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# OLIG2 (B-5): sc-518069

## 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., Sussel, L., Serup, P., Hartigan-O'Connor, D., Jessell, T.M., Rubenstein, J.L. and Ericson, J. 1999. Homeobox gene Nkx2.2 and specification of neuronal identity by graded Sonic hedgehog signalling. *Nature* 398: 622-627.
2. Zhou, Q., Wang, S. and Anderson, D.J. 2000. Identification of a novel family of oligodendrocyte lineage-specific basic helix-loop-helix transcription factors. *Neuron* 25: 331-343.
3. Takebayashi, H., Yoshida, S., Sugimori, M., Kosako, H., Kominami, R., Nakafuku, M. and Nabeshima, Y. 2000. Dynamic expression of basic helix-loop-helix family members: implication of Olig2 in neuron and oligodendrocyte differentiation and identification of a new member, Olig3. *Mech. Dev.* 99: 143-148.
4. Sun, T., Echelard, Y., Lu, R., Yuk, D., Kaing, S., Stiles, C.D. and Rowitch, D.H. 2001. Olig bHLH proteins interact with homeodomain proteins to regulate cell fate acquisition in progenitors of the ventral neural tube. *Curr. Biol.* 11: 1413-1420.
5. Lu, Q.R., Park, J.K., Noll, E., Chan, J.A., Alberta, J., Yuk, D., Alzamora, M.G., Louis, D.N., Stiles, C.D., Rowitch, D.H. and Black, P.M. 2001. Oligodendrocyte lineage genes (OLIG) as molecular markers for human glial brain tumors. *Proc. Natl. Acad. Sci. USA* 98: 10851-10856.

## CHROMOSOMAL LOCATION

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

## SOURCE

OLIG2 (B-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 6-30 near the N-terminus of OLIG2 of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>3</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

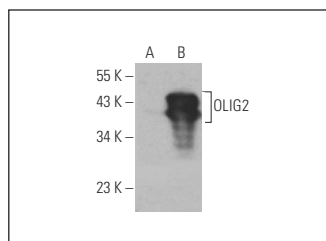
OLIG2 (B-5) is recommended for detection of OLIG2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) 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.

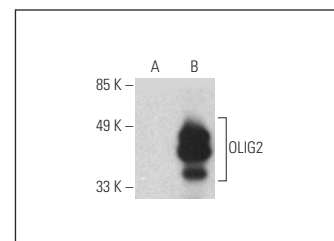
Molecular Weight of OLIG2: 30/40 kDa.

Positive Controls: human OLIG2 transfected HEK293T whole cell lysate or mouse OLIG2 transfected HEK293T whole cell lysate.

## DATA



OLIG2 (B-5): sc-518069. Western blot analysis of OLIG2 expression in non-transfected (A) and human OLIG2 transfected (B) HEK293T whole cell lysates.



OLIG2 (B-5): sc-518069. Western blot analysis of OLIG2 expression in non-transfected (A) and mouse OLIG2 transfected (B) HEK293T whole cell lysates. Detection reagent used: m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM.

## STORAGE

Store at 4° C, **\*\*DO 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.