

Product Information

Anti-NSF (C-terminal)

produced in rabbit, affinity isolated antibody

Catalog Number **SAB4200596**

Product Description

Anti-NSF (C-terminal) is produced in rabbit using as immunogen a synthetic peptide corresponding to a sequence located in the C-terminus of human NSF (GenID: 4905), conjugated to KLH. The corresponding sequence is highly conserved (single amino acid substitution) in rat and mouse NSF. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-NSF (C-terminal) specifically recognizes human, rat and mouse NSF. The antibody may be used in several immunochemical techniques including immunoblotting (~75 kDa), immunoprecipitation, immunocytochemistry and immunohistochemistry. Detection of the NSF band by immunoblotting is specifically inhibited by the NSF immunizing peptide.

N-ethylmaleimide-sensitive fusion protein (NSF) is an essential component of the protein machinery responsible for various membrane fusion events, including inter-cisternal Golgi protein transport and the exocytosis of vesicles.¹⁻⁴ NSF-dependent membrane fusion involves the interaction of two types of general cytosolic proteins, NSF and α -, β - and γ -SNAP isoforms, with the subcellular compartment-specific SNARE receptors (SNAREs) of the vesicle and target membranes. At nerve terminals, neurotransmitter vesicles dock at the presynaptic release site by the interaction of the vesicle SNARE (v-SNARE) synaptobrevin/VAMP with the target SNAREs (t-SNAREs) syntaxin and SNAP-25. SNAREs form a 7S complex with high affinity for NSF and α -SNAP.⁵ Upon binding of NSF and α -SNAP, a 20S complex is formed that is rapidly disassembled due to NSF's ATPase activity, to facilitate vesicle fusion to the target membrane. NSF is required in long-term potentiation (LTP), underlying the formation of long-term memory, by regulating the exocytosis of glutamate AMPA receptor GluR2 at post-synaptic densities (PSD).^{5,6}

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: ~1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 1-2 μ g/mL is recommended using extracts of SH-SY5Y cells.

Immunoprecipitation: a working amount of 10 μ g is recommended using lysates of mouse brain (S1 fraction).

Immunofluorescence: a working concentration of 1-2 μ g/mL is recommended using Neuro-2A cells.

Immunohistochemistry: a working concentration of 10-20 μ g/mL is recommended using formalin-fixed, paraffin-embedded rat brain.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

1. Jahn, R., and Fasshauer, D., *Nature*, **490**, 201-207 (2012).
2. Zhao, C., et al., *FEBS Lett.*, **581**, 2140-2149 (2007).
3. Lorentz, A., et al., *Front. Immunol.*, **3**, 143 (2012).
4. Ramakrishnan, M.A., et al., *Mol. Cell. Neurosci.*, **50**, 58-69 (2012).

5. Osten, P., et al., *Neuron*, **21**, 99-110 (1998).

6. Joels, G., and Lamprecht, R., *J. Neurosci.*, **24**, 15981-15986 (2010).

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