Thioredoxin Reductase Colorimetric Assay Kit

Cat. No. Kit-0834 **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Thioredoxin Reductase (TrxR) Assay Kit provides a convenient method for quantifying mammalian TrxR activity from tissue homogenates and cell lysates in a 96-well plate format. In this assay, TrxR uses NADPH to reduce DTNB to 5-thio-2-nitrobenzoic acid (TNB) which absorbs strongly at 405-414 nm. The kit includes all reagents needed to assay mammalian TrxR activity. Measurement of TrxR activity in the absence and in the presence of aurothiomalate, a specific TrxR inhibitor included in the kit, allows for correction of non-thioredoxin reductase-independent DTNB reduction.
Description	The thioredoxin system is one of the key cellular redox regulators. Together with the glutathione system, it controls the redox state of cysteine residues in proteins and has numerous other roles in redox regulation of cellular processes. The thioredoxin system is composed of thioredoxin reductase (TrxR) and thioredoxin. TrxRs are a family of selenium-containing pyridine nucleotide-disulfide oxidoreductases. TrxR transfers electrons from NADPH to thioredoxin, which in turn reduces thioredoxin peroxidase, methionine sulfoxide reductase, ribonucleotide reductase, and other important redox proteins. TrxRs are able to reduce a number of substrates other than thioredoxin, including selenite, lipid hydroperoxides, vitamin K, and hydrogen peroxide. To date, two forms of mammalian TrxRs have been characterized. One is present in the cytosol (called TrxR1, TR1, or TxnRd1) and the other resides in the mitochondria (called TrxR2, TR3, or TxnRd2). TrxRs have been implicated in playing a role in protecting against oxidative injury, cell growth and transformation, and the recycling of ascorbate. Determining the involvement of TrxR in both normal and pathological cell function, as well as its drug interaction, may provide new insights into

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	diseases and provide new treatments for cancer, AIDS, and autoimmune diseases.
Usage	Please read these instructions carefully before beginning this assay.For research use only. Not for human or diagnostic use.
Storage	Stability: 1 year;Storage: -20°C;This kit will perform as specified if stored at -20°C and used before the expiration date indicated on the outside of the box.
Kit Components	TrxR Assay Buffer (10X): 1 vial;Thioredoxin Reductase Control: 1 vial;TrxR Inhibitor 2 vials;TrxR DTNB: 1 vial;TrxR NADPH: 2 vials;TrxR DMSO: 1 vial;96-Well Plate (colorimetric assay): 1 plate;96-Well Cover Sheet: 1 cover

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