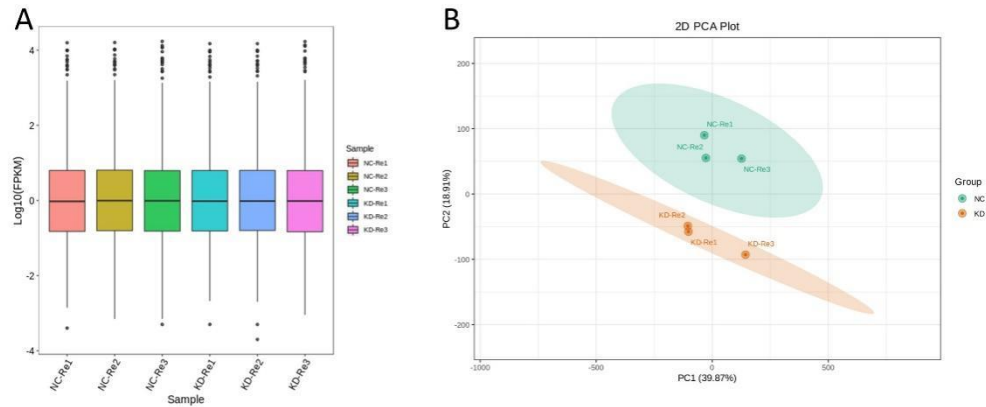
A



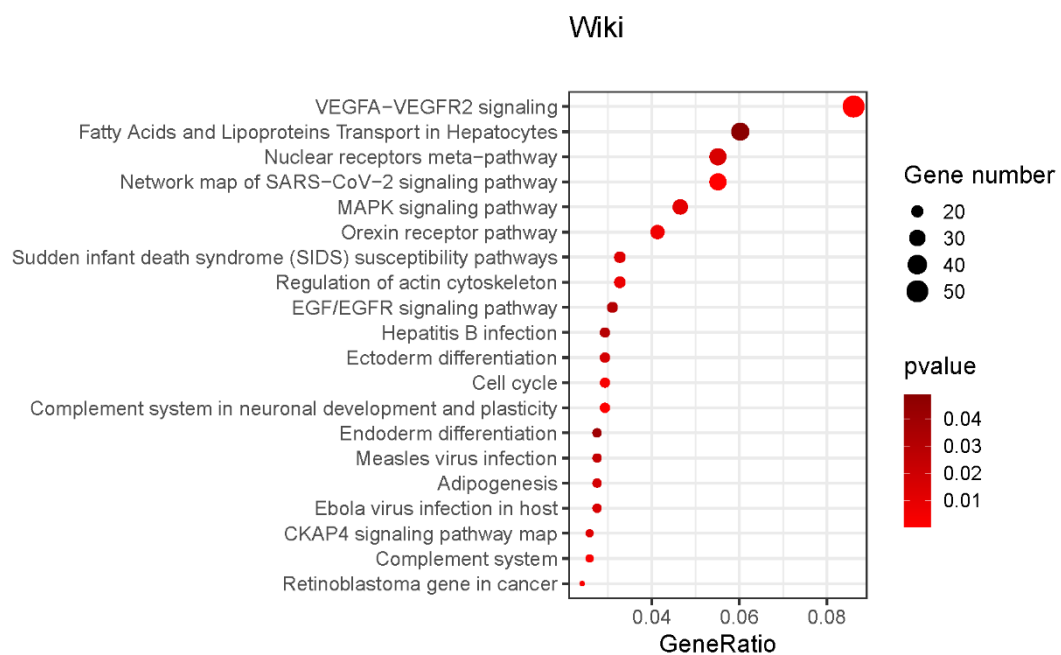
Supplementary Figure 3 The statistical results of western blot of Fig.5. The data shown are the means $\pm$ SDs ($n = 3$), *: $P < 0.05$, **: $P < 0.01$, ***: $P < 0.001$.



