10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

OLIG2 Antibody

Catalog # ASC11783

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q13516
Other Accession	NP_005797, 17978475
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	32385
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	OLIG2 antibody can be used for detection of OLIG2 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

Gene ID	10215
Other Names	Oligodendrocyte transcription factor 2, Oligo2, Class B basic helix-loop-helix protein 1, bHLHb1, Class E basic helix-loop-helix protein 19, bHLHe19, Protein kinase C-binding protein 2, Protein kinase C-binding protein RACK17, OLIG2, BHLHB1, BHLHE19, PRKCBP2, RACK17
Target/Specificity	OLIG2; OLIG2 antibody is human, mouse and rat reactive. It is predicted to not cross-react with other members of the OLIG family of proteins. At least three isoforms of OLIG2 are known to exist; this antibody will detect all three isoforms.
Reconstitution & Storage	OLIG2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	OLIG2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	OLIG2
Synonyms	BHLHB1, BHLHE19, PRKCBP2, RACK17
Function	Required for oligodendrocyte and motor neuron specification in the spinal cord, as well as for the development of somatic motor neurons in the hindbrain. Functions together with ZNF488 to promote oligodendrocyte differentiation. Cooperates with OLIG1 to establish the pMN domain of the

	embryonic neural tube. Antagonist of V2 interneuron and of NKX2-2-induced V3 interneuron development.
Cellular Location	Nucleus {ECO:0000255|PROSITE-ProRule:PRU00981}. Cytoplasm. Note=The NLS contained in the bHLH domain could be masked in the native form and translocation to the nucleus could be mediated by interaction either with class E bHLH partner protein or with NKX2-2.
Tissue Location	Expressed in the brain, in oligodendrocytes. Strongly expressed in oligodendrogliomas, while expression is weak to moderate in astrocytomas. Expression in glioblastomas highly variable

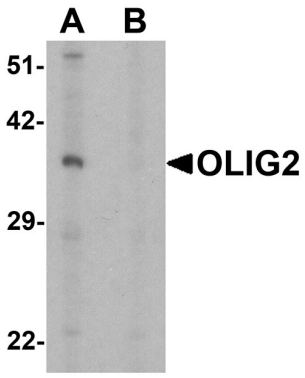
Background

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). OLIG2 is first observed in the ventral most p3 progenitor domain of the ventral neural tube while OLIG1 is first expressed in the dorsal portion of the p3 domain (2). Mice overexpressing OLIG2 exhibit impaired potassium channel expression in neural progenitors and proliferation of these cells similar to that seen in Down Syndrome, suggesting that OLIG2 may play a role in this pathology (3).

References

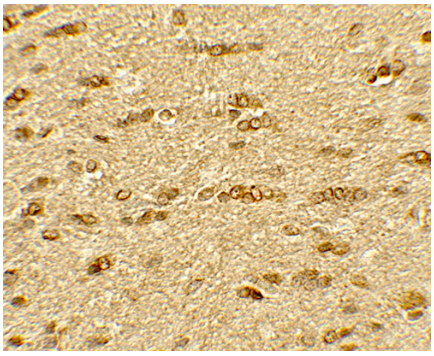
Zhou Q, Wang S, and Anderson DJ. Identification of a novel family of oligodendrocyte lineage-specific basic helix-loop-helix transcription factors. Neuron 2000; 25:331-43.
Lu QR, Yuk D, Alberta JA, et al. Sonic Hedgehog-regulated oligodendrocyte lineage genes encoding bHLH proteins in the mammalian central nervous system. Neuron 2000; 25:317-29.
Lu J, Lian G, Zhou H, et al. OLIG2 over-expression impairs proliferation of human Down syndrome neural progenitors. Hum. Mol. Genet. 2012; 21:2330-40.

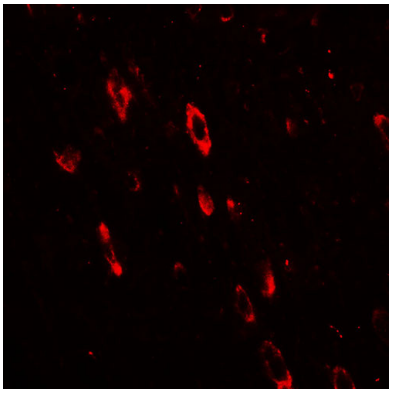
Images



Western blot analysis of OLIG2 in EL4 cell lysate with OLIG2 antibody at 1 µg/ml in (A) the absence and (B) the presence of blocking peptide.

Immunohistochemistry of OLIG2 in rat brain tissue with OLIG2 antibody at 5 µg/mL.





Immunofluorescence of OLIG2 in rat brain tissue with OLIG2 antibody at 20 µg/mL.