SANTA CRUZ BIOTECHNOLOGY, INC.

α-SNAP (4E4): sc-58218

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 25kDa), 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. An additional protein designated synaptophysin may regulate exocytosis by competing with SNAP 25 and syntaxins for VAMP binding.

REFERENCES

1. Bachem, C.W., et al. 2000. Antisense suppression of a potato α-SNAP homologue leads to alterations in cellular development and assimilate distribution. Plant Mol. Biol. 43: 473-482.
2. Graham, M.E. and Burgoyne, R.D. 2000. Comparison of cysteine string protein (CSP) and mutant α-SNAP overexpression reveals a role for CSP in late steps of membrane fusion in dense-core granule exocytosis in adrenal chromaffin cells. J. Neurosci. 20: 1281-1289.
3. Wang, L., et al. 2000. The docking of primed vacuoles can be reversibly arrested by excess Sec17p (α-SNAP). J. Biol. Chem. 275: 22862-22867.
4. Scales, S.J., et al. 2001. The ionic layer is required for efficient dissociation of the SNARE complex by α-SNAP and NSF. Proc. Natl. Acad. Sci. USA 98: 14262-14267.
5. Marz, K.E., et al. 2003. Defining the SNARE complex binding surface of α-SNAP: implications for SNARE complex disassembly. J. Biol. Chem. 278: 27000-27008.
6. Chae, T.H., et al. 2004. The hyh mutation uncovers roles for α-SNAP in apical protein localization and control of neural cell fate. Nat. Genet. 36: 264-270.
7. Beites, C.L., et al. 2005. The septin Sept5/CDCrel-1 competes with α-SNAP for binding to the SNARE complex. Biochem. J. 385: 347-353.
8. Tomes, C.N., et al. 2005. α-SNAP and NSF are required in a priming step during reaction. Mol. Hum. Reprod. 11: 43-51.

CHROMOSOMAL LOCATION

Genetic locus: NAPA (human) mapping to 19q13.32; Napa (mouse) mapping to 7 A2.

SOURCE

α-SNAP (4E4) is a mouse monoclonal antibody raised against full length α-SNAP of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and < 1% glycerol.

APPLICATIONS

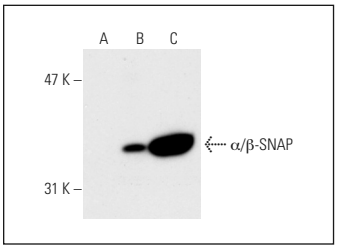
α-SNAP (4E4) is recommended for detection of α-SNAP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with β-SNAP.

Suitable for use as control antibody for α-SNAP siRNA (h): sc-29617, α-SNAP siRNA (m): sc-29618, α-SNAP shRNA Plasmid (h): sc-29617-SH, α-SNAP shRNA Plasmid (m): sc-29618-SH, α-SNAP shRNA (h) Lentiviral Particles: sc-29617-V and α-SNAP shRNA (m) Lentiviral Particles: sc-29618-V.

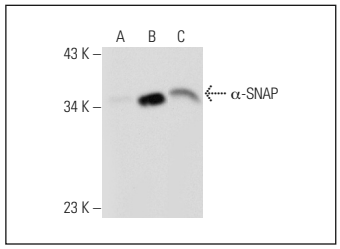
Molecular Weight of α-SNAP: 33 kDa.

Positive Controls: α-SNAP (h): 293T Lysate: sc-114765, α-SNAP (m): 293T Lysate: sc-126355 or HeLa whole cell lysate: sc-2200.

DATA



α-SNAP (4E4): sc-58218. Western blot analysis of α/β-SNAP expression in non-transfected 293T: sc-117752 (**A**), human α/β-SNAP transfected 293T: sc-114765 (**B**) and HeLa (**C**) whole cell lysates.



α-SNAP (4E4): sc-58218. Western blot analysis of α-SNAP expression in non-transfected 293T: sc-117752 (**A**), mouse α-SNAP transfected 293T: sc-126355 (**B**) and HeLa (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ohno, Y., et al. 2009. Preferential increase in the hippocampal synaptic vesicle protein 2A (SV2A) by pentylenetetrazole kindling. Biochem. Biophys. Res. Commun. 390: 415-420.
2. Panou, M.M., et al. 2018. Agnoprotein is an essential egress factor during BK polyomavirus infection. Int. J. Mol. Sci. 19: 902.

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 for detailed protocols and support products.