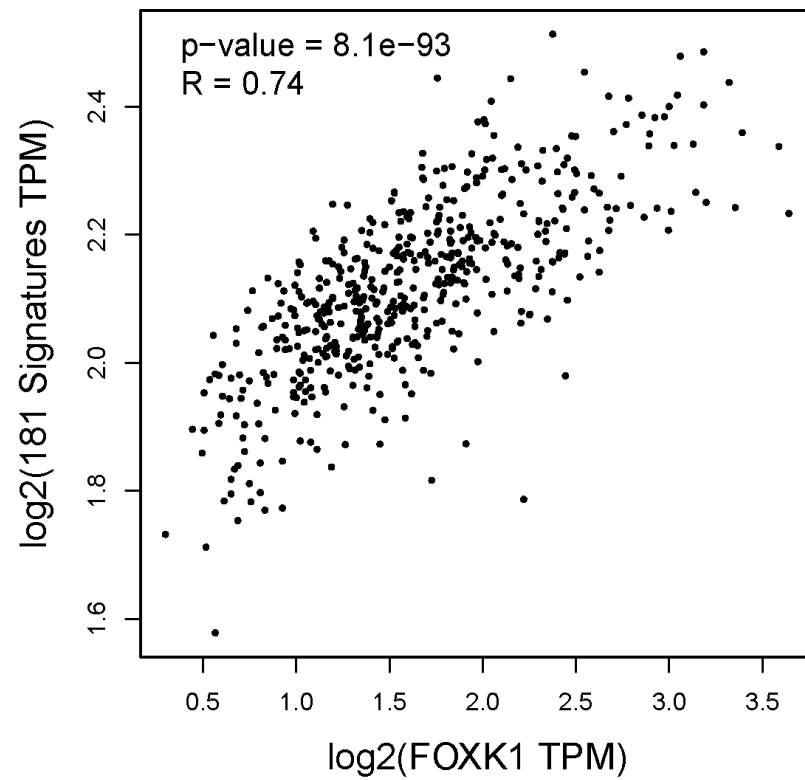
Supplementary Figure 4 The statistical results of western blot of Fig.6, (a) The statistical results of western blot of Fig.6G, (b) The statistical results of western blot of Fig.6H, (c) The statistical results of western blot of Fig.6I. The data shown are the means $\pm$ SDs (n = 3), *: P < 0.05, **: P < 0.01, ***: P < 0.001.



