SANTA CRUZ BIOTECHNOLOGY, INC.

UNC-32 (cD-20): sc-15649

BACKGROUND

Vacuolar-type H^+-ATPases (V-ATPases) are ATP-dependent proton pumps involved in the acidification of intracellular compartments in eukaryotic cells and are important in cellular and organismal processes. The V-ATPases are composed of two complexes, V_1 and V_0, that serve different functions. Mutations in the V-ATPase α3 isoform results in osteopetrosis, a fatal disease in humans. In *C. elegans*, four UNC-32 mutant alleles exist the strongest of which is embryonic lethal. UNC-32 corresponds to one of the four genes encoding a 905 amino acid V-ATPase α subunit in the nematode. UNC-32 generates at least six transcripts by alternative splicing. In the uncoordinated alleles, the trancript UNC-32 B is affected, indicating that it encodes an isoform that is targeted to synaptic vesicles of cholinergic neurons, where it controls neurotransmitter uptake or release. Other isoforms expressed widely during embryogenesis are mutated in the lethal alleles and are involved in other acidic organelles, suggesting that the V-ATPase α subunit genes are highly regulated and function in a tissue-specific manner.

REFERENCES

1. Nelson, N. 1992. Structure and function of V-ATPase in endocytic and secretory organelles. J. Exp. Biol. 172: 149-153.
2. Forgac, M. 1999. Structure and properties of the vacuolar H^+-ATPases. J. Biol. Chem. 274: 12951-12954.
3. Futai, M., et al. 2000. Luminal acidification of diverse organelles by V-ATPase in animal cells. J. Exp. Biol. 203: 107-116.
4. Forgac, M. 2000. Structure, mechanism and regulation of the clathrin-coated vesicle and yeast vacuolar H^+-ATPases. J. Exp. Biol. 203: 71-80.
5. Nelson, N., et al. 2000. The cellular biology of proton-motive force generation by V-ATPases. J. Exp. Biol. 203: 89-95.
6. Pujol, N., et al. 2001. The *Caenorhabditis elegans* UNC-32 gene encodes alternative forms of a vacuolar ATPase α subunit. J. Biol. Chem. 276: 11913-11921.

SOURCE

UNC-32 (cD-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of UNC-32 of *Caenorhabditis elegans* origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-15649 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

UNC-32 (cD-20) is recommended for detection of UNC-32 of *Caenorhabditis elegans* 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Yoneda, T., et al. 2004. Compartment-specific perturbation of protein handling activates genes encoding mitochondrial chaperones. J. Cell Sci. 117: 4055-4066.

PROTOCOLS

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