

# Trx (FL-105): sc-20146

## 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 (FL-105) is a rabbit polyclonal antibody raised against amino acids 1-105 representing full length 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.

Trx (FL-105) is available conjugated to agarose (sc-20146 AC), 500 μg/0.25 ml agarose in 1 ml, for IP.

## APPLICATIONS

Trx (FL-105) 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).

Trx (FL-105) is also recommended for detection of Trx in additional species, including equine, bovine and porcine.

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: Trx (h): 293 Lysate: sc-110552, THP-1 cell lysate: sc-2238 or AML-193 whole cell lysate.

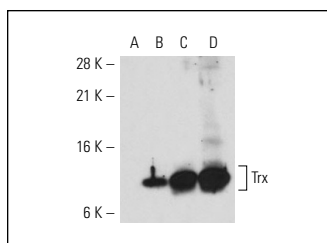
## STORAGE

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

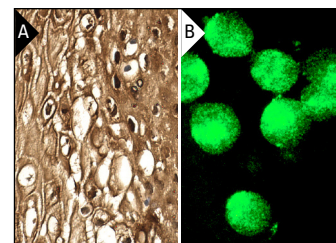
## RESEARCH USE

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

## DATA



Trx (FL-105): sc-20146. Western blot analysis of Trx expression in non-transfected 293: sc-110760 (A), human Trx transfected 293: sc-110552 (B), THP-1 (C) and AML-193 (D) whole cell lysates.



Trx (FL-105): sc-20146. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cervix tissue showing cytoplasmic and nuclear staining of squamous epithelial cells (A). Immunofluorescence staining of methanol-fixed BJAB cells showing cytoplasmic localization (B).

## SELECT PRODUCT CITATIONS

- Freeman, R.E., et al. 2006. Role of thioredoxin-1 in apoptosis induction by  $\alpha$ -tocopheryl succinate and TNF-related apoptosis-inducing ligand in mesothelioma cells. *FEBS Lett.* 580: 2671-2676.
- Niso-Santano, M., et al. 2010. Activation of apoptosis signal-regulating kinase 1 is a key factor in paraquat-induced cell death: modulation by the Nrf2/Trx axis. *Free Radic. Biol. Med.* 48: 1370-1381.
- Hama, I., et al. 2010. Simultaneous expression of glutathione, thioredoxin-1, and their reductases in nerve transected hypoglossal motor neurons of rat. *Brain Res.* 1306: 1-7.
- Edes, K., et al. 2010. JS-K, a nitric oxide prodrug, has enhanced cytotoxicity in colon cancer cells with knockdown of thioredoxin reductase 1. *PLoS ONE* 5: e8786.
- Issaeva, I., et al. 2010. Generation of double-labeled reporter cell lines for studying co-dynamics of endogenous proteins in individual human cells. *PLoS ONE* 5: e13524.
- Fortin, J., et al. 2010. ASK1-P38 pathway is important for anoikis induced by microtubule-targeting aryl chloroethylureas. *J. Pharm. Pharm. Sci.* 13: 175-190.
- Duan, X., et al. 2011. Differential roles for the interferon-inducible IFI16 and AIM2 innate immune sensors for cytosolic DNA in cellular senescence of human fibroblasts. *Mol. Cancer Res.* 9: 589-602.
- Cheng, R.J., et al. 2011. Expression of macrophage migration inhibitory factor and CD74 in cervical squamous cell carcinoma. *Int. J. Gynecol. Cancer* 21: 1004-1012.



Try **Trx (A-5): sc-166393** or **Trx (D-4): sc-271281**, our highly recommended monoclonal alternatives to Trx (FL-105). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **Trx (A-5): sc-166393**.