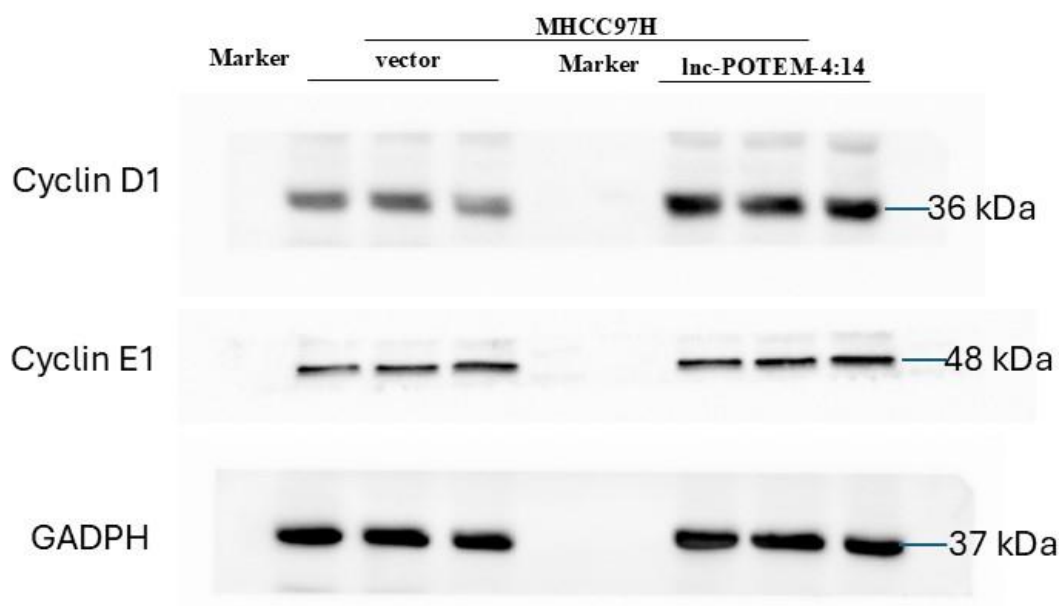
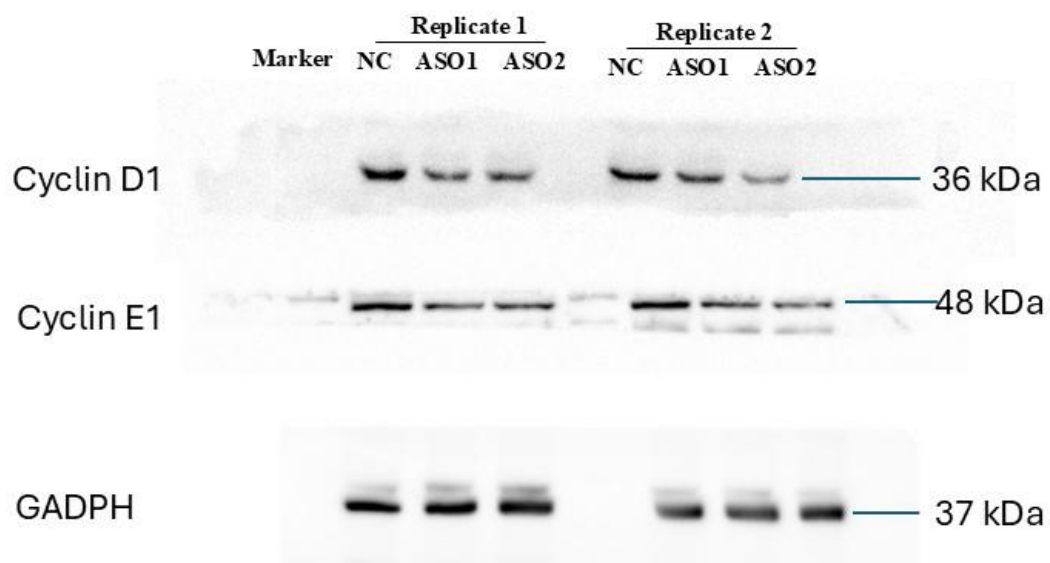
Supplementary Figure 5 Quality Control of RNA-seq for Inc-POTEM-4:14 Control Group and ASO Group. A. Boxplot. B. PCA analysis.



