SANTA CRUZ BIOTECHNOLOGY, INC.

OLIG2 (1G11): sc-293163

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The oligodendrocyte lineage-specific basic helix-loop-helix (OLIG) family of transcription factors include OLIG1-OLIG3, which differ in tissue expression. OLIG1 and OLIG2 are specifically expressed in nervous tissue as gene regulators of oligodendrogenesis. OLIG2 is more widely expressed in embryonic brain than OLIG1, while OLIG3 is primarily expressed in non-neural tissues. OLIG1 and OLIG2 interact with the Nkx-2.2 homeodomain protein, which is responsible for directing ventral neuronal patterning in response to graded Sonic hedgehog signaling in the embryonic neural tube. These interactions between OLIG proteins and Nkx-2.2 appear to promote the formation of alternate cell types by inhibiting V3 interneuron development. OLIG1 and OLIG2 are abundantly expressed in oligodendroglioma and nearly absent in astrocytomas. Therefore, OLIG proteins are candidates for molecular markers of human glial brain tumors, which are the most common primary malignancies of the human brain.

CHROMOSOMAL LOCATION

Genetic locus: OLIG2 (human) mapping to 21q22.11; Olig2 (mouse) mapping to 16 C3.3.

SOURCE

OLIG2 (1G11) is a mouse monoclonal antibody raised against recombinant protein fragment corresponding to OLIG2 of human origin.

PRODUCT

Each vial contains 50 µl ascites containing IgG_1 kappa light chain with 0.03% sodium azide.

APPLICATIONS

OLIG2 (1G11) is recommended for detection of OLIG2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for OLIG2 siRNA (h): sc-38147, OLIG2 siRNA (m): sc-38148, OLIG2 shRNA Plasmid (h): sc-38147-SH, OLIG2 shRNA Plasmid (m): sc-38148-SH, OLIG2 shRNA (h) Lentiviral Particles: sc-38147-V and OLIG2 shRNA (m) Lentiviral Particles: sc-38148-V.

Molecular Weight of OLIG2: 30/40 kDa.

Positive Controls: human OLIG2 (1-122)-hIgGFc transfected HEK293 whole cell lysate.

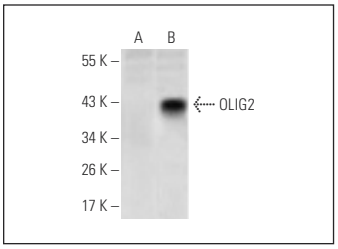
STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



OLIG2 (1G11): sc-293163. Western blot analysis of OLIG2 expression in non-transfected (**A**) and human OLIG2 (1-122)-hIgGFc transfected (**B**) HEK293 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Song, Z., et al. 2018. PTEN-GSK3β-MOB1 axis controls neurite outgrowth *in vitro* and *in vivo*. Cell. Mol. Life Sci. 75: 4445-4464.
2. Lee, J., et al. 2019. Development of a patient-derived xenograft model of glioblastoma via intravitreal injection in mice. Exp. Mol. Med. 51: 1-9.
3. Badimon, A., et al. 2020. Negative feedback control of neuronal activity by microglia. Nature 586: 417-423.
4. Chen, Y., et al. 2021. Claudin-1 and Claudin-3 as molecular regulators of myelination in leukoaraiosis patients. Clinics 76: e2167.
5. Sabzalizadeh, M., et al. 2021. Transplantation of rat dental pulp stem cells facilities post-lesion recovery in the somatosensory whisker cortex of male Wistar rats. Brain Res. Bull. 173: 150-161.
6. He, Z.C., et al. 2022. HOXA5 is amplified in glioblastoma stem cells and promotes tumor progression by transcriptionally activating PTPRZ1. Cancer Lett. 533: 215605.
7. Farid, M.F., et al. 2022. A novel cell-free intrathecal approach with PRP for the treatment of spinal cord multiple sclerosis in cats. Inflamm. Regen. 42: 45.
8. Kim, E.B., et al. 2022. Antiacne and anti-inflammatory effects of phenolic compounds from *Quercus acutissima* Carruth. leaves. Evid. Based Complement. Alternat. Med. 2022: 9078475.
9. Farid, M.F., et al. 2023. Laser-activated autologous adipose tissue-derived stromal vascular fraction restores spinal cord architecture and function in multiple sclerosis cat model. Stem Cell Res. Ther. 14: 6.
10. Wu, W., et al. 2023. Supramolecular hydrogel microspheres of platelet-derived growth factor mimetic peptide promote recovery from spinal cord injury. ACS Nano 17: 3818-3837.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.