

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⁾.

2: Zhang T, Wu P, Budbazar E, Zhu Q, Sun C, Mo J, Peng J, Gospodarev V, Tang J, Shi H, Zhang JH. Mitophagy Reduces Oxidative Stress Via Keap1 (Kelch-Like Epichlorohydrin-Associated Protein 1)/Nrf2 (Nuclear Factor-E2-Related Factor 2)/PHB2 (Prohibitin 2) Pathway After Subarachnoid Hemorrhage in Rats. Stroke. 2019 Apr;50(4):978-988. doi: 10.1161/STROKEAHA.118.021590. PubMed PMID: 30890112; PubMed Central PMCID: PMC6433519.

3: Yu MO, Song NH, Park KJ, Park DH, Kim SH, Chae YS, Chung YG, Chi SG, Kang SH. Romo1 is associated with ROS production and cellular growth in human gliomas. J Neurooncol. 2015 Jan;121(1):73-81. doi: 10.1007/s11060-014-1608-x. Epub 2014 Sep 6. PubMed PMID: 25193023.

¹⁾

Sun G, Cao Y, Qian C, Wan Z, Zhu J, Guo J, Shi L. Romo1 is involved in the immune response of glioblastoma by regulating the function of macrophages. Aging (Albany NY). 2020 Jan 16;12. doi: 10.18632/aging.102648. [Epub ahead of print] PubMed PMID: 31945745.

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