SANTA CRUZ BIOTECHNOLOGY, INC.

UNC5H3 (Zg06): sc-80422

BACKGROUND

The UNC5H family of proteins act as transmembrane receptors for netrin-1 and play a crucial role in axon guidance and migration of neural cells. Additionally, UNC5H receptors induce apoptosis when cleaved by a caspase, producing an intracellular fragment containing a death domain. This activity is blocked by the binding of netrin-1. In the absence of netrin-1, UNC5H receptors act as tumor suppressors by inhibiting anchorage-independent growth and invasion, but mutation of these receptors provides a potential mechanism for tumorigenicity. The expression of UNC5H receptors is downregulated in multiple cancers, including colorectal, breast, ovary, uterus, stomach, lung and kidney cancers. UNC5H3, also known as UNC5C, plays an important role in the development of spinal accessory motor neurons. It is also involved in mediating the repulsive action for netrin-1 and it serves as a stop signal for migratory cells.

REFERENCES

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2. Komatsuzaki, K., et al. 2002. Modulation of $G_{i\ \alpha 2}$ signaling by the axonal guidance molecule Unc5H2. Biochem. Biophys. Res. Commun. 297: 898-905.
3. Thiebault, K., et al. 2003. The netrin-1 receptors Unc5H are putative tumor suppressors controlling cell death commitment. Proc. Natl. Acad. Sci. USA 100: 4173-4178.
4. Kruger, R.P., et al. 2004. Mapping netrin receptor binding reveals domains of Unc5 regulating its tyrosine phosphorylation. J. Neurosci. 24: 10826-10834.
5. Kuramoto, T., et al. 2004. Rat neurological mutations cerebellar vermis defect and hobble are caused by mutations in the netrin-1 receptor gene Unc5H3. Brain Res. Mol. Brain Res. 122: 103-108.
6. Klar, J., et al. 2005. RAR-related orphan receptor A isoform 1 (RORα1) is disrupted by a balanced translocation t(4;15)(q22.3;q21.3) associated with severe obesity. Eur. J. Hum. Genet. 13: 928-934.
7. Dillon, A.K., et al. 2007. Unc5C is required for spinal accessory motor neuron development. Mol. Cell. Neurosci. 35: 482-489.
8. Matilainen, T., et al. 2007. Analysis of netrin-1 receptors during inner ear development. Int. J. Dev. Biol. 51: 409-414.
9. Schmid, T., et al. 2007. NSCL-1 and -2 control the formation of precerebellar nuclei by orchestrating the migration of neuronal precursor cells. J. Neurochem. 102: 2061-2072.

CHROMOSOMAL LOCATION

Genetic locus: UNC5C (human) mapping to 4q22.3; Unc5c (mouse) mapping to 3 H1.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

SOURCE

UNC5H3 (Zg06) is a mouse monoclonal antibody raised against an extracellular domain of UNC5H3 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and protein stabilizer.

APPLICATIONS

UNC5H3 (Zg06) is recommended for detection of UNC5H3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with Unc5H4.

Suitable for use as control antibody for UNC5H3 siRNA (h): sc-72284, UNC5H3 siRNA (m): sc-72285, UNC5H3 shRNA Plasmid (h): sc-72284-SH, UNC5H3 shRNA Plasmid (m): sc-72285-SH, UNC5H3 shRNA (h) Lentiviral Particles: sc-72284-V and UNC5H3 shRNA (m) Lentiviral Particles: sc-72285-V.

Molecular Weight of UNC5H3: 130 kDa.

SELECT PRODUCT CITATIONS

1. Huang, D., et al. 2016. VEGF-B inhibits hyperglycemia- and Macugen-induced retinal apoptosis. Sci. Rep. 6: 26059.

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.