SANTA CRUZ BIOTECHNOLOGY, INC.

Trx (N-20): sc-18215

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 has several biological functions. It acts as a hydrogen donor for ribonucleotide reductase, which is critical for DNA synthesis, and modulates the DNA-binding activity of several transcription factors, including NFκB, AP-1, p53, TFIIIC and glucocorticoid receptor. Trx also stimulates cell growth, is an inhibitor of apoptosis and plays a role in the protection against oxidative stress. Drugs that inhibit Trx have antitumor activity, suggesting that Trx is involved in a variety of human diseases, including cancer. TrxR is a ubiquitously expressed flavoprotein that catalyzes the NADPH-dependent reduction of Trx as well as several other oxidized cellular components.

CHROMOSOMAL LOCATION

Genetic locus: TXN (human) mapping to 9q31.3; Txn1 (mouse) mapping to 4 B3.

SOURCE

Trx (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Trx 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-18215 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Trx (N-20) is recommended for detection of Trx of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 Trx siRNA (h): sc-106984, Trx siRNA (m): sc-36749, Trx shRNA Plasmid (h): sc-106984-SH, Trx shRNA Plasmid (m): sc-36749-SH, Trx shRNA (h) Lentiviral Particles: sc-106984-V and Trx shRNA (m) Lentiviral Particles: sc-36749-V.

Molecular Weight of Trx: 12 kDa.

Positive Controls: AML-193 whole cell lysate: sc-364182, HeLa whole cell lysate: sc-2200 or BJAB whole cell lysate: sc-2207.

RESEARCH USE

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

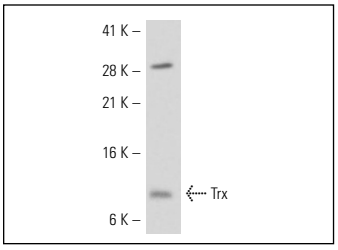
PROTOCOLS

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

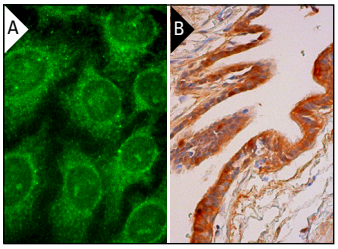
STORAGE

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

DATA



Trx (N-20): sc-18215. Western blot analysis of Trx expression in AML-193 whole cell lysate.



Trx (N-20): sc-18215. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human bronchus tissue showing cytoplasmic and nuclear staining of respiratory epithelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Tanida, I., et al. 2004. Human light chain 3/MAP1LC3B is cleaved at its carboxyl-terminal Met121 to expose Gly120 for lipidation and targeting to autophagosomal membranes. J. Biol. Chem. 279: 47704-47710.
2. Yeghiazaryan, K., et al. 2007. Irradiated breast cancer patients demonstrate subgroup-specific regularities in protein expression patterns of circulating leukocytes. Cancer Genomics Proteomics 4: 411-418.
3. Evens, A.M., et al. 2008. Hypoxia inducible factor-α activation in lymphoma and relationship to the thioredoxin family. Br. J. Haematol. 14: 676-680.
4. Anathy, V., et al. 2009. Redox amplification of apoptosis by caspase-dependent cleavage of glutaredoxin 1 and S-glutathionylation of Fas. J. Cell Biol. 184: 241-252.
5. Rao, A.K., et al. 2009. Thioredoxin and thioredoxin reductase influence estrogen receptor α-mediated gene expression in human breast cancer cells. J. Mol. Endocrinol. 43: 251-261.
6. Vázquez-Medina, J.P., et al. 2011. Antioxidant capacity develops with maturation in the deep-diving hooded seal. J. Exp. Biol. 214: 2903-2910.
7. Madan, E., et al. 2013. SCO2 induces p53-mediated apoptosis by Thr845 phosphorylation of ASK-1 and dissociation of the ASK-1-Trx complex. Mol. Cell. Biol. 33: 1285-1302.
8. Baldelli, S., et al. 2014. PGC-1α buffers ROS-mediated removal of mitochondria during myogenesis. Cell Death Dis. 5: e1515.

MONOS Satisfaction Guaranteed

Try **Trx (A-5): sc-166393** or **Trx (D-4): sc-271281**, our highly recommended monoclonal alternatives to Trx (N-20). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Trx (A-5): sc-166393**.