

Human/Mouse/Rat Thioredoxin Reductase 1/TRXR1 Alexa Fluor® 647-conjugated Antibody

Monoclonal Mouse IgG₁ Clone # 489804

Catalog Number: IC7428R

DESCRIPTION	
Species Reactivity	Human/Mouse/Rat
Specificity	Detects mouse Thioredoxin Reductase 1/TRXR1 in direct ELISAs and human, mouse, and rat Thioredoxin Reductase 1/TRXR1 in Western blots.
Source	Monoclonal Mouse IgG ₁ Clone # 489804
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant mouse Thioredoxin Reductase 1/TRXR1 Met1-Ile497 Accession # Q16881
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *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. <i>General Protocols</i> are available in the <i>Technical Information</i> section on our website.		
	Recommended Concentration	Sample
Intracellular Staining by Flow Cytometry	0.25-1 µg/10 ⁶ cells	HeLa human cervical epithelial carcinoma cell line fixed with paraformaldehyde and permeabilized with saponin

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. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Thioredoxin reductase 1 (TRXR1) is an approximately 70 kDa member of the class-I pyridine nucleotide-disulfide oxidoreductase family. Human TRXR1 is 649 amino acids (aa) in length. Residues 151-152 constitute a propeptide that is deleted from the mature protein. Splicing variants produce five additional isoforms for human TRXR1. Isoform 2 has a 32 aa substitution for aa 107-138 and a deletion of aa 1-106. Isoform 3 has a deletion of aa 1-51 and a 49 aa substitution for aa 52-100. Isoform 4 is missing aa 1-98 and has a 3 aa substitution for aa 99-101. Isoform 5 has a deletion of aa 1-150. Residues 56-156 make up a glutaredoxin domain, and residues 520-632 constitute a pyridine nucleotide-disulphide oxidoreductase dimerization domain. In addition, there are three phosphotyrosines at positions 161, 163, and 281, and a selenocysteine at position 648. Human TRXR1 shares 74% and 70% aa sequence identity with mouse and rat TRXR1, respectively. Isoform 1 is involved in glutaredoxin activity as well as thioredoxin reductase activity, and it induces actin and tubulin polymerization, which leads to formation of cell membrane protrusions. Isoform 4 has been shown to enhance the transcriptional activity of the beta receptor only. Finally, isoform 5 mediates cell death induced by a combination of interferon-beta and retinoic acid. Isoform 1 is expressed mostly in the Leydig cells, but also in the ovary, spleen, heart, liver, kidney, and pancreas and in a number of cancer cell lines. Isoform 4 is widely expressed with highest levels in the kidney, uterus, testis, ovary, prostate, placenta, and fetal liver.

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