



Profilin-2 (h): 293T Lysate: sc-177780

BACKGROUND

Profilins (Profilin-1, Profilin-2 and Profilin-3) act as nucleotide exchange factors that use ATP to charge Actin, a process that regulates Actin polymerization by subsequently sequestering the Actin monomer. Profilin-2, also known as PFN2 or PFL, is a 140 amino acid protein that is ubiquitously expressed with highest expression in kidney, brain and skeletal muscle. Like other members of the Profilin family, Profilin-2 functions as an Actin monomer-binding protein that influences the structure of the cytoskeleton by regulating Actin polymerization in response to extracellular signals. High levels of Profilin-2 inhibit Actin polymerization, while lower levels enhance Actin polymerization, suggesting that the expression of Profilin-2 is regulated by the need for polymerization within the cell. Two isoforms of Profilin-2 exist due to alternative splicing events.

REFERENCES

1. Honoré, B., Madsen, P., Andersen, A.H. and Leffers, H. 1993. Cloning and expression of a novel human profilin variant, profilin II. *FEBS Lett.* 330: 151-155.
2. Gieselmann, R., Kwiatkowski, D.J., Janmey, P.A. and Witke, W. 1995. Distinct biochemical characteristics of the two human profilin isoforms. *Eur. J. Biochem.* 229: 621-628.
3. Nodelman, I.M., Bowman, G.D., Lindberg, U. and Schutt, C.E. 1999. X-ray structure determination of human profilin II: a comparative structural analysis of human profilins. *J. Mol. Biol.* 294: 1271-1285.
4. Harbeck, B., Hüttelmaier, S., Schluter, K., Jockusch, B.M. and Illenberger, S. 2000. Phosphorylation of the vasodilator-stimulated phosphoprotein regulates its interaction with Actin. *J. Biol. Chem.* 275: 30817-30825.
5. Lambrechts, A., Braun, A., Jonckheere, V., Aszodi, A., Lanier, L.M., Robbens, J., Van Colen, I., Vandekerckhove, J., Fässler, R. and Ampe, C. 2000. Profilin II is alternatively spliced, resulting in profilin isoforms that are differentially expressed and have distinct biochemical properties. *Mol. Cell. Biol.* 20: 8209-8219.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 176590. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Da Silva, J.S., Medina, M., Zuliani, C., Di Nardo, A., Witke, W. and Dotti, C.G. 2003. RhoA/ROCK regulation of neuritogenesis via profilin IIa-mediated control of actin stability. *J. Cell Biol.* 162: 1267-1279.
8. Lederer, M., Jockusch, B.M. and Rothkegel, M. 2005. Profilin regulates the activity of p42POP, a novel Myb-related transcription factor. *J. Cell Sci.* 118: 331-341.
9. Xu, J., Shi, S., Matsumoto, N., Noda, M. and Kitayama, H. 2007. Identification of Rgl3 as a potential binding partner for Rap-family small G proteins and profilin II. *Cell. Signal.* 19: 1575-1582.

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.

CHROMOSOMAL LOCATION

Genetic locus: PFN2 (human) mapping to 3q25.1.

PRODUCT

Profilin-2 (h): 293T Lysate represents a lysate of human Profilin-2 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Profilin-2 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Profilin-2 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.

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.