

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Thioredoxin-1 in direct ELISAs.
Source	Monoclonal Mouse IgG ₁ Clone # 763629
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human Thioredoxin-1 Met1-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.
Immunocytochemistry	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).

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