

NACA (N-14): sc-87324

BACKGROUND

NACA1, NACA2 and NACAP1 are members of the nascent polypeptide-associated complex (NAC) α subunit family that participate in preventing inappropriate targeting of non-secretory polypeptides to the endoplasmic reticulum (ER). As nascent polypeptide chains emerge from the ribosome, NACA proteins bind to these chains and block their interaction with the signal recognition particle (SRP), which normally targets nascent secretory peptides to the ER. Members of the α -NAC subunit family have sequence similarities with transcription-regulating proteins and are suggested to function as transcriptional coactivators potentiating c-Jun-mediated transcription. Most NACA proteins localize to both nucleus as well as cytoplasm, and contain NAC-A/B (NAC- α/β) and UBA (ubiquitin-associated) domains. The UBA domain is associated with proteins involved in the ubiquitin-proteasome pathway for protein degradation.

REFERENCES

1. Reimann, B., Bradsher, J., Franke, J., Hartmann, E., Wiedmann, M., Prehn, S. and Wiedmann, B. 1999. Initial characterization of the nascent polypeptide-associated complex in yeast. *Yeast* 15: 397-407.
2. Beatrix, B., Sakai, H. and Wiedmann, M. 2000. The α and β subunit of the nascent polypeptide-associated complex have distinct functions. *J. Biol. Chem.* 275: 37838-37845.
3. Franke, J., Reimann, B., Hartmann, E., Köhlerl, M. and Wiedmann, B. 2001. Evidence for a nuclear passage of nascent polypeptide-associated complex subunits in yeast. *J. Cell. Sci.* 114 (Pt. 14): 2641-2648.
4. Whitby, M.C. and Dixon, J. 2001. Fission yeast nascent polypeptide-associated complex binds to four-way DNA junctions. *J. Mol. Biol.* 306: 703-716.
5. Kim, S.H., Shim, K.S. and Lubec, G. 2002. Human brain nascent polypeptide-associated complex α subunit is decreased in patients with Alzheimer's disease and Down syndrome. *J. Investig. Med.* 50: 293-301.
6. Hartmann-Petersen, R., Semple, C.A., Ponting, C.P., Hendil, K.B. and Gordon, C. 2003. UBA domain containing proteins in fission yeast. *Int. J. Biochem. Cell Biol.* 35: 629-636.
7. Andersen, K.M., Semple, C.A. and Hartmann-Petersen, R. 2007. Characterisation of the nascent polypeptide-associated complex in fission yeast. *Mol. Biol. Rep.* 34: 275-281.
8. Panasenko, O.O., David, F.P. and Collart, M.A. 2009. Ribosome association and stability of the nascent polypeptide-associated complex is dependent upon its own ubiquitination. *Genetics* 181: 447-460.
9. Takahashi, T., Hirose, K., Mizutani, E. and Naganuma, A. 2009. Dysfunctional nascent polypeptide-associated complex (NAC) activity in ribosomes enhances adriamycin toxicity in budding yeast. *J. Toxicol. Sci.* 34: 703-708.

CHROMOSOMAL LOCATION

Genetic locus: NACA (human) mapping to 12q13.3, NACA2 (human) mapping to 17q23.2, NACAP1 (human) mapping to 8q22.3.

RESEARCH USE

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

SOURCE

NACA (N-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of NACA of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-87324 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NACA (N-14) is recommended for detection of NACA1, NACA2 and NACAP1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Molecular Weight of NACA: 23 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

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