



Txl-2 (D-14): sc-103306

BACKGROUND

Thioredoxin (Trx) is a redox protein that is found in several species, such as bacteria, plants and mammals, and contains a conserved active site, consisting of Trp-Cys-Gly-Pro-Cys. Trx acts as a hydrogen donor for ribonucleotide reductase, modulates the DNA-binding activity of several transcription factors, stimulates cell growth, is an inhibitor of apoptosis and plays a role in the protection against oxidative stress. Txl-2 (Thioredoxin-like protein 2), also known as Thioredoxin domain-containing protein 6, is a 330 amino acid cytoplasmic protein that contains a domain that is evolutionarily related to Trx's active domain, however it does not have detectable catalytic activity. Txl-2 is expressed in spermatid tail and cilia of lung epithelium, therefore it may play a role in the regulation of microtubule physiology. Txl-2 is the antigen that the MC3 antibody recognizes in cases of colorectal cancer. There are three isoforms of Txl-2 that are produced as a result of alternative splicing events.

REFERENCES

- Sadek, C.M., Jiménez, A., Damdimopoulos, A.E., Kieselbach, T., Nord, M., Gustafsson, J.A., Spyrou, G., Davis, E.C., Oko, R., van der Hoorn, F.A. and Miranda-Vizuete, A. 2003. Characterization of human thioredoxin-like 2. A novel microtubule-binding thioredoxin expressed predominantly in the cilia of lung airway epithelium and spermatid manchette and axoneme. *J. Biol. Chem.* 278: 13133-13142.
- Miranda-Vizuete, A., Sadek, C.M., Jiménez, A., Krause, W.J., Sutovsky, P. and Oko, R. 2004. The mammalian testis-specific thioredoxin system. *Antioxid. Redox Signal.* 6: 25-40.
- Lu, Y., Wang, X., Liu, Z., Jin, B., Chu, D., Zhai, H., Zhang, F., Li, K., Ren, G., Miranda-Vizuete, A., Guo, X. and Fan, D. 2008. Identification and distribution of thioredoxin-like 2 as the antigen for the monoclonal antibody MC3 specific to colorectal cancer. *Proteomics* 8: 2220-2229.
- Byrne, L.J., Sidhu, A., Wallis, A.K., Ruddock, L.W., Freedman, R.B., Howard, M.J. and Williamson, R.A. 2009. Mapping of the ligand binding site on the b' domain of human PDI; interaction with peptide ligands and the x-linker region. *Biochem. J.* 423: 209-217.
- Tanboon, W., Chuchue, T., Vattanaviboon, P. and Mongkolsuk, S. 2009. Inactivation of thioredoxin-like gene alters oxidative stress resistance and reduces cytochrome c oxidase activity in *Agrobacterium tumefaciens*. *FEMS Microbiol. Lett.* 295: 110-116.
- Forster, M.L., Mahn, J.J. and Tsai, B. 2009. Generating an unfoldase from thioredoxin-like domains. *J. Biol. Chem.* 284: 13045-13056.
- Fridlich, R., Delalande, F., Jaillard, C., Lu, J., Poidevin, L., Cronin, T., Perrocheau, L., Millet-Puel, G., Niepon, M.L., Poch, O., Holmgren, A., Van Dorselaer, A., Sahel, J.A. and Leveillard, T. 2009. The thioredoxin-like protein rod-derived cone viability factor (RdCVFL) interacts with TAU and inhibits its phosphorylation in the retina. *Mol. Cell Proteomics* 8: 1206-1218.
- Kozlov, G., Määttänen, P., Schrag, J.D., Hura, G.L., Gabrielli, L., Cygler, M., Thomas, D.Y. and Gehring, K. 2009. Structure of the noncatalytic domains and global fold of the protein disulfide isomerase ERp72. *Structure* 17: 651-659.

CHROMOSOMAL LOCATION

Genetic locus: TXNDC6 (human) mapping to 3q22.3.

SOURCE

Txl-2 (D-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Txl-2 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-103306 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Txl-2 (D-14) is recommended for detection of Txl-2 of 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).

Suitable for use as control antibody for Txl-2 siRNA (h): sc-78475, Txl-2 shRNA Plasmid (h): sc-78475-SH and Txl-2 shRNA (h) Lentiviral Particles: sc-78475-V.

Molecular Weight of Txl-2: 30 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.