5-Aza-dC (Decitabine) treatment combines with anti-PD-1 immunotherapy to efficiently suppress the progression of GL261 gliomas. Data support a mechanism of epigenetic modifications of AP-2α that contributes to tumor immune evasion, and reactivation of AP-2α synergizes with anti-PD-1 antibodies to increase antitumor efficacy, which may be a broadly applicable strategy in solid tumors [1)]

Guo et al. showed that Transforming growth factor Beta induced the downregulation of MST1 expression in U87 and U251 glioma cells. Treatment of glioma cells with the DNA methylation inhibitor Decitabine (5-aza-2'-deoxycytidine 5-AzadC) prevented the loss of MST1 expression. Addition of 5-AzadC also reduced the TGF-β-stimulated proliferation, migration and invasiveness of glioma cells. Furthermore, Knockdown of DNMT1 upregulated MST1 expression in gliomas cells. In addition, the inhibition of DNMT1 blocked TGF-β-induced proliferation, migration and invasiveness in glioma cells. These results suggest that TGF-β promotes glioma malignancy through DNMT1-mediated loss of MST1 expression [2)].

1)
Long S, Huang G, Ouyang M, Xiao K, Zhou H, Hou A, Li Z, Zhong Z, Zhong D, Wang Q, Xiang S, Ding X. Epigenetically modified AP-2α by DNA methyltransferase facilitates glioma immune evasion by upregulating PD-L1 expression. Cell Death Dis. 2023 Jun 17;14(6):365. doi: 10.1038/s41419-023-05878-x. PMID: 37330579.
2)
Guo Z, Li G, Bian E, Ma CC, Wan J, Zhao B. TGF-β-mediated repression of MST1 by DNMT1 promotes glioma malignancy. Biomed Pharmacother. 2017 Aug 9;94:774-780. doi: 10.1016/j.biopha.2017.07.081. [Epub ahead of print] PubMed PMID: 28802229.