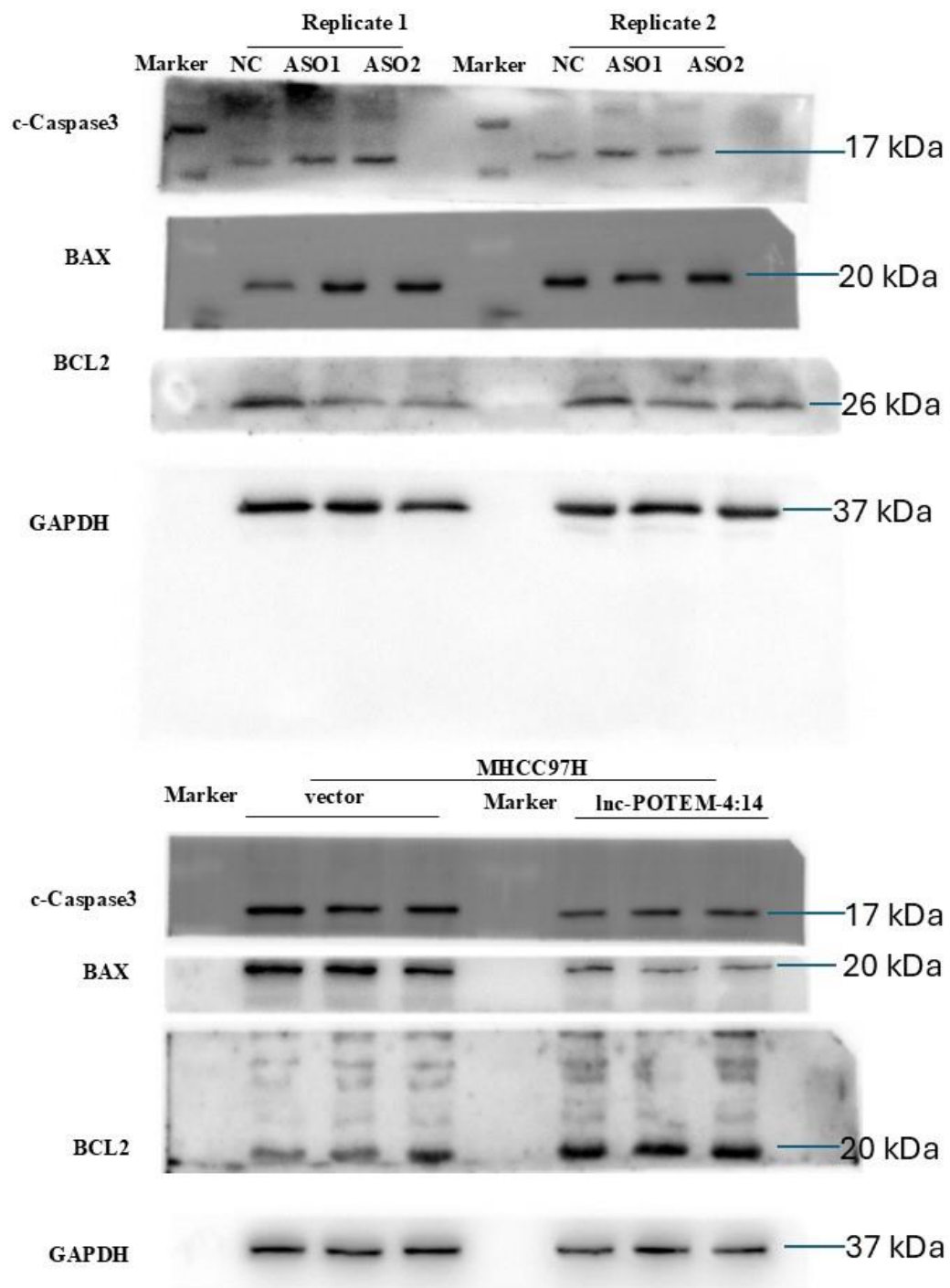
Supplementary Figure 6 the Wiki enrichment analysis of differentially expressed genes between Inc-POTEM-4:14 knockdown group and NC group.



