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# OLIG1 Antibody

Catalog # ASC11782

## Product Information

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| **Application** | WB, IF, E, IHC-P |
| **Primary Accession** | Q8TAK6 |
| **Other Accession** | NP_620450, 237757328 |
| **Reactivity** | Human |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Isotype** | IgG |
| **Calculated MW** | 27905 |
| **Concentration (mg/ml)** | 1 mg/mL |
| **Conjugate** | Unconjugated |
| **Application Notes** | OLIG1 antibody can be used for detection of OLIG1 by Western blot at 1 - 2 g/ml. Antibody can also be used for Immunohistochemistry at 5 g/mL. For Immunoflorescence start at 20 g/mL. |

## Additional Information

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| **Gene ID** | 116448 |
| **Other Names** | Oligodendrocyte transcription factor 1, Oligo1, Class B basic helix-loop-helix protein 6, bHLHb6, Class E basic helix-loop-helix protein 21, bHLHe21, OLIG1, BHLHB6, BHLHE21 |
| **Target/Specificity** | OLIG1; OLIG1 antibody is human specific. It is predicted to not cross-react with other members of the OLIG family of proteins. |
| **Reconstitution & Storage** | OLIG1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. |
| **Precautions** | OLIG1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| **Name** | OLIG1 |
| **Synonyms** | BHLHB6, BHLHE21 |
| **Function** | Orchestrates progenitor cell fates during cortical gliogenesis and gliomagenesis. In cooperation with OLIG2, activates oligodendrocyte precursor cells (OPCs) formation while repressing the generation of olfactory bulb interneuron intermediate progenitors (OBIN) through transcriptional regulation of GSX2. Mechanistically, binds and silences multiple conserved enhancer elements of GSX2. Cooperates with OLIG2 to establish the pMN domain of the embryonic neural tube (By similarity). |

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| **Cellular Location** | Nucleus {ECO:0000255\|PROSITE-ProRule:PRU00981}. |
| **Tissue Location** | Expressed in the brain, in oligodendrocytes. Strongly expressed in oligodendrogliomas, while expression is weak to moderate in astrocytomas. Expression in glioblastomas is highly variable. |

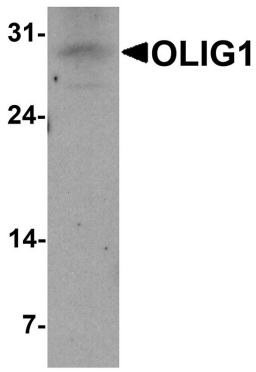
## Background

The oligodendrocyte transcription factors 1 and 2 (OLIG1 and OLIG2, respectively) make up part of basic helix-loop-helix (bHLH) family of transcription factors that are specifically expressed in zones of the neuroepithelium from which oligodendrocyte precursors emerge (1). Both OLIG1 and OLIG2 genes are downstream targets of Sonic hedgehog and are expressed exclusively in the central nervous system (2). OLIG1 is first expressed in the dorsal portion of the p3 progenitor domain of the ventral neural tube while OLIG2 is first observed in the ventral most p3 domain (2). OLIG1 has been shown to be a SMAD cofactor involved in cell motility induced by transforming growth factor-beta (TGF-beta) (3).

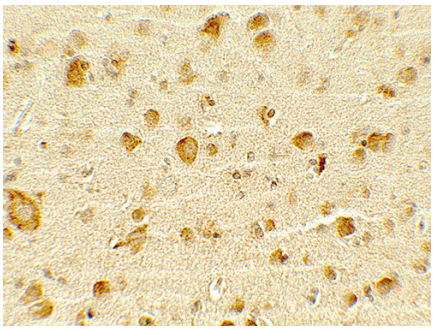
## References

Zhou Q, Wang S, and Anderson DJ. Identification of a novel family of oligodendrocyte lineage-specific basic helix-loop-helix transcription factors. Neuron 2000; 25:331-43.
Lu QR, Yuk D, Alberta JA, et al. Sonic Hedgehog-regulated oligodendrocyte lineage genes encoding bHLH proteins in the mammalian central nervous system. Neuron 2000; 25:317-29.
Motizuki M, Isogaya K, Miyake K, et al. Oligodendrocyte transcription factor 1 (Olig1) is a Smad cofactor involved in cell motility induced by transforming growth factor-b. J. Biol. Chem. 2013; 288:18911-22.

## Images

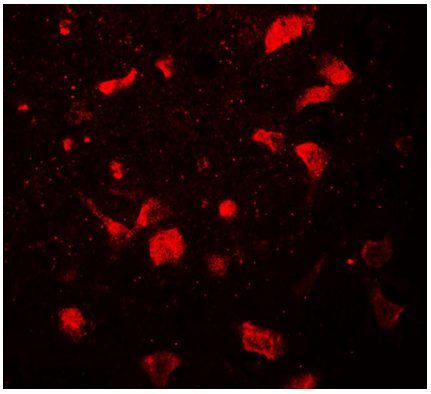



Western blot analysis of OLIG1 in A549 cell lysate with OLIG1 antibody at 1 µg/ml.



Immunohistochemistry of OLIG1 in human brain tissue with OLIG1 antibody at 5 µg/mL.

Immunofluorescence of OLIG1 in human brain tissue with OLIG1 antibody at 20 µg/mL.



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