

TRM12 (F-16): sc-87488

BACKGROUND

Transfer RNA (tRNA) modifications help regulate the efficiency of mRNA translation by maintaining the correct reading frames. TRM12 [tRNA methyltransferase 12 homolog (*S. cerevisiae*)], also known as TYW2 (tRNA-γW-synthesizing protein 2) or TRMT12, is a 448 amino acid protein that belongs to the RNA methyltransferase trmD family and TYW2 subfamily. TRM12 is the human homolog of a yeast gene that is essential for the synthesis of γW (wybutosine), a guanosine that stabilizes codon-anticodon associations near the anticodon of phenylalanine tRNA during ribosomal decoding. The gene encoding TRM12 maps to human chromosome 8, which consists of nearly 146 million base pairs, encodes over 800 genes and is associated with a variety of diseases and malignancies. Schizophrenia, bipolar disorder, Trisomy 8, Pfeiffer syndrome, congenital hypothyroidism, Waardenburg syndrome and some leukemias and lymphomas are thought to occur as a result of defects in specific genes that map to chromosome 8.

REFERENCES

1. Kashino, G., Kodama, S., Suzuki, K., Oshimura, M. and Watanabe, M. 2001. Preferential expression of an intact WRN gene in Werner syndrome cell lines in which a normal chromosome 8 has been introduced. *Biochem. Biophys. Res. Commun.* 289: 111-115.
2. Selicorni, A., Gueneri, S., Ratti, A. and Pizzuti, A. 2002. Cytogenetic mapping of a novel locus for type II Waardenburg syndrome. *Hum. Genet.* 110: 64-67.
3. McQueen, M.B., Devlin, B., Faraone, S.V., Nimgaonkar, V.L., Sklar, P., Smoller, J.W., Abou Jamra, R., Albus, M., et al. 2005. Combined analysis from eleven linkage studies of bipolar disorder provides strong evidence of susceptibility loci on chromosomes 6q and 8q. *Am. J. Hum. Genet.* 77: 582-595.
4. Kalhor, H.R., Penjwini, M. and Clarke, S. 2005. A novel methyltransferase required for the formation of the hypermodified nucleoside wybutosine in eucaryotic tRNA. *Biochem. Biophys. Res. Commun.* 334: 433-440.
5. Mossafa, H., Damotte, D., Jenabian, A., Delarue, R., Vincenneau, A., Amouroux, I., Jeandel, R., Khoury, E., Martelli, J.M., Samson, T., Tapia, S., Flandrin, G. and Troussard, X. 2006. Non-Hodgkin's lymphomas with Burkitt-like cells are associated with c-Myc amplification and poor prognosis. *Leuk. Lymphoma* 47: 1885-1893.
6. Noma, A. and Suzuki, T. 2006. Ribonucleome analysis identified enzyme genes responsible for wybutosine synthesis. *Nucleic Acids Symp. Ser.* 50: 65-66.
7. Agrelo, R., Cheng, W.H., Setien, F., Roper, S., Espada, J., Fraga, M.F., Herranz, M., Paz, M.F., Sanchez-Céspedes, M., Artiga, M.J., Guerrero, D., Castells, A., von Kobbe, C., Bohr, V.A. and Esteller, M. 2006. Epigenetic inactivation of the premature aging Werner syndrome gene in human cancer. *Proc. Natl. Acad. Sci. USA* 103: 8822-8827.

CHROMOSOMAL LOCATION

Genetic locus: TRMT12 (human) mapping to 8q24.13; Trmt12 (mouse) mapping to 15 D1.

SOURCE

TRM12 (F-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TRM12 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-87488 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TRM12 (F-16) is recommended for detection of TRM12 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); non cross-reactive with other TRM family members.

TRM12 (F-16) is also recommended for detection of TRM12 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for TRM12 siRNA (h): sc-77438, TRM12 siRNA (m): sc-154681, TRM12 shRNA Plasmid (h): sc-77438-SH, TRM12 shRNA Plasmid (m): sc-154681-SH, TRM12 shRNA (h) Lentiviral Particles: sc-77438-V and TRM12 shRNA (m) Lentiviral Particles: sc-154681-V.

Molecular Weight of TRM12: 50 kDa.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.