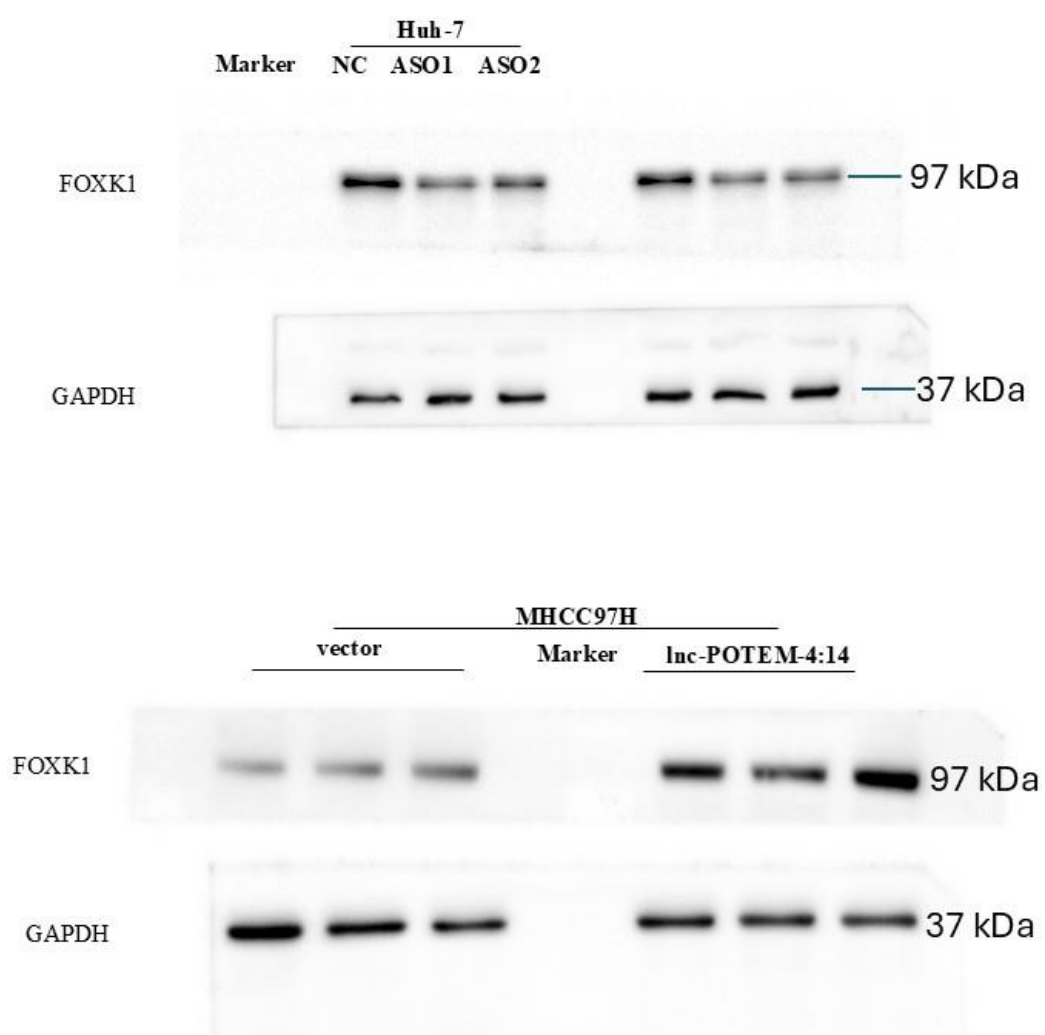
Supplementary Figure 7 Correlation of FOXK1 with the gene set of the MAPK signaling pathway.



