SANTA CRUZ BIOTECHNOLOGY, INC.

# NCS-1 (D-18): sc-13165

## BACKGROUND

NCS-1 (for neuronal calcium sensor-1, also designated frequenin) belongs to a highly conserved family of EF-hand-containing $Ca^{2+}$-binding proteins expressed mainly in neurons. NCS-1 is localized to neuronal cell bodies and axons throughout the brain and spinal cord. It is also expressed in glial cells and in neuroendocrine bovine adrenal chromaffin and PC12 cells. NCS-1 is a regulatory protein involved in $Ca^{2+}$-dependent exocytosis of synaptic vesicles and dense core granules. NCS-1 also functions in the voltage-independent autocrine pathway that negatively regulates non-L-type $Ca^{2+}$ channels.

## REFERENCES


1. Pongs, O., et al. 1993. Frequenin—a novel calcium-binding protein that modulates synaptic efficacy in the *Drosophila* nervous system. Neuron 11: 15-28.
2. Cox, J.A., et al. 1994. Cation binding and conformational changes in VILIP and NCS-1, two neuron-specific calcium-binding proteins. J. Biol. Chem. 269: 32807-32813.
3. Olafsson, P., et al. 1997. The $Ca^{2+}$ binding protein, frequenin is a nervous system-specific protein in mouse preferentially localized in neurites. Brain Res. Mol. Brain Res. 44: 73-82.
4. McFerran, B.W., et al. 1998. Neuronal $Ca^{2+}$ sensor 1, the mammalian homologue of frequenin, is expressed in chromaffin and PC12 cells and regulates neurosecretion from dense-core granules. J. Biol. Chem. 273: 22768-22772.
5. Braunewell, K.H., et al. 1999. Intracellular neuronal calcium sensor proteins: a family of EF-hand calcium-binding proteins in search of a function. Cell Tissue Res. 295: 1-12.
6. Martone, M.E., et al. 1999. Cellular and subcellular distribution of the calcium-binding protein NCS-1 in the central nervous system of the rat. Cell Tissue Res. 295: 395-407.
7. Weiss, J.L., et al. 2000. NCS-1/Frequenin functions in an autocrine pathway regulating $Ca^{2+}$ channels in bovine adrenal chromaffin cells. J. Biol. Chem. 275: 40082-40087.


## CHROMOSOMAL LOCATION

Genetic locus: FREQ (human) mapping to 9q34.11; Freq (mouse) mapping to 2 B.

## SOURCE

NCS-1 (D-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of NCS-1 of human 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-13165 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

NCS-1 (D-18) is recommended for detection of NCS-1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

NCS-1 (D-18) is also recommended for detection of NCS-1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for NCS-1 siRNA (h): sc-36019, NCS-1 siRNA (m): sc-36020, NCS-1 siRNA (r): sc-270206, NCS-1 shRNA Plasmid (h): sc-36019-SH, NCS-1 shRNA Plasmid (m): sc-36020-SH, NCS-1 shRNA Plasmid (r): sc-270206-SH, NCS-1 shRNA (h) Lentiviral Particles: sc-36019-V, NCS-1 shRNA (m) Lentiviral Particles: sc-36020-V and NCS-1 shRNA (r) Lentiviral Particles: sc-270206-V.

Molecular Weight of NCS-1: 21 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, U-87 MG cell lysate: sc-2411 or T98G cell lysate: sc-2294.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## 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.