

ATOX1 Protein, Human, Recombinant (His)

General Information

Synonyms:	HAH1;ATX1;antioxidant 1 copper chaperone
Protein Construction:	A DNA sequence encoding the human ATOX1 (NP_004036.1) (Met1-Glu68) was expressed with a polyhistidine tag at the N-terminus. Predicted N terminal: His
Species:	Human
Expression Host:	E. coli
Accession:	O00244
Molecular Weight:	9.6 kDa (predicted); 9 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

ATOX1 is a cytoplasmic copper chaperone that interacts with the copper-binding domain of the membrane copper transporters ATP7A and ATP7B. ATOX1 has also been suggested to have a potential anti-oxidant activity. As the trace element copper is essential, but extremely toxic in high concentrations, intracellular copper concentrations are tightly controlled. Once in the cell, copper is distributed by metallochaperones, including the small cytoplasmic protein ATOX1. ATOX1 plays an important role in the transfer of copper to the copper export P-type

ATPases ATP7A and ATP7B to facilitate copper excretion. There is a novel function for Atox1 as a transcription factor (TF) regulating Ccnd1 was proposed. Antioxidant 1 (ATOX1) functions as an antioxidant against hydrogen peroxide and superoxide, and therefore may play a significant role in many human diseases, including diabetes mellitus (DM). The transduced Tat-ATOX1 protein protects pancreatic beta-cells by inhibiting STZ-induced cellular toxicity in vitro and in vivo. Thus Tat-ATOX1 protein has potential applications as a therapeutic agent for oxidative stress-induced diseases including DM.

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