

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Thioredoxin-1 in direct ELISAs and Western blots. In direct ELISAs, less than 25% cross-reactivity with recombinant mouse Thioredoxin-1 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human Thioredoxin-1 Val2-Val105 Accession # P10599
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

Thioredoxins (Trxs) are a group of small ubiquitous proteins in all living cells that are key regulators of cellular redox balance (1, 2). The mammalian Trx family has three members. The Trx-1, which is a secreted and cellular protein, the mitochondria-specific Trx-2, and the Trx-like cytosolic protein p32TrxL (3-5). The active site of mammalian Trxs contains two cysteines in the conserved sequence -Y-C-G-P-C-K-. In Trx-1 the conserved cysteine residues are in positions 32 and 35, respectively. Trxs exist either in a reduced or in an oxidized state when the two cysteines at the active site form an intramolecular disulfide bridge. NADPH and the flavoprotein thioredoxin reductase can convert the oxidized Trx into the reduced Trx. Trx-1 is the only extracellular occurring thioredoxin, and is secreted by lymphocytes, hepatocytes, fibroblasts, and several tumor cells. Plasma concentrations of Trx-1 are up to 6 nM (6). In cells, Trx-1 is localized predominantly in the cytoplasm. Small amounts have been detected in the nucleus and in association with the outside surface of the cells. Expression of Trx-1 is increased under various stress conditions such as hypoxia, elevated hydrogen peroxide concentrations, photochemical oxidative stress, and viral and bacterial infections. Biological functions of Trx-1 include growth factor activity, antioxidant properties, a cofactor that provides reducing equivalents, and transcriptional regulation (1, 2). The synovial tissue of rheumatoid arthritis patients produces increased levels of Trx-1 under oxidative stress conditions, and a correlation exists between the plasma levels of Trx-1 and the severity of the disease, making Trx-1 a biomarker for this pathological condition (7, 8).

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.