SANTA CRUZ BIOTECHNOLOGY, INC.

OLIG2 (H-10): sc-515947

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.

REFERENCES

1. Briscoe, J., et al. 1999. Homeobox gene Nkx2.2 and specification of neuronal identity by graded Sonic hedgehog signalling. Nature 398: 622-627.
2. Zhou, Q., et al. 2000. Identification of a novel family of oligodendrocyte lineage-specific basic helix-loop-helix transcription factors. Neuron 25: 331-343.
3. 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: OLIG2 (human) mapping to 21q22.11; Olig2 (mouse) mapping to 16 C3.3.

SOURCE

OLIG2 (H-10) is a mouse monoclonal antibody raised against amino acids 11-78 mapping near the N-terminus of OLIG2 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.

OLIG2 (H-10) is available conjugated to agarose (sc-515947 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515947 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515947 PE), fluorescein (sc-515947 FITC), Alexa Fluor® 488 (sc-515947 AF488), Alexa Fluor® 546 (sc-515947 AF546), Alexa Fluor® 594 (sc-515947 AF594) or Alexa Fluor® 647 (sc-515947 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515947 AF680) or Alexa Fluor® 790 (sc-515947 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

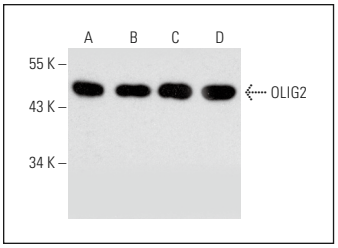
OLIG2 (H-10) is recommended for detection of OLIG2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) 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.

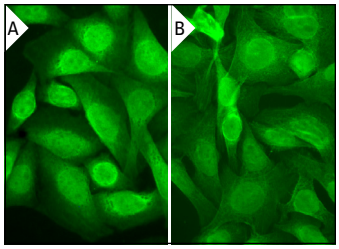
Molecular Weight of OLIG2: 30/40 kDa.

Postive Controls: U-87 MG cell lysate: sc-2411, ES-D3 whole cell lysate: sc-364776 or Neuro-2A whole cell lysate: sc-364185.

DATA



OLIG2 (H-10): sc-515947. Western blot analysis of OLIG2 expression in U-87 MG (**A**), ES-D3 (**B**), Neuro-2A (**C**) and C6 (**D**) whole cell lysates.



OLIG2 (H-10) Alexa Fluor® 488: sc-515947 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing nuclear and cytoplasmic localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (**A**,**B**).

SELECT PRODUCT CITATIONS

1. Bejoy, J., et al. 2020. Wnt-Notch signaling interactions during neural and astroglial patterning of human stem cells. Tissue Eng. Part A 26: 419-431.
2. Lee, J.E., et al. 2021. OLIG2 regulates p53-mediated apoptosis, migration and invasion of melanoma cells. Sci. Rep. 11: 7778.
3. Mifflin, L., et al. 2021. A RIPK1-regulated inflammatory microglial state in amyotrophic lateral sclerosis. Proc. Natl. Acad. Sci. USA 118: e2025102118.
4. Lim, Y.A., et al. 2024. Hope for vascular cognitive impairment: Ac-YVAD-cmk as a novel treatment against white matter rarefaction. PLoS ONE 19: e0299703.

STORAGE

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

PROTOCOLS

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