



Supplementary Figure S1. Comparative expression of the CC-Iv gene signature between low-grade glioma (LGG) and glioblastoma (GBM) samples obtained from the TCGA dataset using the GEPIA2 platform (<http://gepia2.cancer-pku.cn/>, accessed on 20 October 2025). Box plot showing that CC-Iv signature expression is significantly higher in GBM than in LGG (1.7-fold increase, $p < 0.001$, t -test), supporting the constitutive activation of this signature in HGG.