

# Human ORP150 / HYOU1 / HSP12A Protein (His Tag)

Catalog Number: 11342-H08H



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Biological Solution Specialist

## General Information

### Gene Name Synonym:

GRP-170; Grp170; HSP12A; ORP-150; ORP150

### Protein Construction:

A DNA sequence encoding the C-terminal segment of human HSP12A (NP\_001124463.1) (Met 695-Leu 994) was expressed, fused with a polyhistidine tag at the C-terminus and a signal peptide at the N-terminus.

**Source:** Human

**Expression Host:** HEK293 Cells

## QC Testing

**Purity:** > 97 % as determined by SDS-PAGE

### Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** Met 695

### Molecular Mass:

The recombinant human HSP12A consists of 311 amino acids and predicts a molecular mass of 35.2 kDa. In SDS-PAGE under reducing conditions, the apparent molecular mass of rh HSP12A is approximately 55-65 kDa due to glycosylation.

### Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Storage:

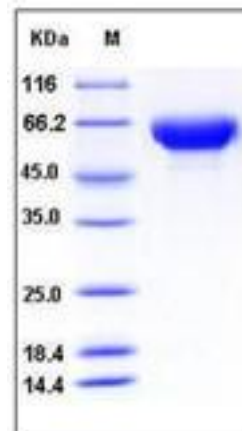
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

Hypoxia up-regulated protein 1, also known as 150 kDa oxygen-regulated protein, 170 kDa glucose-regulated protein, ORP-150, GRP-170 and HYOU1, is a member of the heat shock protein 70 family. Seven members from four different heat shock protein (HSP) families were identified including HYOU1 (ORP150), HSPC1 (HSP86), HSPA5 (Bip), HSPD1 (HSP60), and several isoforms of the two testis-specific HSP70 chaperones HSPA2 and HSPA1L. HYOU1 is highly expressed in tissues that contain well-developed endoplasmic reticulum and synthesize large amounts of secretory proteins. It is highly expressed in liver and pancreas. HYOU1 is also expressed in macrophages within aortic atherosclerotic plaques, and in breast cancers. HYOU1 has a pivotal role in cytoprotective cellular mechanisms triggered by oxygen deprivation. It may play a role as a molecular chaperone and participate in protein folding. Suppression of HYOU1 is associated with accelerated apoptosis. It is suggested to have an important cytoprotective role in hypoxia-induced cellular perturbation. This protein has been shown to be up-regulated in tumors, especially in breast tumors, and thus it is associated with tumor invasiveness.

## References

1. Ikeda J., *et al.*, (1997), Cloning and expression of cDNA encoding the human 150 kDa oxygen-regulated protein, ORP150. *Biochem. Biophys. Res. Commun.* 230:94-99. 2. Kaneda S., *et al.*, (2000), Production of three distinct mRNAs of 150 kDa oxygen-regulated protein (ORP150) by alternative promoters: preferential induction of one species under stress conditions. *J. Biochem.* 128:529-538. 3. Takeuchi S., (2006), Molecular cloning, sequence, function and structural basis of human heart 150 kDa oxygen-regulated protein, an ER chaperone. *Protein J.* 25:517-528.

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