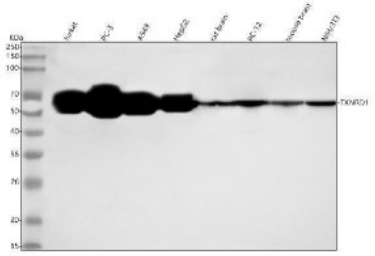
TXNRD1 Antibody ACCE-20 / Thioredoxin Reductase 1 Antibody [clone ACCE-20] (FY13705)

Catalog No.	Formulation	Size
FY13705	Rabbit IgG in stabilizing components, phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol	100 ul

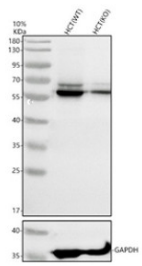
Recombinant RABBIT MONOCLONAL

Bulk quote request

Species Reactivity	Human
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	ACCE-20
Purity	Affinity purified
UniProt	Q16881
Applications	Western blot: 1:500
Limitations	This TXNRD1 Antibody ACCE-20 / Thioredoxin Reductase 1 Antibody is available for research use only.



TXNRD1 Antibody ACCE-20 WB Analysis of HCT116 WT and TXNRD1 KO Cells. Western blot analysis of wild-type (WT) and TXNRD1-knockout (KO) human HCT116 whole-cell lysates using Thioredoxin Reductase 1 Antibody clone ACCE-20 at a 1:500 dilution. Immunoreactive bands are observed in the approximately 55-65 kDa region, with a prominent signal substantially reduced in the KO sample. The theoretical molecular weight of TXNRD1 is ~70 kDa but published studies have documented TXNRD1 splice variants with molecular weights of approximately 54 and 60 kDa.



TXNRD1 Antibody ACCE-20 WB Analysis of HCT116 WT and TXNRD1 KO Cells. Western blot analysis of wild-type (WT) and TXNRD1-knockout (KO) human HCT116 whole-cell lysates using Thioredoxin Reductase 1 Antibody clone ACCE-20 at a 1:500 dilution. The theoretical molecular weight of TXNRD1 is ~70 kDa but published studies have documented TXNRD1 splice variants with molecular weights of approximately 54 and 60 kDa. GAPDH serves as a loading control.

Description

TXNRD1 Antibody ACCE-20 / Thioredoxin Reductase 1 Antibody recognizes TXNRD1, a cytosolic selenoprotein that functions as a central component of the thioredoxin antioxidant system. Also known as thioredoxin reductase 1 (TrxR1), this NADPH-dependent oxidoreductase maintains thioredoxin in its reduced, biologically active state. The thioredoxin system contributes to cellular redox homeostasis by regulating protein disulfide bonds, supporting antioxidant defenses, and maintaining the activity of proteins involved in metabolism, signaling, and cell survival. TXNRD1 is particularly important in cells exposed to oxidative stress or increased metabolic demands.

TXNRD1 belongs to the pyridine nucleotide-disulfide oxidoreductase family and contains a C-terminal redox-active motif incorporating the amino acid selenocysteine. This selenium-containing residue is essential for the catalytic activity of the enzyme and contributes to its ability to reduce thioredoxin and other substrates. TXNRD1 functions as a homodimer, with electron transfer proceeding from NADPH through flavin adenine dinucleotide and conserved redox-active residues to the C-terminal catalytic center. Reduced thioredoxin subsequently participates in reactions that maintain protein function and protect cells against oxidative damage.

The TXNRD1-thioredoxin system supports several important cellular processes, including DNA synthesis, redox-sensitive signal transduction, and protection against reactive oxygen species. Thioredoxin supplies reducing equivalents to peroxiredoxins, which participate in the removal of hydrogen peroxide and related oxidants. The system also contributes to the regulation of transcription factors and signaling proteins whose activities depend on the oxidation state of specific cysteine residues. Through these functions, TXNRD1 helps coordinate antioxidant defense with cellular growth and stress responses.

Altered TXNRD1 expression and activity have been investigated in cancer, inflammatory conditions, and disorders involving oxidative stress. Increased thioredoxin system activity can support the survival of rapidly proliferating cells by maintaining a favorable intracellular redox environment. TXNRD1 has therefore attracted interest as a potential therapeutic target, particularly in cancers exhibiting elevated antioxidant capacity. TXNRD1 Antibody ACCE-20 supports investigations of thioredoxin reductase 1 protein expression and the relationship between selenium-dependent redox regulation, oxidative stress responses, and cellular metabolism.

Explore additional Cell Biology Antibodies for investigating cellular redox regulation, oxidative stress responses, and antioxidant defense mechanisms.

Application Notes

Optimal dilution of the TXNRD1 Antibody ACCE-20 / Thioredoxin Reductase 1 Antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Thioredoxin Reductase 1 protein was used as the immunogen for the TXNRD1 Antibody ACCE-20.

Storage

The TXNRD1 Antibody ACCE-20 can be stored at -20oC.

Alternate Names

Thioredoxin reductase 1 antibody, TRXR1 antibody, TR1 antibody, cytosolic thioredoxin reductase antibody, thioredoxin reductase type 1 antibody, TXNRD1 selenoprotein antibody

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