SANTA CRUZ BIOTECHNOLOGY, INC.

Bystin siRNA (h): sc-62030

BACKGROUND

Bystin (or Bystin-like) is an evolutionarily conserved protein from yeast to humans. It localizes to the nucleolus and cytoplasm. Nuclear Bystin associates with the 40S ribosomal subunit and cytoplasmic Bystin directly binds Trophinin and Tastin, facilitating the adhesion of cells expressing these proteins. Knockdown of Bystin inhibits cell proliferation and delays RNA processing of the 18S component of the 40S ribosomal subunit. This suggests that Bystin plays an important role in ribosome biogenesis. In addition, embryo development is arrested around the 16-cell stage when Bystin expression is knocked down. This implies that Bystin is important for the development of preimplantation embryos. Bystin is also overexpressed in human cancers providing further evidence suggesting that it participates in cell proliferation.

REFERENCES

1. Fukuda, M.N., et al. 1999. Trophinin, Tastin, and Bystin: a complex mediating unique attachment between trophoblastic and endometrial epithelial cells at their respective apical cell membranes. Semin. Reprod. Endocrinol. 17: 229-234.
2. Aoki, R., et al. 2000. Recent molecular approaches to elucidate the mechanism of embryo implantation: Trophinin, Bystin, and Tastin as molecules involved in the initial attachment of blastocysts to the uterus in humans. Semin. Reprod. Med. 18: 265-271.
3. Sheng, J., et al. 2004. Bystin as a novel marker for reactive astrocytes in the adult rat brain following injury. Eur. J. Neurosci. 20: 873-884.
4. Aoki, R., et al. 2006. The Bysl gene product, Bystin, is essential for survival of mouse embryos. FEBS Lett. 580: 6062-6068.
5. Ma, L., et al. 2006. Expression of Trophinin and Bystin identifies distinct cell types in the germinal zones of adult rat brain. Eur. J. Neurosci. 23: 2265-2276.
6. Ayala, G.E., et al. 2006. Bystin in perineural invasion of prostate cancer. Prostate 66: 266-272.
7. Miyoshi, M., et al. 2007. Bystin in human cancer cells: intracellular localization and function in ribosome biogenesis. Biochem. J. 404: 373-381.
8. Fukuda, M.N. and Sugihara,K. 2007. Signal transduction in human embryo implantation. Cell Cycle 6: 1153-1156.

CHROMOSOMAL LOCATION

Genetic locus: BYSL (human) mapping to 6p21.1.

PRODUCT

Bystin 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 Bystin shRNA Plasmid (h): sc-62030-SH and Bystin shRNA (h) Lentiviral Particles: sc-62030-V as alternate gene silencing products.

For independent verification of Bystin (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-62030A, sc-62030B and sc-62030C.

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

Bystin siRNA (h) is recommended for the inhibition of Bystin 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

Bystin (A-10): sc-271722 is recommended as a control antibody for monitoring of Bystin 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Bystin gene expression knockdown using RT-PCR Primer: Bystin (h)-PR: sc-62030-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 for detailed protocols and support products.