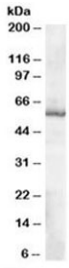
TXNRD1 Goat Polyclonal Antibody / Thioredoxin Reductase 1 Goat Antibody (R36197)

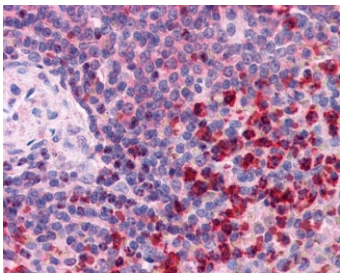
Catalog No.	Formulation	Size
R36197-100UG	0.5 mg/ml in 1X TBS, pH7.3, with 0.5% BSA (US sourced) and 0.02% sodium azide	100 ug

Bulk quote request

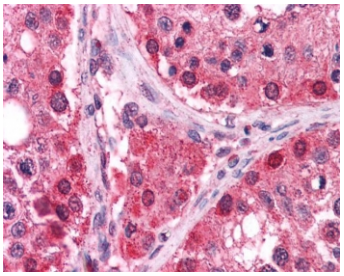
Species Reactivity	Human
Predicted Reactivity	Pig
Format	Antigen affinity purified
Host	Goat
Clonality	Polyclonal (goat origin)
Isotype	Goat Ig
Purity	Antigen affinity
Gene ID	7296
Localization	Nuclear, cytoplasmic
Applications	Western blot: 0.1-1ug/ml IHC (FFPE): 2.5ug/ml ELISA (peptide) LOD: 1:32000
Limitations	This TXNRD1 Goat Polyclonal Antibody / Thioredoxin Reductase 1 Goat Antibody is available for research use only.



TXNRD1 Goat Polyclonal Antibody WB Analysis of Human Placenta Lysate. Western blot analysis of human placenta lysate using Thioredoxin Reductase 1 Goat Antibody at 0.1 ug/ml. A distinct immunoreactive band is detected at approximately 57 kDa. Although the reference TXNRD1 protein has a calculated molecular weight of approximately 70.9 kDa, published studies have documented alternative TXNRD1 isoforms with molecular weights of approximately 54-60 kDa.



TXNRD1 Goat Polyclonal Antibody IHC Staining of Human Spleen Tissue. Immunohistochemical analysis of FFPE human spleen tissue using Thioredoxin Reductase 1 Goat Antibody at 2.5 ug/ml. Heterogeneous red alkaline phosphatase (AP) staining is observed among splenic cells, with prominent cytoplasmic immunoreactivity in selected cell populations. Heat-induced epitope retrieval was performed by steaming in pH 6 citrate buffer.



TXNRD1 Goat Polyclonal Antibody IHC Staining of Human Testis Tissue. Immunohistochemical analysis of FFPE human testis tissue using Thioredoxin Reductase 1 Goat Antibody at 2.5 ug/ml. Red alkaline phosphatase (AP) staining is observed in numerous cells within the testicular tissue, with predominantly cytoplasmic immunoreactivity and variable staining intensity. Heat-induced epitope retrieval was performed by steaming in pH 6 citrate buffer.

Description

TXNRD1 Goat Polyclonal Antibody / Thioredoxin Reductase 1 Goat Antibody targets TXNRD1, a selenium-containing oxidoreductase that plays a central role in maintaining cellular redox homeostasis. Also known as thioredoxin reductase 1 (TrxR1), this enzyme is a major component of the cytosolic thioredoxin system, which protects cellular proteins against oxidative damage and supports essential metabolic and signaling processes. TXNRD1 uses reducing equivalents from NADPH to regenerate reduced thioredoxin, enabling thioredoxin to participate in reactions involving protein disulfide bonds and redox-sensitive regulatory proteins.

TXNRD1 belongs to the pyridine nucleotide-disulfide oxidoreductase family and functions as a homodimer. Each subunit contains flavin adenine dinucleotide and conserved catalytic residues that participate in electron transfer. A distinctive feature of mammalian TXNRD1 is its C-terminal selenocysteine-containing catalytic motif, which contributes to the enzyme's broad substrate-reducing capacity. Through sequential electron transfer reactions, TXNRD1 maintains the reducing activity of thioredoxin and supports other processes requiring controlled cellular oxidation-reduction reactions.

The thioredoxin system is closely associated with peroxiredoxins, which use electrons supplied through thioredoxin to reduce hydrogen peroxide and certain organic hydroperoxides. This antioxidant network helps regulate intracellular oxidant concentrations while preserving the redox-sensitive signaling mechanisms required for normal cellular function. TXNRD1 also indirectly supports DNA synthesis through the thioredoxin-dependent reduction of ribonucleotide reductase. Its activity therefore contributes to the coordination of antioxidant defense, nucleotide production, cellular proliferation, and responses to metabolic stress.

TXNRD1 expression and activity are influenced by cellular antioxidant requirements and stress-responsive signaling pathways, including mechanisms involving NRF2. Altered TXNRD1 activity has been investigated in cancer biology because proliferating cells frequently depend on robust antioxidant systems to manage elevated oxidative stress. Inhibition of thioredoxin reductase activity can disrupt redox balance and influence cell survival, making the enzyme an important subject of therapeutic research. TXNRD1 Goat Polyclonal Antibody provides a reagent for investigating thioredoxin reductase 1 expression in studies of oxidative stress, selenium-dependent enzyme function, and cellular antioxidant regulation.

For an alternative antibody targeting thioredoxin reductase 1, see our TXNRD1 Antibody ACCE-20, a rabbit monoclonal antibody with western blot and knockout testing data.

Application Notes

Optimal dilution of the TXNRD1 Goat Polyclonal Antibody / Thioredoxin Reductase 1 Goat Antibody should be determined

by the researcher.

Immunogen

Amino acids TKRSGASILQAGC were used as the immunogen for this TXNRD1 antibody.

Storage

Aliquot and store the TXNRD1 antibody at -20oC.

Alternate Names

Thioredoxin reductase 1 antibody, TrxR1 antibody, TRXR1 antibody, TR1 antibody, cytosolic thioredoxin reductase antibody, thioredoxin reductase type 1 antibody

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