

Supplementary Material

The lnc-MAPKAPK5-AS1 promotes colon cancer-derived liver metastasis via modulating the tumor microenvironment: an *in silico* study and immunohistochemistry validation

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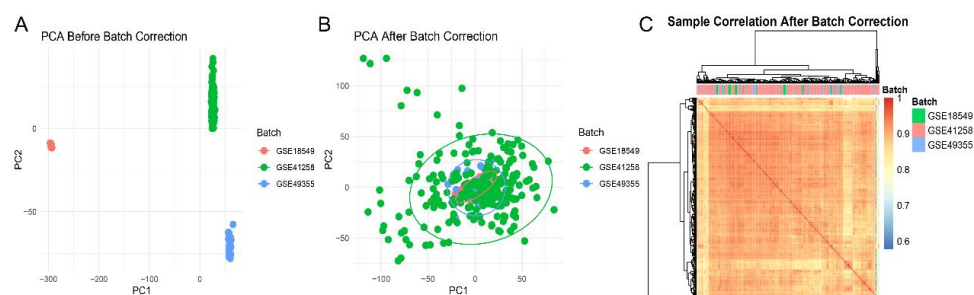
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Supplementary Figure 1. Batch effect assessment and correction validation. (A) Pre-correction PCA demonstrates strong batch separation by source dataset (GSE18549, GSE41258, and GSE49355), indicating significant platform-derived technical variation. (B) Post-ComBat PCA shows effective batch removal with overlapping sample distributions and preserved biological variance in PC1/2. (C) Post-correction heatmap reveals homogeneous sample relationships without residual batch-specific clustering patterns.