SANTA CRUZ BIOTECHNOLOGY, INC.

OLIG1 (G-3): sc-166256



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.

REFERENCES

- Briscoe, J., et al. 1999. Homeobox gene Nkx2.2 and specification of neuronal identity by graded Sonic hedgehog signalling. Nature 398: 622-627.
- Takebayashi, H., et al. 2000. Dynamic expression of basic helix-loop-helix OLIG family members: implication of OLIG2 in neuron and oligodendrocyte differentiation and identification of a new member, OLIG3. Mech. Dev. 99: 143-148.

CHROMOSOMAL LOCATION

Genetic locus: OLIG1 (human) mapping to 21q22.11; Olig1 (mouse) mapping to 16 C3.3.

SOURCE

OLIG1 (G-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 183-217 within an internal region of OLIG1 of human origin.

PRODUCT

Each vial contains 200 μg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

OLIG1 (G-3) is available conjugated to agarose (sc-166256 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166256 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166256 PE), fluorescein (sc-166256 FITC), Alexa Fluor[®] 488 (sc-166256 AF488), Alexa Fluor[®] 546 (sc-166256 AF546), Alexa Fluor[®] 594 (sc-166256 AF594) or Alexa Fluor[®] 647 (sc-166256 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-166256 AF680) or Alexa Fluor[®] 790 (sc-166256 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166256 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

OLIG1 (G-3) is recommended for detection of OLIG1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (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 OLIG1 siRNA (h): sc-91434, OLIG1 siRNA (m): sc-38146, OLIG1 shRNA Plasmid (h): sc-91434-SH, OLIG1 shRNA Plasmid (m): sc-38146-SH, OLIG1 shRNA (h) Lentiviral Particles: sc-91434-V and OLIG1 shRNA (m) Lentiviral Particles: sc-38146-V.

Molecular Weight of OLIG1: 30 kDa.

Positive Controls: OLIG1 (h): 293T Lysate: sc-113928.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA





OLIG1 (G-3): sc-166256. Western blot analysis of OLIG1 expression in non-transfected: sc-11752 (**A**) and human OLIG1 transfected: sc-113928 (**B**) 293T whole cell lysates.

OLIG1 (G-3): sc-166256. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization

SELECT PRODUCT CITATIONS

 Chen, X., et al. 2022. White matter damage as a consequence of vascular dysfunction in a spontaneous mouse model of chronic mild chronic hypoperfusion with eNOS deficiency. Mol. Psychiatry 27: 4754-4769.

STORAGE

Store at 4° C, **D0 NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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