RBBP4

A study investigated the expression pattern of retinoblastoma binding protein 4 (RBBP4) gene in glioma and explored its associations with clinicopathologic characteristics and prognosis of patients. Data retrieved from the GEPIA, CGGA, HPA and TIMER databases were processed to analyze RBBP4 expression in glioma and investigate its relationship with clinicopathologic characteristics, tumor immune infiltration and prognosis in glioma patients. Immunohistochemistry was applied to determine the expression of RBBP4 protein in glioma tissue. Additionally, the Coexpedia database was visited to identify co-expressed genes for RBBP4 gene, while the Cytoscape software was run to visualize the enriched GO entries and KEGG pathways of these co-expressed genes. The expression levels of RBBP4 in lower-grade glioma (LGG) and glioblastoma (GBM) tissues were markedly elevated when compared to normal tissues (both $p < 0.05$). The up-regulation of RBBP4 expression was associated with an increase in WHO grade (II-IV), wild-type IDH, and 1p/19q non-codeletion (all $p < 0.05$). Multivariate Cox regression analysis showed that both increased abundance of infiltrating macrophages and up-regulated RBBP4 expression independently predicted poor survival outcomes in LGG patients (both $p < 0.05$). Furthermore, RBBP4 expression exhibited significant positive correlations with the abundance of infiltrating B cell, CD8+ T cell, CD4+ T cell, macrophage, neutrophil, and dendritic cell in LGG (all $p < 0.05$). Functional enrichment analyses indicated that the co-expressed genes associated with RBBP4 were highly involved in pathways such as the p53 signaling pathway, cell cycle, DNA replication, glutathione metabolism, as well as biological processes including cell cycle process, DNA replication, and DNA repair. High levels of RBBP4 are predictive for the poor survival outcome of LGG patients. RBBP4 gene, therefore, is expected to be a potential biomarker for prognosis of LGG and a target for immunotherapy [1)]

1)
Liang R, Xiang Y, Hu C, Tang X. Expression and clinical significance of RBBP4 gene in lower-grade glioma: An integrative analysis. Biochem Biophys Rep. 2023 Aug 22;35:101533. doi: 10.1016/j.bbrep.2023.101533. PMID: 37664524; PMCID: PMC10469049.