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PRODUCT SPECIFICATION

Product No.	TRX-03
Product description:	Human Thioredoxin 1
Lot No.	4 160229
Specifications:	<p>One ampoule contains 1.2 mg recombinant human thioredoxin 1 (Trx1), which was lyophilized from 185 µl 50 mM Tris-Cl, pH 7.5 1 mM EDTA.</p> <p>Use: Reconstitute with 480 µl H₂O. This gives a solution of 210 µM thioredoxin. The protein may largely be oxidized containing two disulfides and can be reactivated by addition of a 5-fold molar excess of DTT or by use of Reductacryl®reagent (Calbiochem). It is also activated by incubation with NADPH and TrxR (product TR-03 and TR-03B)</p>
Reference:	Ren, X. et al. (1998) <i>Biochemistry</i> , 32, 9701-9708. Hashemy, S.I, and Holmgren, A. : Regulation of the catalytic activity and structure of human thioredoxin 1 via oxidation and S-nitrosylation of cysteine residues. <i>J.Biol. Chem.</i> 283, 21890-21898, 2008.
Storage:	Keep at +4°C or alternatively reconstituted protein in aliquots at -20°C
Examples of use:	Activity can be measured with the thioredoxin-dependent reduction of insulin using rat recombinant thioredoxin reductase (Product No TR-03). The test mixture should contain 160 µM insulin and 0.2 mM NADPH in 0.1 M potassium phosphate, 2mM EDTA, pH 7,0. In the presence of 5 µM human thioredoxin, 7 nM of mammalian thioredoxin reductase will give a decrease of absorbtion at 340 nm of 0.100 min ⁻¹ .
NOTE!	<p>Make sure to reconstitute all of the lyophilized protein in the ampoule. After adding buffer, close the screw-cap again, shake vigorously, then centrifuge shortly, in order to recover liquid from tube cap and walls.</p> <p>The oxidized protein can display a lag phase in enzyme assays. See Ren, X. et al. (1998) <i>Biochemistry</i>, 32, 9701-9708.</p>