

Description of Additional Supplementary Files

File name: Supplementary Data 1

File description: Median Methylation Levels of the Training Cohort for Selected Genes

This table presents the median methylation levels of the training cohort for the genes AHNAK, NBP3, RNMTL1P1, VMP1, GLRX2, MAP1LC3B2, STAP1, and the non-gene-specific site cg09435170. The training cohort includes a total of 161 samples, divided into 34 control samples, 74 Stage C HCC patients, and 53 Stage D HCC patients.

File name: Supplementary Data 2

File description: Median Methylation Levels of the Validation Cohort for Selected Genes

This table presents the median methylation levels of the validation cohort for the genes AHNAK, NBP3, RNMTL1P1, VMP1, GLRX2, MAP1LC3B2, STAP1, and the non-gene-specific site cg09435170. The validation cohort includes a total of 241 samples, divided into 15 control samples, 51 Chronic Hepatitis B (CHB) patients, and HCC patients across various stages: Stage A (34), Stage B (86), Stage C (32), and Stage D (23).

File name: Supplementary Data 3

File description: Summary of Regression Analysis for M8 and M4 Scores in the Training Cohort

This table shows the summary output of the regression analysis for the M8 and M4 scores, developed using the median methylation levels of selected genes. It includes regression statistics, coefficients, and p-values for each gene in both models.

File name: Supplementary Table S4

File description: Best-Fit Values and Regression Analysis for Gene-Specific Methylation Levels

The table provides the regression statistics, including slope, intercepts, standard error, 95% confidence intervals, R-squared, and p-values for the median methylation levels of eight genes in the training cohort. Results show the significance of each gene's methylation in differentiating between control and HCC stages.

File name: Supplementary Data 5

File description: Comparative Overview of Diagnostic Methods for Early-Stage HCC.

This table compares different diagnostic methods and biomarkers for early-stage HCC, including sensitivity, specificity, test type, and literature sources. It also includes the performance of M4 and epiLiver scores alone and in combination with AFP based on the current study.

File name: Supplementary Data 6

File description: The source data for Figs. 1, 2, and 3 are available in Supplementary Data 6