SRY (sex-determining region Y)-box 2, also known as SOX2, is a transcription factor that is essential for maintaining self-renewal, or pluripotency, of undifferentiated embryonic stem cells. Sox2 has a critical role in maintenance of embryonic and neural stem cells.

Sox2 is a member of the Sox family of transcription factors, which have been shown to play key roles in many stages of mammalian development. This protein family shares highly conserved DNA binding domains known as HMG (High-mobility group) box domains containing approximately 80 amino acids.

Sox2 holds great promise in research involving induced pluripotency, an emerging and very promising field of regenerative medicine.

HIF1A and HIF2A are the two main molecules that contribute to Glioblastoma malignant progression by inhibiting apoptosis or maintaining stemness under hypoxic conditions. Moreover, Sox2, a marker of stemness, also contribute to Glioblastoma malignant progression through stemness maintenance of cell cycle arrest. Briefly, HIF1α, HIF2α, and Sox2 are highly expressed under hypoxia and contribute to Glioblastoma growth and chemoresistance. However, after exposure to HBO for Glioblastoma, whether the expression of the above factors is decreased, resulting in chemosensitization, remains unknown. Therefore, Wang et al. performed a series of studies and determined that the expression of HIF1α, HIF2α, and Sox2 was decreased after HBO and that HBO promoted Glioblastoma cell proliferation through cell cycle progression, albeit with a decrease in stemness, thus contributing to chemosensitization via the inhibition of HIF1α/HIF2α-Sox2 [1].

1)
Wang P, Gong S, Pan J, Wang J, Zou D, Xiong S, Zhao L, Yan Q, Deng Y, Wu N, Liao B. Hyperbaric oxygen promotes not only glioblastoma proliferation but also chemosensitization by inhibiting HIF1α/HIF2α-Sox2. Cell Death Discov. 2021 May 13;7(1):103. doi: 10.1038/s41420-021-00486-0. PMID: 33986256.

From:
https://neurosurgerywiki.com/wiki/ - **Neurosurgery Wiki**

Permanent link:
https://neurosurgerywiki.com/wiki/doku.php?id=sox2

Last update: **2024/06/07 02:55**