

Recombinant Human TRX Active

Human recombinant protein expressed in *Nicotiana benthamiana*

RF0106

Alternative Names: ATL-derived factor, Surface-associated sulphhydryl protein

Molecular Formula: C556H849N145O165S7

UniProtKB: P10599

p.I: 5,75

Molecular Weight:

Recombinant human TRX is a 12.4 kDa protein containing 110 amino acid residues (aa 2 -105 of P10599 THIO_HUMAN) with a His tag N-terminal.

Sequence:

HHHHHHVKQIESKTAFQEALDAAGDKLVVDFSATWCGPCKMI
KPFHSLSEKYSNVIFLEVDVDDCQDVASECEVKCMPTFQFFKK
GQKVGFEFSGANKEKLEATINELV

Formulation:

Recombinant human TRX is lyophilized from 10mM Phosphate Potassium buffer pH 7,5 and 200 mM NaCl.

Description:

Recombinant human TRX participates in various redox reactions through the reversible oxidation of its active center dithiol to a disulfide and catalyzes dithiol-disulfide exchange reactions. Plays a role in the reversible S-nitrosylation of cysteine residues in target proteins, and thereby contributes to the response to intracellular nitric oxide. It is a small protein which regulates cellular redox status and scavenges reactive oxygen species (ROS). In addition to its anti-oxidant properties, TRX has a crucial role in the redox regulation of cellular signalling and activation, it is involved in several redox-dependent processes such as gene expression, signal transduction, cell growth, apoptosis and interacting with various kinds of target molecules.

Applications:

Functional studies, Cell assay, SDS-PAGE, Western Blot, Antibody Production.

For R+D purposes only. Purchaser must determine the suitability of the product for their particular use.

Upon this protein has not been tested in a particular technique this not necessarily excludes its use in such procedures.

Product(s) expressed through a transient plant system are intrinsically Animal-free

Available sizes: 1 µg, 10 µg, 100 µg of active protein

Ext. Coeff. Abs (280nm) 0.1% (=1g/l) =0,583

Purity >95% by SDS-PAGE gel

Serological identification by WB with specific antibody

Endotoxin Level : < 0.04 EU / µg protein (LAL method)

Source:

Human recombinant protein expressed in *Nicotiana benthamiana*. It is produced by transient expression in nontransgenic plants and is purified by standard protein purification methods. This product contains no animal-derived components or impurities. Animal Free product.

Reconstitution Recommendation:

Lyophilized protein should be reconstituted in water following instructions of batch Quality Control sheet. At higher concentrations the solubility may be reduced and multimers generated. Optimal concentration should be determined for specific application.

Storage and Stability:

This lyophilized preparation is stable at 2-8° C for short term, long storage it should be kept at -20°C. Reconstituted protein should be stored in working aliquots at -20°C. Repeated freezing and thawing is not recommended.

References:

Nordberg, J. and Arnér E. (2001). Reactive oxygen species, antioxidants and the mammalian thioredoxin System. *Free radical biology & Medicine*, 31:1287-1312.

Holmgren, A., (1985). Thioredoxin. *Annu Rev. Biochem.*54:237-271.

Purity Confirmation:

The protein was resolved by SDS polyacrylamide gel electrophoresis and the gel was stained with coomassie blue. Fig. 1.

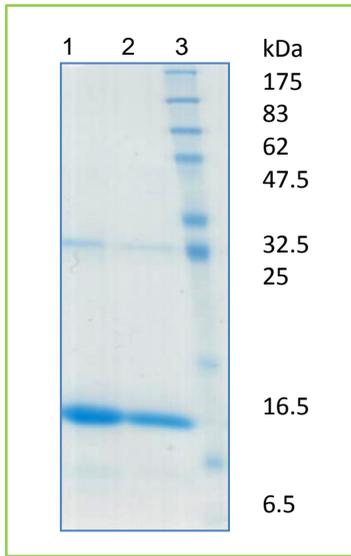


Figure 1.- SDS-PAGE analysis of recombinant TRX. Samples were loaded in 15% SDS-polyacrylamide gel and stained with Coomassie blue. Lane 1-2 contains 0.1 and 0.2 ug of rhuman TRX, lane 3 Molecular weight marker (MWM; kDa); The recombinant protein migrate as a band between 12.5 kDa under reducing conditions. All bands shown in lane 2 and 3 have been identified by MALDI-TOFF as human TRX.

Serological Identification:

The protein was electrophoresed under reducing condition on a 15% SDS-polyacrylamide gel, transferred by electro blotting to a NC membrane and visualized by immune-detection with Anti-His antibody. Fig. 2.

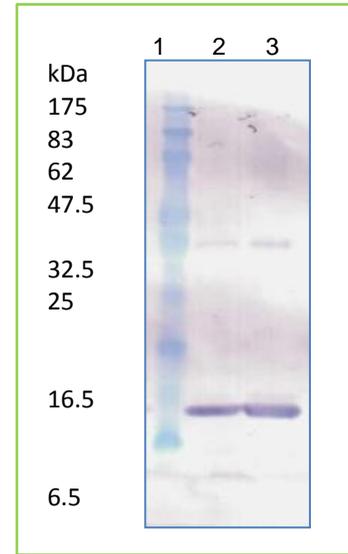


Figure 2.- Western Blot analysis of recombinant TRX. Lane 1, Molecular weight marker (MWM; kDa), lanes 2-3 contains 0.1 and 0.2 ug of rhuman TRX. The recombinant protein migrate as a band between 12.5 kDa under reducing conditions. All bands shown in lane 2 and 3 have been identified by MALDI-TOFF as human TRX.

Bioassay:

1. Specific activity of rHuman TRX is 5-10 A650/min/mg, obtained by measuring the increase of insulin precipitation in absorbance at 650 nm resulting from the reduction of insulin.

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