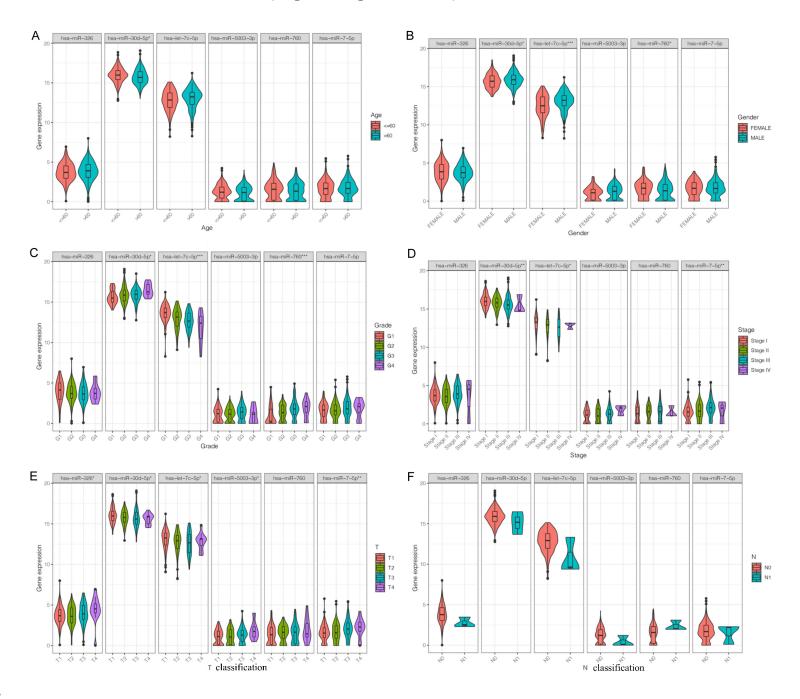


Figure S1. Correlation analysis among six miRNAs. A, B. Pearson correlation analysis of the six miRNAs in HCC.



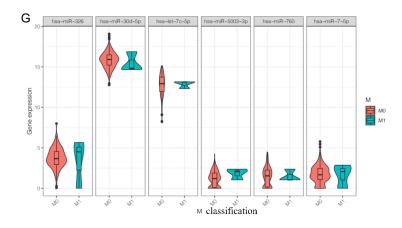
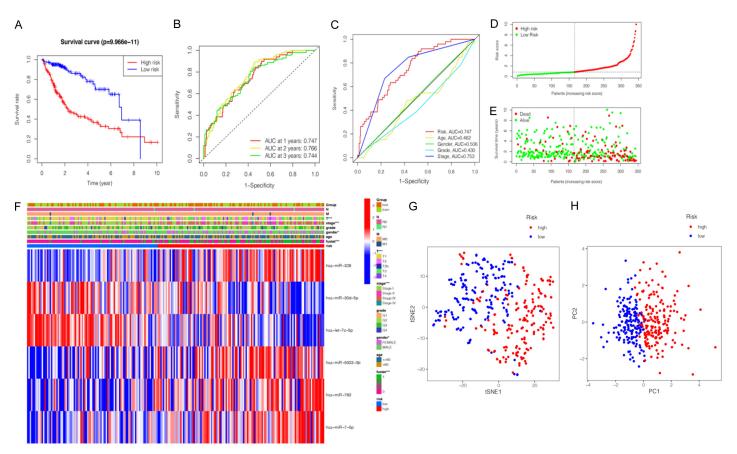


Figure S2. The relationships between six miRNAs and clinicopathological parameters. (A) age (B) gender (C) clinical grade (D) clinical stage (E) T classification (F) N classification (G) M classification.



