

• Rabbit Anti-Thioredoxin Polyclonal Antibody

Primary Antibodies

Background:

Thioredoxins (Trx) are small, multi functional proteins with oxidoreductase activity and are ubiquitous in essentially all living cells. Trx contains a redox active disulfide/dithiol group within the conserved Cys-Gly-Pro-Cys active site. The two cysteine residues in the conserved active centers can be oxidized to form intramolecular disulfide bonds. Reduction of the active site disulfide in oxidized Trx is catalyzed by Trx reductase with NADPH as the electron donor. The reduced Trx is a hydrogen donor for ribonucleotide reductase, the essential enzyme for DNA synthesis, and a potent general protein disulfide reductase with numerous functions in growth and redox regulations. Specific protein disulfide targets for reduction by Trx include protein disulfide isomerase (PDI) and a number of transcription factors such as p53, NFkB and AP1. Trx is also capable of removing H₂O₂, particularly when it is coupled with either methionine sulfoxide reductase or several isoforms of peroxiredoxins.

TRX family; composed of two groups: Group I, which includes proteins that exclusively encode a TRX domain; and Group II, which are composed of fusion proteins of TRX and additional domains. Group I TRX is a small ancient protein that alter the redox state of target proteins via the reversible oxidation of an active site dithiol, present in a CXXC motif, partially exposed at the protein's surface. TRX reduces protein disulfide bonds, resulting in a disulfide bond at its active site. Oxidized TRX is converted to the active form by TRX reductase, using reducing equivalents derived from either NADPH or ferredoxins. By altering their redox state, TRX regulates the functions of at least 30 target proteins, some of which are enzymes and transcription factors. It also plays an important role in the defense against oxidative stress by directly reducing hydrogen peroxide and certain radicals, and by serving as a reductant for peroxiredoxins. At least two major types of functional TRXs have been reported in most organisms; in eukaryotes, they are located in the cytoplasm and the mitochondria. Higher plants contain more types (at least 20 TRX genes have been detected in the genome of *Arabidopsis thaliana*), two of which (types f and m) are located in the same compartment, the chloroplast. Also included in the alignment are TRX-like domains which show sequence homology to TRX but do not contain the redox active CXXC motif. Group II proteins, in addition to either a redox active TRX or a TRX-like domain, also contain additional domains, which may or may not possess homology to known proteins.

Source/Purification:

KLH conjugated synthetic peptide derived from human Thioredoxin (65-105aa). Was purified by Protein A and peptide affinity chromatography.

Storage: Prepared as lyophilized powder or liquid and shipped on ice. Store at -20°C for one year.

Reconstitution:

If the antibody is in liquid form, no reconstitution needed.

Reconstitution is only required for the lyophilized antibody. Please refer to the reconstitution instruction card in the package.

Size: 100ul or 100ug lyophilized

Concentration: 1ug/uL

Host: Rabbit

Reactivities:

Human, Mouse, Rat, Dog, Pig, Cow, Horse, Rabbit,

Application:

- ELISA(1:500-1000)
- IP(1:20-100)
- IHC-P(1:100-500)
- IHC-F(1:100-500)
- IF(1:100-500)
- Not yet tested in other applications.
Optimal working dilutions must be determined by the end user.

Antibody Type: Polyclonal

Isotype: IgG

Molecular Weight: 12kDa

Preservatives:

10ug/uL BSA and 0.1% NaN₃.

For research use only. CAUTION: Not for human or animal therapeutic or diagnostic use.