

# CD146

CD146 is highly expressed in various [malignant tumors](#) and contributes to their malignancy [phenotype](#), which involves metastatic and tumorigenic activity. However, studies on the expression and function of CD146 in [brain tumors](#) are limited.

Yawata et al., over-expressed or knocked-down CD146 in both conventionally cultured [glioma cells](#) and [tumor spheres](#) (TS). The distribution of [glioma cells](#) and their [stem cells](#) in different [cell cycle](#) phases was analyzed by [flow cytometry](#) using the stem cell marker [CD133](#) and the glial precursor marker [A2B5](#). CD146 expression was immunohistochemically examined in glioma tissues.

The majority of [glioma stem cells](#) (GSCs) expressing CD133 were also CD146-positive. CD146 [knockdown](#) in GSCs significantly compromised [cell growth](#). Cell cycle analysis revealed that most of the CD146 and CD133 double-positive cells were in the G2/M phase. Ectopic expression of CD146 in parental glioma cells resulted in cell cycle arrest of most differentiated cells in G0/G1 phase. In contrast, ectopic expression of CD146 in GSCs resulted in an increase in the number of CD133-positive cells in the G2/M phase. Furthermore, CD146 knockdown reduced the number of CD133-positive cells in the G2/M phase, which was consistent with effects of cell growth inhibition. Immunohistochemical analysis revealed that CD146 expression was significantly upregulated in World Health Organization (WHO) Grade III and IV glioma and positively correlated with CD133 expression.

CD146 is mainly expressed in dividing GSCs and may be a potential target for eradicating glioma stem cells <sup>1)</sup>.

<sup>1)</sup>

Yawata T, Higashi Y, Kawanishi Y, Nakajo T, Fukui N, Fukuda H, Ueba T. CD146 is highly expressed in glioma stem cells and acts as a cell cycle regulator. J Neurooncol. 2019 May 30. doi: 10.1007/s11060-019-03200-4. [Epub ahead of print] PubMed PMID: 31147892.

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