SANTA CRUZ BIOTECHNOLOGY, INC.

Dorfin (C-19): sc-55808



BACKGROUND

Dorfin (double ring-finger protein), also known as RNF19A or RNF19, is a multi-pass membrane, RING-IBR type, E3 ubiquitin-protein ligase. It is widely expressed with highest levels found in heart and ubiquitous expression throughout the central nervous system. Dorfin functions by accepting ubiquitin in the form of a thioester from UBCH7 and UBC8 and then transferring it to the targeted substrates. Dorfin is responsible for ubiquitylating synphilin-1, CaSR and mutant variants of SOD-1, a protein at fault for familial ALS (amy-otrophic lateral sclerosis). Dorfin physically interacts with VCP (valosin-containing protein) via its C-terminus. Together these two proteins are associated with the formation of ubiquitylated inclusions (UBIs) that characterize many neurodegenerative disorders, such as Parkinson's disease and ALS. This association with UBIs suggests that Dorfin plays an important role in the disease process.

REFERENCES

- 1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607119. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
- Hishikawa, N., et al. 2003. Dorfin localizes to the ubiquitylated inclusions in Parkinson's disease, dementia with Lewy bodies, multiple system atrophy, and amyotrophic lateral sclerosis. Am. J. Pathol. 163: 609-619.
- Ito, T., et al. 2003. Dorfin localizes to Lewy bodies and ubiquitylates synphilin-1. J. Biol. Chem. 278: 29106-29114.
- Ishigaki, S., et al. 2004. Physical and functional interaction between Dorfin and Valosin-containing protein that are colocalized in ubiquitylated inclusions in neurodegenerative disorders. J. Biol. Chem. 279: 51376-51385.
- Takeuchi, H., et al. 2004. Dorfin prevents cell death by reducing mitochondrial localizing mutant superoxide dismutase 1 in a neuronal cell model of familial amyotrophic lateral sclerosis. J. Neurochem. 89: 64-72.
- Huang, Y., et al. 2006. Calcium-sensing receptor ubiquitination and degradation mediated by the E3 ubiquitin ligase Dorfin. J. Biol. Chem. 281: 11610-11617.
- Huang, Y. and Breitwieser, G.E. 2007. Rescue of calcium-sensing receptor mutants by allosteric modulators reveals a conformational checkpoint in receptor biogenesis. J. Biol. Chem. 282: 9517-9525.
- Niwa, J., et al. 2007. Disulfide bond mediates aggregation, toxicity, and ubiquitylation of familial amyotrophic lateral sclerosis-linked mutant SOD1. J. Biol. Chem. 282: 28087-28095.
- Szargel, R., et al. 2008. Synphilin-1 isoforms in Parkinson's disease: regulation by phosphorylation and ubiquitylation. Cell. Mol. Life Sci. 65: 80-88.

CHROMOSOMAL LOCATION

Genetic locus: RNF19A (human) mapping to 8q22.2; Rnf19a (mouse) mapping to 15 B3.1.

SOURCE

Dorfin (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Dorfin of human origin.

PRODUCT

Each vial contains 200 μg lgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-55808 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Dorfin (C-19) is recommended for detection of Dorfin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Dorfin (C-19) is also recommended for detection of Dorfin in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Dorfin siRNA (h): sc-62224, Dorfin siRNA (m): sc-62225, Dorfin shRNA Plasmid (h): sc-62224-SH, Dorfin shRNA Plasmid (m): sc-62225-SH, Dorfin shRNA (h) Lentiviral Particles: sc-62224-V and Dorfin shRNA (m) Lentiviral Particles: sc-62225-V.

Molecular Weight of Dorfin: 91 kDa.

Positive Controls: rat brain extract: sc-2392.

DATA





Dorfin (C-19): sc-55808. Western blot analysis of Dorfin expression in rat brain tissue extract. Dorfin (C-19): sc-55808. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic and membrane staining of myocytes.

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 or our catalog for detailed protocols and support products.