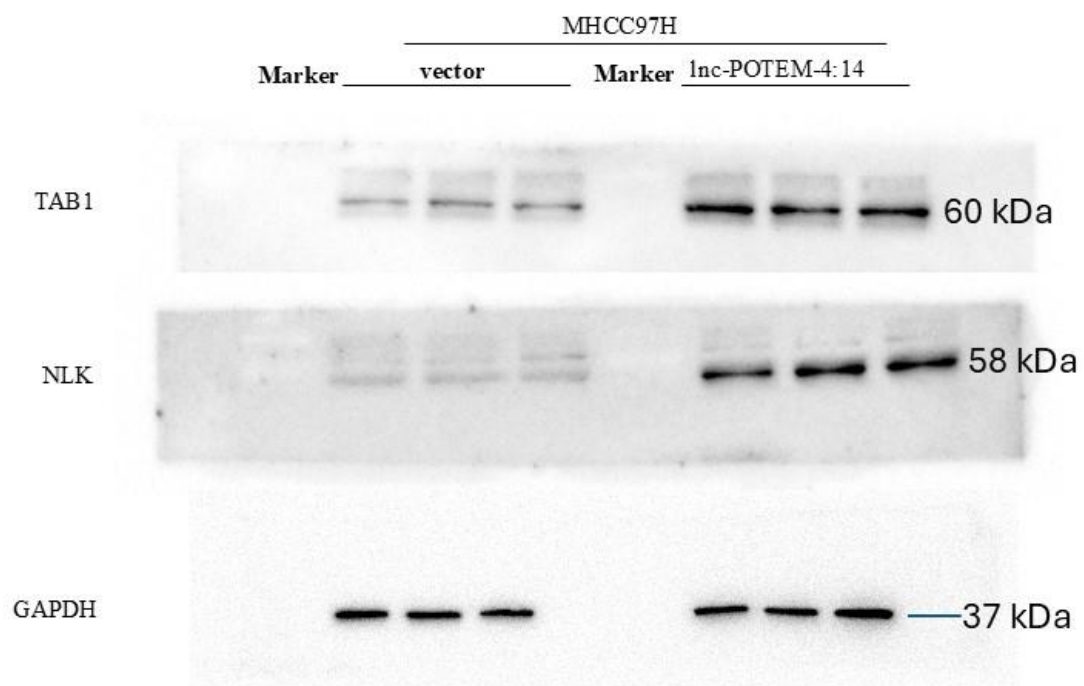
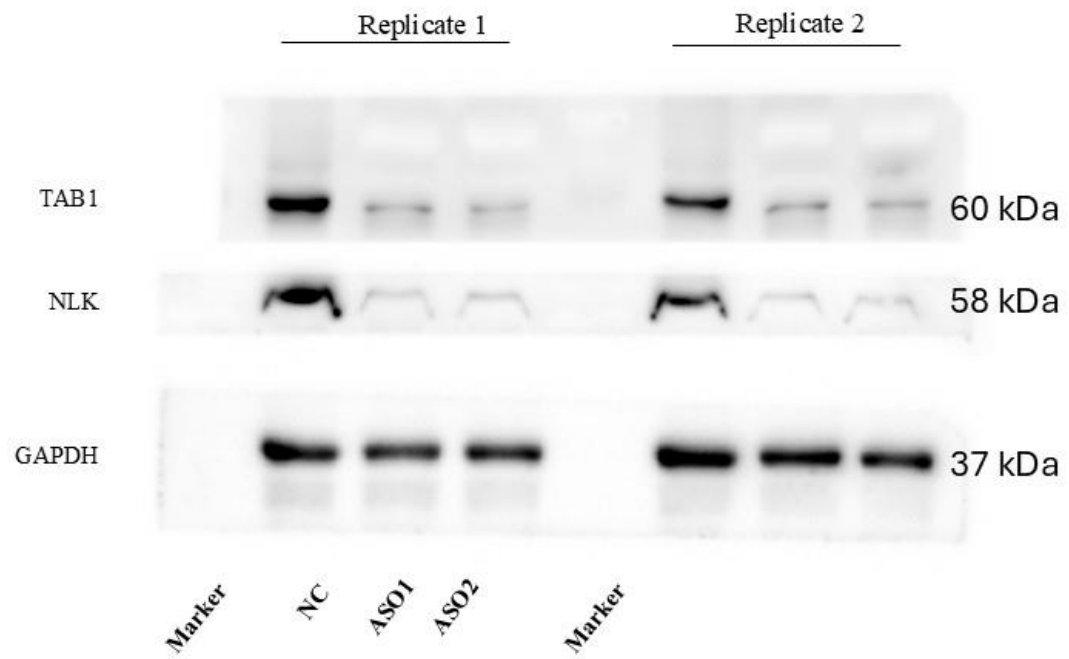
Supplementary Figure 8 Original blots of Figure 3D.



