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Product Information

Anti-NSF
produced in rabbit, affinity isolated antibody

Catalog Number **SAB4200595**

Product Description
Anti-NSF is produced in rabbit using as immunogen a synthetic peptide corresponding to an internal sequence of human NSF (GeneID: 4905), conjugated to KLH. The corresponding sequence is identical in rat and mouse NSF. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-NSF specifically recognizes rat and mouse NSF (not tested with other species). 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 SNAP 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 0.2-0.4 μg/mL is recommended using extracts of rat brain (S1 fraction).

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

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

Immunohistochemistry: a working concentration of 10-20 μg/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
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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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