Revision 1

Store at -20C

#6925

# TRXR1 Antibody

Cell Signaling TECHNOLOGY®

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| Applications: | Reactivity: | Sensitivity: | MW (kDa): | Source/Isotype: | UniProt ID: | Entrez-Gene Id: |
|---|---|---|---|---|---|---|
| W | H M R Mk | Endogenous | 55 | Rabbit | #Q16881 | 7296 |

## Product Usage Information

| Application | Dilution |
|---|---|
| Western Blotting | 1:1000 |

## Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

## Specificity/Sensitivity

TRXR1 Antibody recognizes endogenous levels of total TRXR1 protein.

## Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ile259 of human TRXR1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

## Background

TRXR1 (thioredoxin reductase 1) is a selenocysteine-containing protein that is involved in redox homeostasis (1-6). Its canonical target is thioredoxin, another redox protein (1). Together, they are involved in many functions such as antioxidant regulation (3-6), cell proliferation (2,3,5), DNA replication (2,3), and transcription (3,5). TRXR1 is also capable of reducing a wide array of cellular proteins (1,3). Selenium deficiency, either by diet modification (2,6) or introduction of methylmercury (4), hinders proper expression and function of TRXR1. It is possible that this effect, which results in a higher oxidative state, is a result of the selenocysteine codon (UGA) being read as a STOP codon in the absence of adequate selenium (4). The functions of TRXR1 in cell proliferation and antioxidant defense make it a potential therapeutic target.

## Background References

1. Turanov, A.A. et al. (2010) *Biochem J* 430, 285-93.
2. Gasdaska, P.Y. et al. (1995) *FEBS Lett* 373, 5-9.
3. Gromer, S. et al. (2004) *Med Res Rev* 24, 40-89.
4. Usuki, F. et al. (2011) *J Biol Chem* 286, 6641-9.
5. Pappas, A.C. et al. (2008) *Comp Biochem Physiol B Biochem Mol Biol* 151, 361-72.
6. Müller, M. et al. (2010) *Genes Nutr* 5, 297-307.

## Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

## Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

## Applications Key

**W:** Western Blotting

## Cross-Reactivity Key

**H:** Human **M:** Mouse **R:** Rat **Mk:** Monkey

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