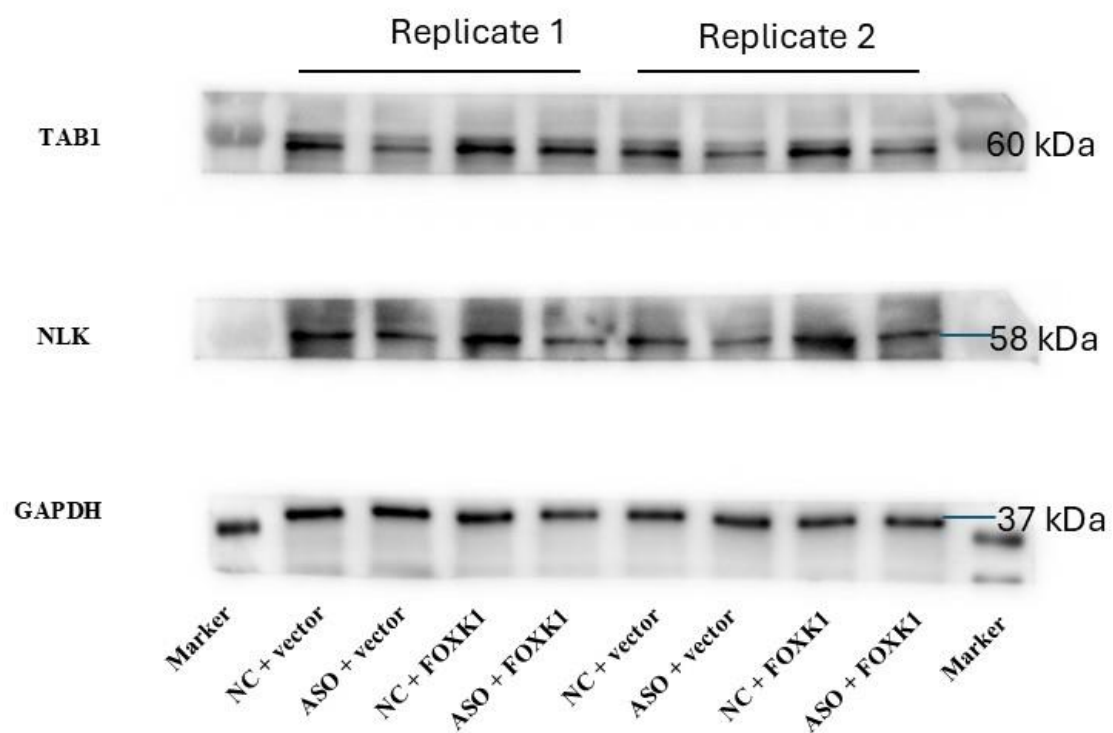
Supplementary Figure 9 Original blots of Figure 3E.



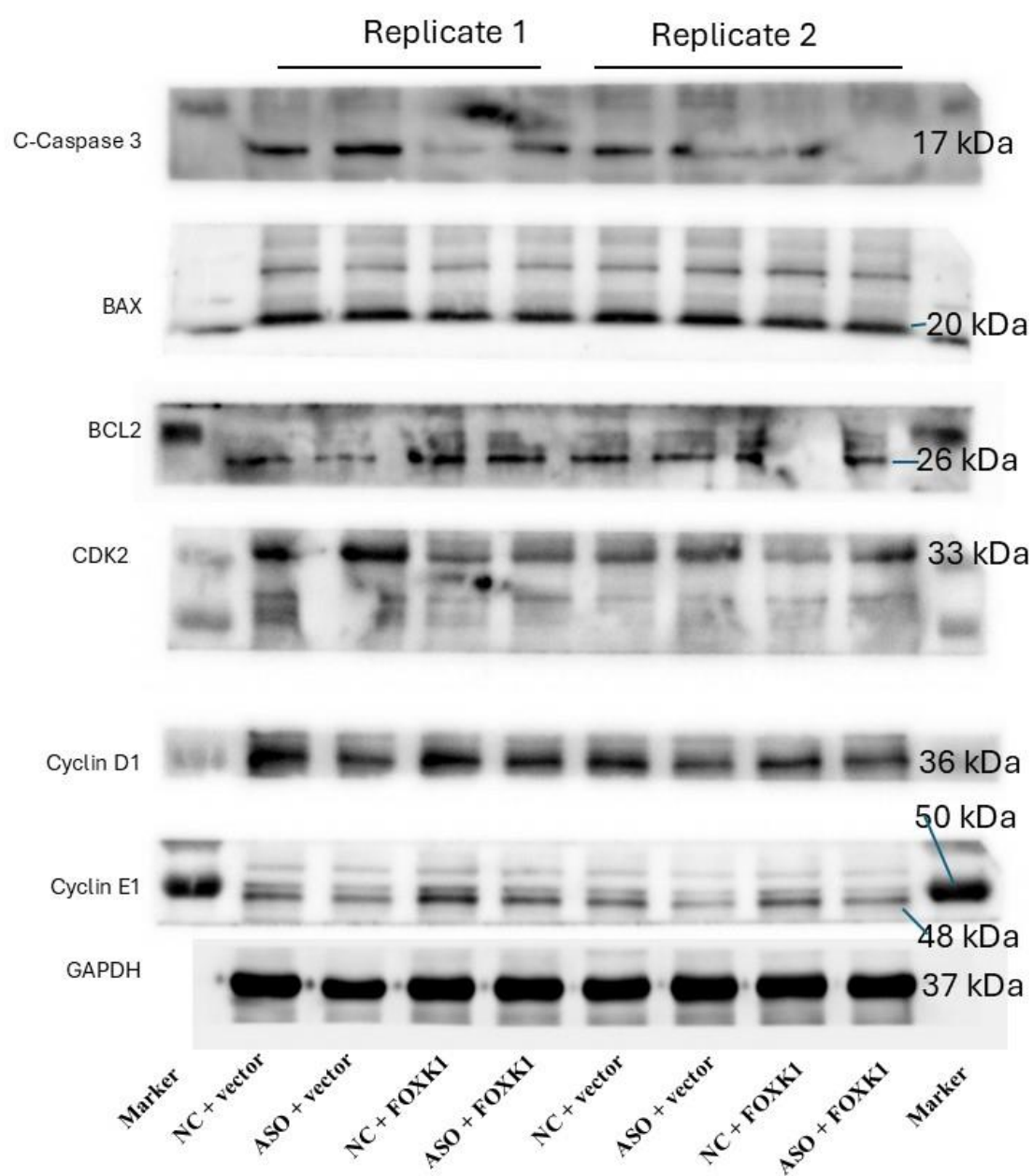
Supplementary Figure 10 Original blots of Figure 5I



