

YT521-B (T-17): sc-160931

BACKGROUND

YT521-B (YTH domain-containing protein 1), also known as YT521, is a 727 amino acid nuclear protein that localizes to the novel subnuclear structure of YT bodies and is the human homolog of the mouse gene, YTHDC1. Ubiquitously expressed, YT521-B may be part of a signal transduction pathway that influences splice site selection. YT521-B shuttles between the nucleus and cytosol, where it can be phosphorylated by c-Src or Fyn. Tyrosine phosphorylation by c-Abl causes dispersion of YT521-B from YT bodies to the nucleoplasm. Tyrosine phosphorylation also promotes sequestration of YT521-B in an insoluble nuclear form, which abolishes the ability of YT521-B to change alternative splice sites. YT521-B is considered to be a candidate for a role in a gene expression model of the pathogenesis of EDMD (Emery-Dreifuss muscular dystrophy), a type of muscular dystrophy primarily affecting voluntary muscles. YT521-B exists as two isoforms due to alternative splicing events.

REFERENCES

1. Imai, Y., Matsuo, N., Ogawa, S., Tohyama, M. and Takagi, T. 1998. Cloning of a gene, YT521, for a novel RNA splicing-related protein induced by hypoxia/reoxygenation. *Brain Res. Mol. Brain Res.* 53: 33-40.
2. Hartmann, A.M., Nayler, O., Schwaiger, F.W., Obermeier, A. and Stamm, S. 1999. The interaction and colocalization of Sam68 with the splicing-associated factor YT521-B in nuclear dots is regulated by the Src family kinase p59(fyn). *Mol. Biol. Cell* 10: 3909-3926.
3. Nayler, O., Hartmann, A.M. and Stamm, S. 2000. The ER repeat protein YT521-B localizes to a novel subnuclear compartment. *J. Cell Biol.* 150: 949-962.
4. Stoss, O., Olbrich, M., Hartmann, A.M., Konig, H., Memmott, J., Andreadis, A. and Stamm, S. 2001. The STAR/GSG family protein rSLM-2 regulates the selection of alternative splice sites. *J. Biol. Chem.* 276: 8665-8673.
5. Stoilov, P., Rafalska, I. and Stamm, S. 2002. YTH: a new domain in nuclear proteins. *Trends Biochem. Sci.* 27: 495-497.
6. Wilkinson, F.L., Holaska, J.M., Zhang, Z., Sharma, A., Manilal, S., Holt, I., Stamm, S., Wilson, K.L. and Morris, G.E. 2003. Emerin interacts *in vitro* with the splicing-associated factor, YT521-B. *Eur. J. Biochem.* 270: 2459-2466.
7. Rafalska, I., Zhang, Z., Benderska, N., Wolff, H., Hartmann, A.M., Brack-Werner, R. and Stamm, S. 2004. The intranuclear localization and function of YT521-B is regulated by tyrosine phosphorylation. *Hum. Mol. Genet.* 13: 1535-1549.
8. Stoss, O., Novoyatleva, T., Gencheva, M., Olbrich, M., Benderska, N. and Stamm, S. 2004. p59(fyn)-mediated phosphorylation regulates the activity of the tissue-specific splicing factor rSLM-1. *Mol. Cell. Neurosci.* 27: 8-21.
9. Bergin, A.M., Balder, B., Kishore, S., Swärd, K., Hahn-Zoric, M., Löwhagen, O., Hanson, L.A. and Padyukov, L. 2006. Common variations in the IL4R gene affect splicing and influence natural expression of the soluble isoform. *Hum. Mutat.* 27: 990-998.

CHROMOSOMAL LOCATION

Genetic locus: YTHDC1 (human) mapping to 4q13.2; Ythdc1 (mouse) mapping to 5 E1.

SOURCE

YT521-B (T-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of YT521-B of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-160931 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

YT521-B (T-17) is recommended for detection of YT521-B of human and rat origin and Ythdc1 of mouse origin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

YT521-B (T-17) is also recommended for detection of YT521-B in additional species, including equine, canine and bovine.

Suitable for use as control antibody for YT521-B siRNA (h): sc-88938, Ythdc1 siRNA (m): sc-155421, YT521-B shRNA Plasmid (h): sc-88938-SH, Ythdc1 shRNA Plasmid (m): sc-155421-SH, YT521-B shRNA (h) Lentiviral Particles: sc-88938-V and Ythdc1 shRNA (m) Lentiviral Particles: sc-155421-V.

Molecular Weight of YT521-B: 110 kDa.

Positive Controls: MDCK cell lysate: sc-2252 or rat cerebrum tissue extract.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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