Data Sheet (Cat.No.TMPY-01577)

TargetMol

ORP150 Protein, Human, Recombinant (His)

General Information

Synonyms: hypoxia up-regulated 1;HSP12A;Grp170;ORP-150;ORP150;GRP-170

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. Predicted N terminal: Met 695

Species: Human

Expression Host: HEK293 Cells

Accession: Q9Y4L1

Molecular Weight: 35.2 kDa (predicted); 55-65 kDa (reducing condition, due to glycosylation)

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: < 1.0 EU/μg of the protein as determined by the LAL method.

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

Hypoxia up-regulated protein 1, also known as 15 kDa oxygen-regulated protein, 17 kDa glucose-regulated protein, ORP-15, GRP-17, and HYOU1, is a member of the heat shock protein 7 family. Seven members from four different heat shock protein (HSP) families were identified including HYOU1 (ORP15), HSPC1 (HSP86), HSPA5 (Bip), HSPD1 (HSP6), and several isoforms of the two testis-specific HSP7 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 the 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 is up-regulated in tumors, especially in breast tumors, and thus it is associated with tumor invasiveness.

Reference

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.

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.

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.