Supplementary Figure 11 Original blots of Figure 6G



Supplementary Figure 12 Original blots of Figure 6H.



Supplementary Figure 13 Original blots of Figure 6I.

Supplementary Table 3 List of target sequence of ASO used in this study.

Name	Target sequence
ASO-1	GGTAATCACCTGCAGCACCT
ASO-2	CCATATTACAGAGCCAGAAG

Supplementary Table 4 List of primers used in this study.

Genes	Sequence
GAPDH-Forward	5'- AAGGGCATCTTGGGCTACAC -3'
GAPDH-Reverse	5'- CATACCAGGAAATGAGCTTGACA -3'
Inc-POTEM-4:14- Forward	5'-GAGCAGTGGGCGCTAAGTAA -3
Inc-POTEM-4:14- Reverse	5'-TGGCACCTCTATGAAGCCAG -3
FOXK1- Reverse	5'- ACCGGAAGGTACACTGCTTG-3'
FOXK1- Forward	5'- CGCGAGTTCGAGTTCCTCAT-3'
NLK- Reverse	5'- GAGTACAGGAAGAGATGGCTGTTT-3'
NLK- Forward	5'- CTGATGGGCAGCCGTCATTA-3'
TAB1- Reverse	5'- TTAAGGTCGGGCTTTGGTTGG-3'
TAB1- Forward	5'- ACGAGGACATGACCCTGCTA-3'
FOXK1/TAB1 Reverse	5'- GTCCAAACTCGGAGAAGGAGC-3'
FOXK1/TAB1 Forward	5'- CTGCAGAGTGTGAGGAACAGG-3'
FOXK1/NLK Reverse	5'- ATTGGTTCTTTTCGTTCCGCC-3'
FOXK1/NLK Forward	5'- CAGAGTTTGGCTTGACCGAC-3'

Supplementary Table 5 List of screened FOXK1 possible target gene in this study.

gene_name	ID	log2FoldChange	pvalue	padj	change
TAB1	ENSG00000100324	-0.26566	0.020376	0.14368	DOWN
TRAF2	ENSG00000127191	0.253124	0.000705	0.011822	UP
SRF	ENSG00000112658	0.193715	0.014204	0.111583	UP
NRAS	ENSG00000213281	0.143651	0.00516	0.055515	UP
ATF4	ENSG00000128272	0.131367	0.002306	0.029875	UP