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SANTA CRUZ BIOTECHNOLOGY, INC.

NACA1 siRNA (m): sc-149794

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., et al. 1999. Initial characterization of the nascent polypeptide-associated complex in yeast. Yeast 15: 397-407.
2. Beatrix, B., et al. 2000. The α and β subunit of the nascent polypeptide-associated complex have distinct functions. J. Biol. Chem. 275: 37838-37845.
3. Franke, J., et al. 2001. Evidence for a nuclear passage of nascent polypeptide-associated complex subunits in yeast. J. Cell Sci. 114: 2641-2648.
4. Whitby, M.C., et al. 2001. Fission yeast nascent polypeptide-associated complex binds to four-way DNA junctions. J. Mol. Biol. 306: 703-716.
5. Kim, S.H., et al. 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., et al. 2003. UBA domain containing proteins in fission yeast. Int. J. Biochem. Cell Biol. 35: 629-636.
7. Andersen, K.M., et al. 2007. Characterisation of the nascent polypeptide-associated complex in fission yeast. Mol. Biol. Rep. 34: 275-281.
8. Panasenko, O.O., et al. 2009. Ribosome association and stability of the nascent polypeptide-associated complex is dependent upon its own ubiquitination. Genetics 181: 447-460.

CHROMOSOMAL LOCATION

Genetic locus: Naca (mouse) mapping to 10 D3.

PRODUCT

NACA1 siRNA (m) is a pool of 2 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NACA1 shRNA Plasmid (m): sc-149794-SH and NACA1 shRNA (m) Lentiviral Particles: sc-149794-V as alternate gene silencing products.

For independent verification of NACA1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-149794A and sc-149794B.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

NACA1 siRNA (m) is recommended for the inhibition of NACA1 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NACA1 gene expression knockdown using RT-PCR Primer: NACA1 (m)-PR: sc-149794-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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