Poly(C)-binding protein 2 (PCBP2) has been found to have ambiguous functions in a variety of cancers. However, the specific biological function of PCBP2 and its mechanism in glioblastoma remain unclear.

Rho protein GDP dissociation inhibitor α (ARHGDIA) as a target mRNA that binds to PCBP2.

Lin et al. uncovered the role of ARHGDIA as a putative metastasis suppressor through analyses of in vitro and in vivo models of EMT and metastasis. Furthermore, they demonstrated that ARHGDIA is a potential target of miR-151-5p and miR-16 in gliomas. The interaction between PCBP2 and the 3'UTR of the ARHGDIA mRNA may induce a local change in RNA structure that favors subsequent binding of miR-151-5p and miR-16, thus leading to the suppression of ARHGDIA expression. PCBP2 may facilitate miR-151-5p and miR-16 promotion of glioma cell migration and invasion through mitigating the function of ARHGDIA. [1].

Luo et al. investigated the expression of PCBP2 in 143 glioblastoma specimens to explore the linkage between PCBP2 expression and clinicopathological parameters as well as clinical significance. Furthermore, the underlying mechanisms of PCBP2 on glioblastoma progression were discussed in vitro.

The transcriptional and translational levels of PCBP2 in 143 glioblastoma patients were detected by quantitative Real-time PCR (qRT-PCR) and western blot. The association of prognostic outcomes and PCBP2 expression was evaluated using Kaplan-Meier analysis.

PCBP2 expression was markedly increased in higher stages of glioblastoma compared with those in lower stages ($P<0.001$). High expression of PCBP2 was associated with higher clinical stage and histological grade ($P<0.001$). Further research suggested that PCBP2 upregulation was connected with poorer prognosis in patients with glioblastoma ($P<0.001$). Moreover, PCBP2 knockdown could significantly decreased the colony formation and invasion capability of glioblastoma cells ($P<0.01$). Conversely, PCBP2 overexpression could increase the colony formation and invasion capability ($P<0.01$).

These findings indicated that PCBP2 might be a novel prognostic biomarker and a potential therapeutic target of glioblastoma [2].

1)
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2)
Luo K, Zhuang K. High expression of PCBP2 is associated with progression and poor prognosis in patients with glioblastoma. Biomed Pharmacother. 2017 Aug 5;94:659-665. doi: 10.1016/j.biopha.2017.07.103. [Epub ahead of print] PubMed PMID: 28787701.