# Recombinant THIO protein (His tag)

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| **Catalog Number** | 544373 |
| **Synonyms** | Trx; ATL-derived factor; ADF; Surface-associated sulphydryl protein; SASP; allergen Hom s Trx |
| **Species** | Human |
| **Expression System** | E. coli |
| **Accession** | P10599 |
| **Molecular Weight** | Predictes a molecular mass of 13.26 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 14 kDa band. |

## Product Information

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| **Sequence Region** | 2-105 |
| **Form** | Lyophilized powder |
| **Formulation** | Lyophilized from sterile PBS, pH 7.4 |
| **Purity** | >85%, by SDS-PAGE with Coomassie Brilliant Blue staining. |
| **Endotoxin** | Not tested. |
| **Activity** | Not tested. |
| **Stability** | Samples are stable for up to twelve months from date of receipt at -70℃ |
| **Protein Construction** | DNA encoding 2-105 aa (P10599) were fused with 6His tag. |

## Storage & Handling

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| **Reconstitution** | Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution. |
| **Storage** | Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles. |
| **Shipping** | In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature.<br>Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise. |

## Description

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| **Description** | Recombinant Human Thioredoxin (Trx) Fragment (aa 2-105) is a high-purity protein designed for redox biology and cellular signaling research. This fragment fully encompasses the functional thioredoxin domain, making it an ideal tool for studying dithiol-disulfide exchange reactions, S-nitrosylation processes, and AP-1 transcriptional regulation in a controlled experimental setting.<br>Thioredoxin (TXN) is a multifunctional redox protein involved in reversible oxidation-reduction reactions through its active center dithiol/disulfide exchange. It participates in S-nitrosylation of target proteins, such as inhibiting caspase-3 activity in response to nitric oxide, and regulates AP-1 DNA-binding activity following ionizing radiation. Also known as ADF (ATL-derived factor), it enhances interleukin-2 receptor expression. Thioredoxin localizes to the cytoplasm, nucleus, and is secreted via a leaderless pathway, translocating to the nucleus upon radiation or PMA induction, highlighting its dynamic role in cellular stress response and signaling pathways. |