SANTA CRUZ BIOTECHNOLOGY, INC.

TrxR1 (h): 293 Lysate: sc-113112

BACKGROUND

Thioredoxin (Trx) is a redox protein 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 (GR). 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. Thioredoxin 2 (Trx-2) is a small redox protein that is localized to the mitochondria and is essential for cell viability, playing a crucial role in the scavenging of ROS in mitochondria and regulating the mitochondrial apoptosis signaling pathway. Trx reductases (TrxR1 and TrxR2) are ubiquitously expressed flavoproteins that catalyze the NADPH-dependent reduction of Trx as well as several other oxidized cellular components. Mammalian Trx reductases are a part of a selenium-containing pyridine nucleotide-disulphide oxidoreductase family, which has a conserved catalytic site of Cys-Val-Asn-Val-Gly-Cys. 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

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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.

CHROMOSOMAL LOCATION

Genetic locus: TXNRD1 (human) mapping to 12q23.3.

PRODUCT

TrxR1 (h): 293 Lysate represents a lysate of human TrxR1 transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

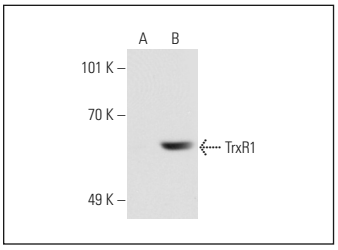
APPLICATIONS

TrxR1 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive TrxR1 antibodies. Recommended use: 10-20 µl per lane.

Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-tranfected 293 cells.

TrxR1 (19A1): sc-58444 is recommended as a positive control antibody for Western Blot analysis of enhanced human TrxR1 expression in TrxR1 transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

DATA



TrxR1 (19A1): sc-58444. Western blot analysis of TrxR1 expression in non-transfected: sc-110760 (**A**) and human TrxR1 transfected: sc-113112 (**B**) 293 whole cell lysates.

RESEARCH USE

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