

OLIG1 (h): 293T Lysate: sc-113928

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 Nkx-2.2 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 OLIG 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: OLIG1 (human) mapping to 21q22.11.

PRODUCT

OLIG1 (h): 293T Lysate represents a lysate of human OLIG1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

OLIG1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive OLIG1 antibodies. Recommended use: 10-20 µl per lane.

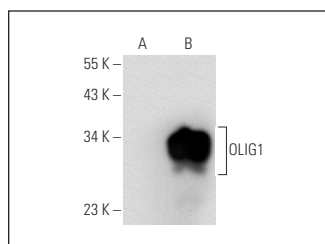
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

OLIG1 (E-12): sc-166257 is recommended as a positive control antibody for Western Blot analysis of enhanced human OLIG1 expression in OLIG1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

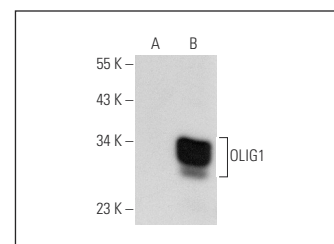
RECOMMENDED SUPPORT REAGENTS

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.

DATA



OLIG1 (E-12): sc-166257. Western blot analysis of OLIG1 expression in non-transfected: sc-117752 (A) and human OLIG1 transfected: sc-113928 (B) 293T whole cell lysates.



OLIG1 (G-3): sc-166256. Western blot analysis of OLIG1 expression in non-transfected: sc-117752 (A) and human OLIG1 transfected: sc-113928 (B) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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