SANTA CRUZ BIOTECHNOLOGY, INC.

NSF (7): sc-136008

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 synaptotagmin (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.
8. Barnard, R.J., et al. 1997. Stimulation of NSF ATpase activity by α-SNAP is required for SNARE complex disassembly and exocytosis. J. Cell Biol. 139: 875-883.

CHROMOSOMAL LOCATION

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

SOURCE

NSF (7) is a mouse monoclonal antibody raised against amino acids 488-601 of NSF of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2b} in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

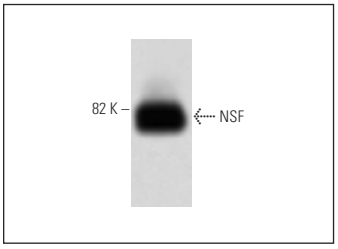
NSF (7) is recommended for detection of NSF of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

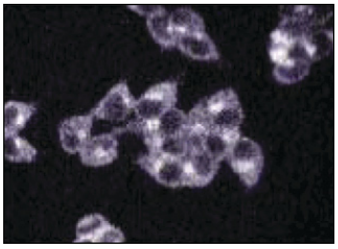
Molecular Weight of NSF: 76 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, mouse brain extract: sc-2253 or MIA PaCa-2 cell lysate: sc-2285.

DATA



NSF (7): sc-136008. Western blot analysis of NSF expression in HeLa whole cell lysate.



NSF (7): sc-136008. Immunofluorescence staining of HeLa cells showing cytoplasmic staining.

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. Not for resale.

PROTOCOLS

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