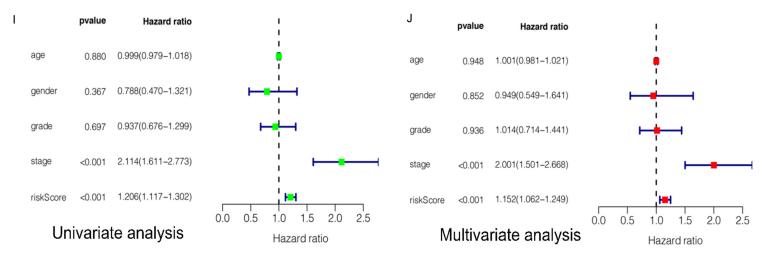


Figure S3. Validation and evaluation prognostic miRNA-related signature for hepatocellular carcinoma (HCC) in entire cohort. (A) Kaplan-Meier survival curves for the high- and low-risk subgroups. (B) Time dependent receiver operating characteristic (ROC) curves of prognostic signature predicting the overall survival (OS) at 1-, 2-, and 3-years. (C) ROC curves for prognostic signature and other clinical pathological characteristics in predicting the OS of HCC patients. (D) Distribution of miRNA-related risk score between the high- and low-risk subgroups. (E) Distribution of survival status of HCC patients in high- and low-risk subgroups. (F) Heatmap showed the relationship between the expression levels of six miRNAs and other clinicopathological factors. (G, H) Principal component analysis (PCA) and t-distributed stochastic neighbor embedding (t-SNE) of prognostic signature between the high-risk and low-risk subgroups. (I) Univariate Cox regression analyses of prognostic signature and other clinicopathological characteristics. (J) Multivariate Cox regression analyses prognostic signature and other clinicopathological characteristics.

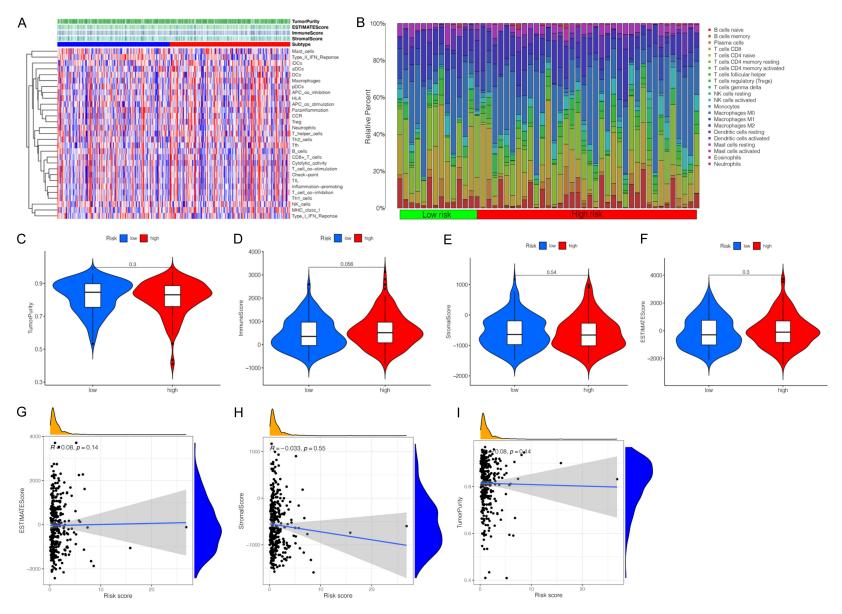
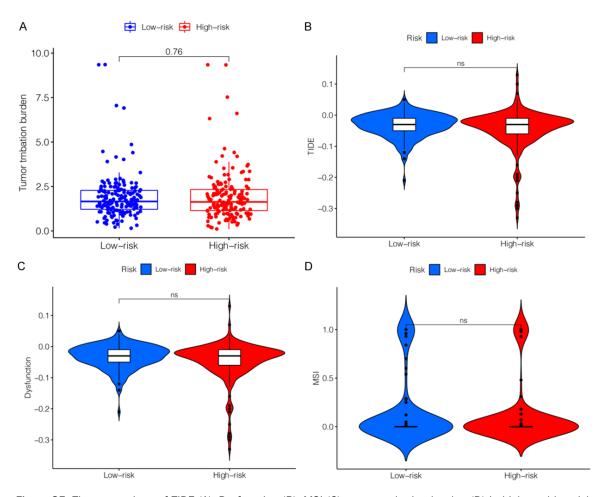


Figure S4. The relationships between miRNA signature and tumor immune microenvironment (TIME). A. Heatmap for the immune cells infiltrating status between low- and high-risk subgroups. B. The composition of tumor-related immune cells in two risk subgroups. C-F. The comparison of TumorPurity, ImmuneScore, StromaScore, ESTIMATEScore in high- and low-risk subgroups. G-I. Correlation between the risk score and ESTIMATEScore, StromaScore, TumorPurity.



