

HAO1 Protein, Human, Recombinant (His)

General Information

Synonyms:	GOX1;hydroxyacid oxidase (glycolate oxidase) 1;GOX;HAOX1
Protein Construction:	A DNA sequence encoding the native human HAO1 (NP_060015.1) (Leu 2-Ile 370) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	A8K058
Molecular Weight:	42 kDa (predicted); 42 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:	> 97 % 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 20 mM Tris, 500 mM NaCl, 10% glycerol, pH 8.0. 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

Hydroxyacid oxidase 1, also known as Glycolate oxidase, HAO1, and GOX1, is a member of the FMN-dependent alpha-hydroxy acid dehydrogenase family. HAO1 / GOX1 has 2-hydroxyacid oxidase activity. It is most active on the 2-carbon substrate glycolate, but is also active on 2-hydroxy fatty acids, with high activity towards 2-hydroxy palmitate and 2-hydroxy octanoate. HAO1 / GOX1 is a liver-specific peroxisomal enzyme that oxidizes glycolate to glyoxylate with the concomitant production of H₂O₂. In HAO1 messenger RNA (mRNA), an iron-responsive element

(IRE) homologous to the sequence recognized by iron regulatory proteins (IRP), key regulators of iron homeostasis, is present. Mammalian HAO1 / GOX1 is a peroxisomal protein and that the C-terminal sequence SKI acts as the targeting signal. Down-regulation of HAO1 / GOX1 expression during oxidative stress may provide a mechanism to prevent excessive H₂O₂ formation in liver peroxisomes and may represent the prototype of a poorly recognized but potentially relevant response to an oxidative injury involving down-regulation of ROS-producing enzymes.

Reference

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