

Bystin (h): 293T Lysate: sc-116274

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. Knock-down 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. and Nozawa, S. 2000. 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. and Fukuda, M.N. 2001. 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., Yang, S., Xu, L., Wu, C., Wu, X., Li, A., Yu, Y., Ni, H., Fukuda, M. and Zhou, J. 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., Suzuki, N., Paria, B.C., Sugihara, K., Akama, T.O., Raab, G., Miyoshi, M., Nadano, D. and Fukuda, M.N. 2006. The Bysl gene product, Bystin, is essential for survival of mouse embryos. *FEBS Lett.* 580: 6062-6068.
5. Ma, L., Yin, M., Wu, X., Wu, C., Yang, S., Sheng, J., Ni, H., Fukuda, M.N. and Zhou, J. 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., Dai, H., Li, R., Ittmann, M., Thompson, T.C., Rowley, D. and Wheeler, T.M. 2006. Bystin in perineural invasion of prostate cancer. *Prostate* 66: 266-272.
7. Miyoshi, M., Okajima, T., Matsuda, T., Fukuda, M.N. and Nadano, D. 2007. Bystin in human cancer cells: intracellular localization and function in ribosome biogenesis. *Biochem. J.* 404: 373-381.
8. Adachi, K., Soeta-Saneyoshi, C., Sagara, H. and Iwakura, Y. 2007. Crucial role of BYSL in mammalian preimplantation development as an integral factor for 40S ribosome biogenesis. *Mol. Cell. Biol.* 27: 2202-2214.
9. 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 (h): 293T Lysate represents a lysate of human Bystin transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Bystin (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Bystin antibodies. Recommended use: 10-20 µl per lane.

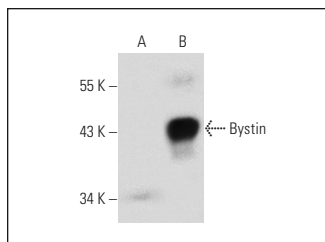
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Bystin (G-1): sc-271554 is recommended as a positive control antibody for Western Blot analysis of enhanced human Bystin expression in Bystin transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

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.

DATA



Bystin (G-1): sc-271554. Western blot analysis of Bystin expression in non-transfected: sc-117752 (A) and human Bystin transfected: sc-116274 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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.