 $\textbf{Figure S5.} \ \, \textbf{The comparison of TIDE (A), Dysfunction (B), MSI (C), tumor tmbation burden (D) in high- and low-risk subgroups. }$

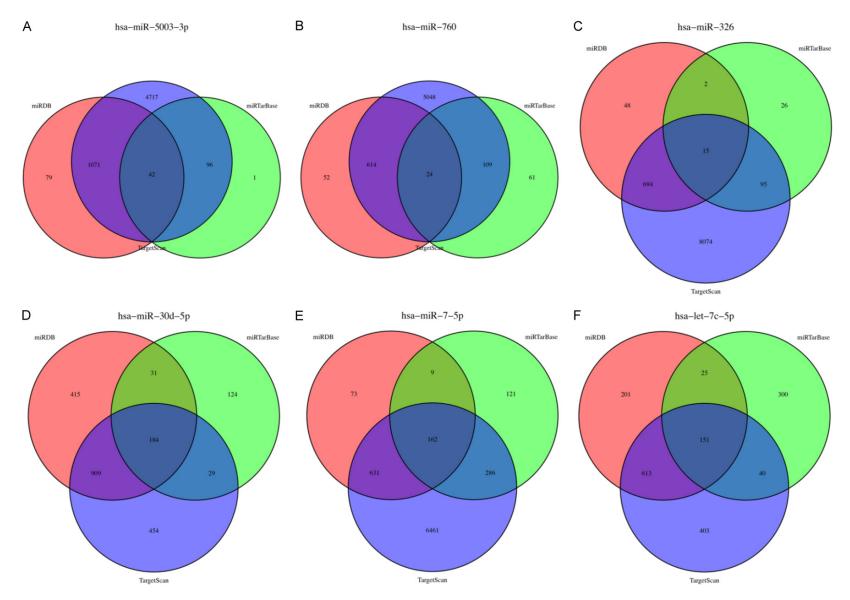


Figure S6. Venn diagram depicting overlap to display co-expression target genes of six miRNAs among three online databases. (A) hsa-miR-5003-3p, (B) hsa-miR-760, (C) hsa-miR-326, (D) hsa-miR-30d-5p, (E) hsa-miR-7-5p, (F) hsa-let-7c-5p.

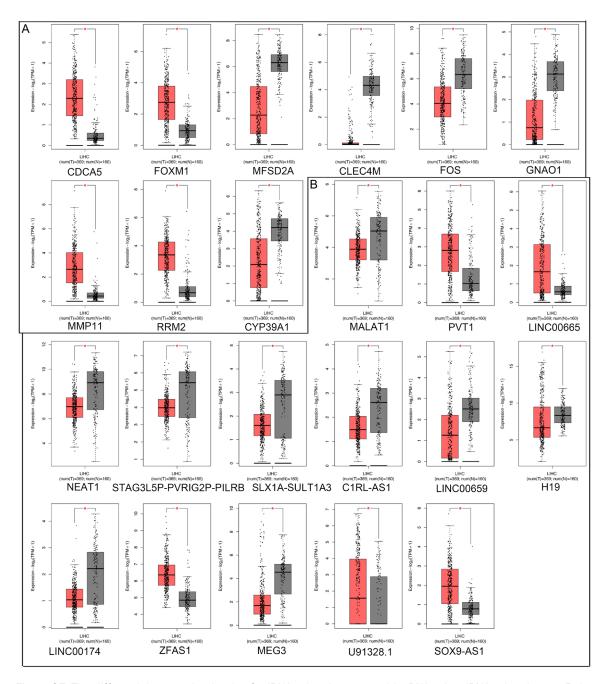


Figure S7. The differential expression levels of miRNA related genes and IncRNAs. A. miRNA related gene. B. IncRNAs.