Epithelial membrane protein 1

The clinical significance and potential function of epithelial membrane protein 1 (EMP1) in malignant gliomas were investigated. Increased EMP1 expression was associated with increasing tumor grade (P<0.001) and worse prognosis in patients (P<0.001) based on The Cancer Genome Atlas, Rembrandt and CGGA databases for human gliomas. In vitro, gene silencing of EMP1 in U87MG and P3 GBM (primary glioma) cells significantly inhibited tumor proliferation and invasion. In addition, it was revealed that activation of the PI3K/AKT/mTOR pathway is the driving force of EMP1-promoted glioma progression. Finally, it was demonstrated, using an intracranial glioblastoma animal model, that EMP1 knockdown significantly inhibits tumor growth in vivo and increases overall survival in tumor-bearing animals. This research provides new insights into the molecular mechanisms underlying EMP1 knockdown-mediated inhibition of GBM cell invasion and raises the possibility that targeting of EMP1 may represent a promising strategy for the treatment of GBM [1].

Wang et al., determined the expression level of EMP1 expression in glioma tissues. There were higher levels of EMP1 in glioma tissues-particularly GBM tissues-than those in normal brain tissues. Then they discovered that silencing EMP1 inhibited glioma cell invasion and proliferation through inhibiting the PI3K-AKT signaling pathway. Subsequently, they investigated the function of EMP1 on glioma stem cells and found that it regulates the expression of CD44 in such cells to promote stemness. Taken together, the new strategies for the treatment of glioma may be provided by these finding, thereby improving the prognosis associated with it [2].

References

1)
Miao L, Jiang Z, Wang J, Yang N, Qi Q, Zhou W, Feng Z, Li W, Zhang Q, Huang B, Chen A, Zhang D, Zhao P, Li X. Epithelial membrane protein 1 promotes glioblastoma progression through the PI3K/AKT/mTOR signaling pathway. Oncol Rep. 2019 Jun 19. doi: 10.3892/or.2019.7204. [Epub ahead of print] PubMed PMID: 31233190.
2)
Wang J, Li X, Wu H, Wang H, Yao L, Deng Z, Zhou Y. EMP1 regulates cell proliferation, migration, and stemness in gliomas through PI3K-AKT signaling and CD44. J Cell Biochem. 2019 May 20. doi: 10.1002/jcb.28974. [Epub ahead of print] PubMed PMID: 31111534.