SANTA CRUZ BIOTECHNOLOGY, INC.

YT521-B (8): sc-136428

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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., et al. 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., et al. 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., et al. 2000. The ER repeat protein YT521-B localizes to a novel subnuclear compartment. J. Cell Biol. 150: 949-962.
4. Stoss, O., et al. 2001. The STAR/GSG family protein rSLM-2 regulates the selection of alternative splice sites. J. Biol. Chem. 276: 8665-8673.
5. Stoilov, P., et al. 2002. YTH: a new domain in nuclear proteins. Trends Biochem. Sci. 27: 495-497.
6. Wilkinson, F.L., et al. 2003. Emerin interacts *in vitro* with the splicing-associated factor, YT521-B. Eur. J. Biochem. 270: 2459-2466.
7. Rafalska, I., et al. 2004. The intranuclear localization and function of YT521-B is regulated by tyrosine phosphorylation. Hum. Mol. Genet. 13: 1535-1549.
8. Stoss, O., et al. 2004. $p59^{fyn}$-mediated phosphorylation regulates the activity of the tissue-specific splicing factor rSLM-1. Mol. Cell. Neurosci. 27: 8-21.

CHROMOSOMAL LOCATION

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

SOURCE

YT521-B (8) is a mouse monoclonal antibody raised against amino acids 6-123 of YT521-B of rat origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

YT521-B (8) is available conjugated to agarose (sc-136428 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; and to HRP (sc-136428 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

APPLICATIONS

YT521-B (8) is recommended for detection of YT521-B of human and rat origin and YTHDC1 of mouse and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

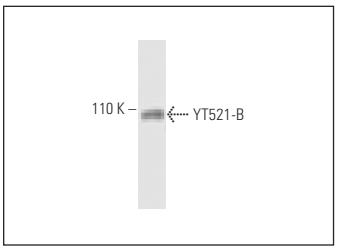
Molecular Weight of YT521-B: 110 kDa.

Positive Controls: MDCK cell lysate: sc-2252 or rat cerebellum extract: sc-2398.

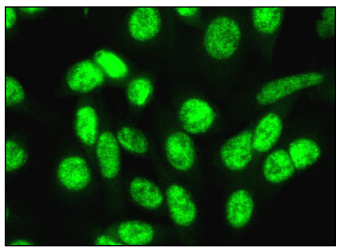
RECOMMENDED SUPPORT REAGENTS

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. 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.

DATA



YT521-B (8): sc-136428. Western blot analysis of YT521-B expression in rat cerebrum tissue extract.



YT521-B (8): sc-136428. Immunofluorescence staining of formalin-fixed SW480 cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Liu, F., et al. 2019. Genome-wide identification of protein binding sites on RNAs in mammalian cells. Biochem. Biophys. Res. Commun. 508: 953-958.

RESEARCH USE

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