SANTA CRUZ BIOTECHNOLOGY, INC.

NSF (E-6): sc-74458

BACKGROUND

Syntaxins were originally thought to be docking proteins, but have more recently been categorized as anchoring proteins that anchor themselves to the cytoplasmic surfaces of cellular membranes. Syntaxins have been shown to bind to various proteins involved in exocytosis, including VAMPs (vesicle-associated membrane proteins), NSF (N-ethylmaleimide-sensitive factor), SNAP 25 (synaptosomal-associated protein of 25 kDa), SNAPs (soluble NSF attachment proteins) and synaptotagmin. VAMPs, also designated synaptobrevins, including VAMP-1 and VAMP-2, and synaptotagmin, a protein that may function as an inhibitor of exocytosis, are vesicular proteins. SNAPs, including α- and γ-SNAP, are cytoplasmic proteins that bind to a membrane receptor complex composed of VAMP, SNAP 25 and syntaxin. SNAPs mediate the membrane binding of NSF, which is essential for membrane fusion reactions.

REFERENCES

1. Elferink, L.A., et al. 1993. A role for Synapto-tagmin (p65) in regulated exocytosis. Cell 72: 153-159.
2. Bennett, M.K., et al. 1993. The Syntaxin family of vesicular transport receptors. Cell 74: 863-873.
3. Yamaguchi, K. and Akagawa, K. 1994. Exocytosis relating proteins in the nervous system. Neurosci. Res. 20: 289-292.
4. Hayashi, T., et al. 1994. Synaptic vesicle membrane fusion complex: action of clostridial neurotoxins on assembly. EMBO J. 13: 5051-5061.
5. Edelmann, L., et al. 1995. Synaptobrevin binding to synaptophysin: a potential mechanism for controlling the exocytosis fusion machine. EMBO J. 14: 224-231.
6. McMahon, H.T. and Sudhof, T.C. 1995. Synaptic core complex of synaptobrevin, Syntaxin, and SNAP25 forms high affinity α-SNAP binding site. J. Biol. Chem. 270: 2213-2217.
7. Lin, R.C. and Scheller, R.H. 1997. Structural organization of the synaptic exocytosis core complex. Neuron 19: 1087-1094.

CHROMOSOMAL LOCATION

Genetic locus: NSF (human) mapping to 17q21.31; Nsf (mouse) mapping to 11 E1.

SOURCE

NSF (E-6) is a mouse monoclonal antibody raised against amino acids 1-300 mapping near the N-terminus of NSF of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

NSF (E-6) is recommended for detection of NSF of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for NSF siRNA (h): sc-36101, NSF siRNA (m): sc-36102, NSF siRNA (r): sc-156016, NSF shRNA Plasmid (h): sc-36101-SH, NSF shRNA Plasmid (m): sc-36102-SH, NSF shRNA Plasmid (r): sc-156016-SH, NSF shRNA (h) Lentiviral Particles: sc-36101-V, NSF shRNA (m) Lentiviral Particles: sc-36102-V and NSF shRNA (r) Lentiviral Particles: sc-156016-V.

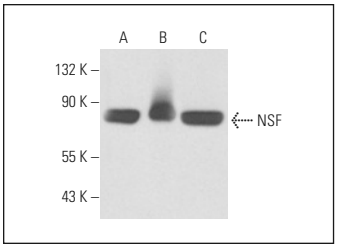
Molecular Weight of NSF: 76 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, SK-N-SH cell lysate: sc-2410 or SH-SY5Y cell lysate: sc-3812.

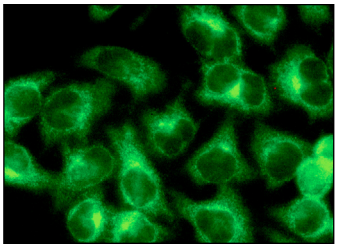
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



NSF (E-6): sc-74458. Western blot analysis of NSF expression in SK-N-SH (**A**), SH-SY5Y (**B**) and KNRK (**C**) whole cell lysates.



NSF (E-6): sc-74458. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Perdomo, D., et al. 2015. Cellular and proteomics analysis of the endomembrane system from the unicellular *Entamoeba histolytica*. J. Proteomics 112: 125-140.
2. Plumel, M., et al. 2019. Circadian analysis of the mouse cerebellum proteome. Int. J. Mol. Sci. 20: 1852.

RESEARCH USE

For research use only, not for use in diagnostic procedures.