

▶ Trx-2 (h2): 293T Lysate: sc-116269

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 anti-tumor activity, suggesting that thioredoxin is involved in a variety of human diseases, including cancer. TrxR is an ubiquitously expressed flavoprotein that catalyzes the NADPH-dependent reduction of thioredoxin as well as several other oxidized cellular components. Mammalian TrxR is a part of a selenium-containing pyridine nucleotide-disulphide oxidoreductase family, which has a conserved catalytic site of Cys-Val-Asn-Val-Gly-Cys. The two known forms of TrxR, TrxR1 and TrxR2, are also involved in the prevention of oxidative stress. Inhibition of TrxR activity may provide for potential treatments of cancer, AIDS and other autoimmune diseases as well as bacterial infections and parasitic diseases.

REFERENCES

1. Junn, E., et al. 2000. Vitamin D3 upregulated protein 1 mediates oxidative stress via suppressing the thioredoxin function. *J. Immunol.* 164: 6287-6295.
2. Tanaka, T., et al. 2000. Redox regulation by thioredoxin superfamily; protection against oxidative stress and aging. *Free Radic. Res.* 33: 851-855.
3. Arner, E.S., et al. 2000. Physiological functions of thioredoxin and thioredoxin reductase. *Eur. J. Biochem.* 267: 6102-6109.
4. Williams, C.H., et al. 2000. Thioredoxin reductase two modes of catalysis have evolved. *Eur. J. Biochem.* 267: 6110-6117.
5. Becker, K., et al. 2000. Thioredoxin reductase as a pathophysiological factor and drug target. *Eur. J. Biochem.* 267: 6118-6125.
6. Mustacich, D., et al. 2000. Thioredoxin reductase. *Biochem. J.* 346: 1-8.
7. Powis, G., et al. 2001. Properties and biological activities of thioredoxins. *Annu. Rev. Pharmacol. Toxicol.* 41: 261-295.

CHROMOSOMAL LOCATION

Genetic locus: TXN2 (human) mapping to 22q12.3.

PRODUCT

Trx-2 (h2): 293T Lysate represents a lysate of human Trx-2 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

APPLICATIONS

Trx-2 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive Trx-2 antibodies. Recommended use: 10-20 µl per lane.

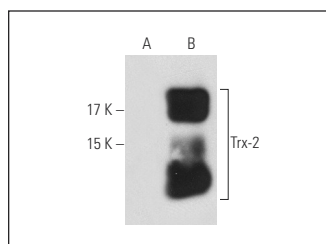
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Trx-2 (F-10): sc-133201 is recommended as a positive control antibody for Western Blot analysis of enhanced human Trx-2 expression in Trx-2 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

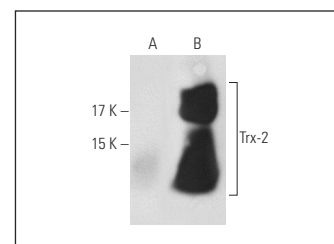
RECOMMENDED SUPPORT REAGENTS

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.

DATA



Trx-2 (F-10): sc-133201. Western blot analysis of Trx-2 expression in non-transfected: sc-117752 (A) and human Trx-2 transfected: sc-116269 (B) 293T whole cell lysates.



Trx-2 (B-8): sc-133200. Western blot analysis of Trx-2 expression in non-transfected: sc-117752 (A) and human Trx-2 transfected: sc-116269 (B) 293T whole cell lysates.

RESEARCH USE

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