



# SZABO SCANDIC

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## Produktinformation



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### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# PRODUCT INFORMATION



## Thioredoxin 1 (C61S/C72S mutant; human, recombinant)

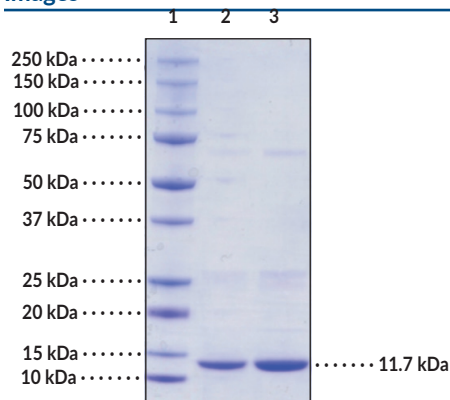
Item No. 11520

### Overview and Properties

<b>Synonyms:</b>	Trx1, TrxA, Txn1
<b>Source:</b>	Active recombinant human thioredoxin 1 (C61S/C72S mutant) expressed in <i>E. coli</i>
<b>Amino Acids:</b>	Full length
<b>Uniprot No.:</b>	P10599
<b>Molecular Weight:</b>	11.7 kDa
<b>Storage:</b>	4°C (as supplied)
<b>Stability:</b>	≥6 months
<b>Purity:</b>	<i>batch specific</i> (≥85% estimated by SDS-PAGE)
<b>Supplied in:</b>	50 mM Tris-HCl, pH 7.5, with 1 mM EDTA
<b>Activity:</b>	<i>batch specific</i> U/ml
<b>Specific Activity:</b>	<i>batch specific</i> U/mg
<b>Unit Definition:</b>	One unit is defined as the amount of enzyme required to produce 1 nmol of eosin per minute at 37°C in 50 mM Tris-HCl, pH 7.5, with 0.2 mg/ml BSA, and 1 mM EDTA containing 8.3 μM eosin-labeled insulin, 250 μM NADPH, and 0.2 U/ml thioredoxin reductase.

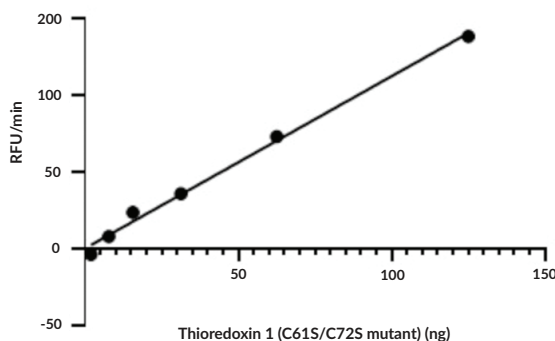
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Images



Lane 1: MW Markers  
Lane 2: Thioredoxin 1 (C61S/C72S mutant) (2 μg)  
Lane 3: Thioredoxin 1 (C61S/C72S mutant) (4 μg)

SDS-PAGE Analysis of Thioredoxin 1 (C61S/C72S mutant).



Thioredoxin 1 (C61S/C72S mutant) activity was determined using Thioredoxin Activity Fluorescent Assay Kit with 0.54 μg/ml eosin-labeled insulin substrate.

WARNING  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM

# PRODUCT INFORMATION



## Description

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Thioredoxin 1 (Trx1) is a thiol-disulfide oxidoreductase and part of the antioxidant thioredoxin system that is involved in the maintenance of cellular thiol redox homeostasis.<sup>1-3</sup> It is ubiquitously expressed, localizes primarily to the cytoplasm with some nuclear localization, and is upregulated in and released from cells under conditions of oxidative stress.<sup>1,2,4</sup> Trx1 contains two active site cysteine residues at positions 32 and 35 with additional cysteines at positions 62, 69, and 73.<sup>2</sup> During the catalytic cycle, the active site cysteines are oxidized to a disulfide upon reduction of oxidized protein disulfide substrates and are subsequently restored to their reduced state by thioredoxin reductase (TrxR) and NADPH.<sup>1,2</sup> In the human recombinant enzyme, the initiating methionine is removed, and thus the positions of the amino acids are counted without the N-terminal methionine.<sup>5</sup> Cysteine-to-serine substitutions at Cys61 (C61S) and Cys72 (C72S) in Trx1 (Trx1<sup>C61S/C72S</sup>) prevent oxidation-induced inhibition of protein disulfide reductase activity in Trx1.<sup>6</sup> Cayman's Thioredoxin 1 (C61S/C72S mutant; human, recombinant) protein can be used for enzyme activity assays.

## References

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CAYMAN CHEMICAL  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM