

# TRP14 (Q-17): sc-109113



The Power to Question

## BACKGROUND

Thioredoxins comprise a family of small proteins that, by catalyzing the oxidation of disulfide bonds, participate in redox reactions throughout the cell. Proteins that contain thioredoxin domains do not necessarily convey the oxidative properties of thioredoxins, but generally function as disulfide isomerases that enzymatically rearrange disulfide bonds found in various proteins. TRP14 (thioredoxin-related protein 14), also known as Protein 42-9-9, TXNL5 or TXNDC17, is a 123 amino acid cytoplasmic protein that is ubiquitously expressed. Considered a disulfide reductase, TRP14 may participate in various redox reactions through the reversible oxidation of its active center dithiol to a disulfide and catalyze dithiol-disulfide exchange reactions. TRP14 modulates TNF $\alpha$  signaling and NF $\kappa$ B activation. Suggested to have peroxidase activity, TRP14 may contribute to the elimination of cellular hydrogen peroxide. TRP14 is reduced by TrXR1 and interacts with DYNLL1.

## REFERENCES

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2. Jeong, W., et al. 2004. Identification and characterization of TRP14, a thioredoxin-related protein of 14 kDa. New insights into the specificity of thioredoxin function. *J. Biol. Chem.* 279: 3142-3150.
3. Jeong, W., et al. 2004. Roles of TRP14, a thioredoxin-related protein in tumor necrosis factor  $\alpha$  signaling pathways. *J. Biol. Chem.* 279: 3151-3159.
4. Woo, J.R., et al. 2004. Structural basis of cellular redox regulation by human TRP14. *J. Biol. Chem.* 279: 48120-48125.
5. Nakamura, H. 2005. Thioredoxin and its related molecules: update 2005. *Antioxid. Redox Signal.* 7: 823-828.
6. Stefanková, P., et al. 2005. Thioredoxin-structural and functional complexity. *Gen. Physiol. Biophys.* 24: 3-11.
7. Jiang, S., et al. 2007. Human TRP14 gene homologue from amphioxus *Branchiostoma belcheri*: identification, evolution, expression and functional characterization. *J. Anat.* 210: 555-564.
8. Jung, Y., et al. 2008. Dynein light chain LC8 negatively regulates NF $\kappa$ B through the redox-dependent interaction with I $\kappa$ B $\alpha$ . *J. Biol. Chem.* 283: 23863-23871.

## CHROMOSOMAL LOCATION

Genetic locus: TXNDC17 (human) mapping to 17p13.1; Txndc17 (mouse) mapping to 11 B4.

## SOURCE

TRP14 (Q-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TRP14 of human origin.

## STORAGE

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

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-109113 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

TRP14 (Q-17) is recommended for detection of TRP14 of mouse, rat and 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); non cross-reactive with other thioredoxin-related protein family members.

TRP14 (Q-17) is also recommended for detection of TRP14 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for TRP14 siRNA (h): sc-93898, TRP14 siRNA (m): sc-154689, TRP14 shRNA Plasmid (h): sc-93898-SH, TRP14 shRNA Plasmid (m): sc-154689-SH, TRP14 shRNA (h) Lentiviral Particles: sc-93898-V and TRP14 shRNA (m) Lentiviral Particles: sc-154689-V.

Molecular Weight of TRP14: 14 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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.