Romo1

Reactive oxygen species (ROS) modulator 1 (Romo1) is a mitochondrial membrane protein that is essential for the regulation of mitochondrial ROS production and redox sensing. Although the physiological functions of Romo1 have been studied for the past few years, the role of Romo1 in cancer remained unclear.

In a study, Sun et al. from Yancheng found that the high expression of Romo1 is associated with the poor prognosis of - glioblastoma patients. Further study revealed that Romo1 is highly expressed in macrophages, indicating that the overexpression of Romo1 may participate in the function of macrophages and contribute to the progression of glioblastoma. Through the glioblastoma mouse model, they found that the overexpression of Romo1 in bone marrow cells significantly inhibited the immune response within tumor microenvironment and that the overexpression of Romo1 resulted in the M2 polarization of bone marrow-derived macrophages (BMDMs) through mTORC1 signaling pathway. In addition, the inhibition of Romo1 combining with anti-PD-1 immunotherapy significantly improved the survival outcome of glioblastoma in mouse model. Collectively, ther study highlights the important role of Romo1 in immune response especially the function of macrophages and implicates it as a potential target of glioblastoma immunotherapy [1)].

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