SANTA CRUZ BIOTECHNOLOGY, INC.

Dynamin II siRNA (h): sc-35236

BACKGROUND

Members of the Dynamin family, including Dynamin I and Dynamin II, are GPTase, microtubule-associated proteins which are involved in endocytosis, synaptic transmission and neurogenesis. Dynamin I is localized to the central nervous system, while Dynamin II exhibits ubiquitous distribution with highest expression found in testis. Both dynamin proteins contain SH3 and proline-rich domains that mediate interactions between the dynamins and effectors of their GTPase activity. The interactions with these effectors, which include microtubules, acidic phospholipids and SH3 domain-containing proteins, are required for rapid endocytosis. Dynamin I appears to be recruited to clathrin coated pits by SH3 domain interaction with amphiphysin, a protein highly expressed in brain.

CHROMOSOMAL LOCATION

Genetic locus: DNM2 (human) mapping to 9p23.

PRODUCT

Dynamin II siRNA (h) is a pool of 3 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 Dynamin II shRNA Plasmid (h): sc-35236-SH and Dynamin II shRNA (h) Lentiviral Particles: sc-35236-V as alternate gene silencing products.

For independent verification of Dynamin II (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35236A, sc-35236B and sc-35236C.

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

Dynamin II siRNA (h) is recommended for the inhibition of Dynamin II expression in human 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.

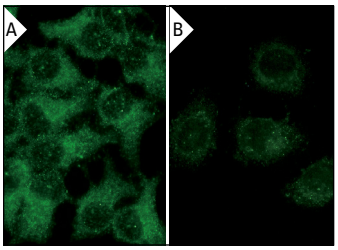
GENE EXPRESSION MONITORING

Dynamin II (G-4): sc-166669 is recommended as a control antibody for monitoring of Dynamin II gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Dynamin II gene expression knockdown using RT-PCR Primer: Dynamin II (h)-PR: sc-35236-PR (20 µl, 421 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



Dynamin II siRNA (h): sc-35236. Immunofluorescence staining of methanol-fixed, control HeLa (**A**) and Dynamin II siRNA silenced HeLa (**B**) cells showing diminished cytoplasmic staining in the siRNA silenced cells. Cells probed with Dynamin II (C-18): sc-6400.

SELECT PRODUCT CITATIONS

1. Singleton, P.A., et al. 2009. Dynamin 2 and c-Abl are novel regulators of hyperoxia-mediated NADPH oxidase activation and reactive oxygen species production in caveolin-enriched microdomains of the endothelium. J. Biol. Chem. 284: 34964-34975.
2. Verma, S.K., et al. 2014. Late stages of the synchronized macrophage fusion in osteoclast formation depend on dynamin. Biochem. J. 464: 293-300.
3. Wong, B.S., et al. 2019. A direct podocalyxin-Dynamin-2 interaction regulates cytoskeletal dynamics to promote migration and metastasis in pancreatic cancer cells. Cancer Res. 79: 2878-2891.
4. Wang, Y., et al. 2020. Transport mechanisms of polymannuronic acid and polyguluronic acid across Caco-2 cell monolayers. Pharmaceutics 12: 167.
5. Li, F., et al. 2021. Transport mechanism and subcellular localization of a polysaccharide from *Cucurbia moschata* across Caco-2 cells model. Int. J. Biol. Macromol. 182: 1003-1014.
6. Lachowski, D., et al. 2022. Substrate stiffness-driven membrane tension modulates vesicular trafficking via caveolin-1. ACS Nano 16: 4322-4337.
7. Itagaki, M., et al. 2023. A universal method to analyze cellular internalization mechanisms via endocytosis without non-specific cross-effects. FASEB J. 37: e22764.

RESEARCH USE

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