Recombinant Human HSP70 / HSPA1A

Catalog Number: **11660-H07B**

Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

DAQB-147D11.1, FLJ54303, FLJ54370, FLJ54392, FLJ54408, FLJ75127, HSP70-1, HSP70-1A, HSP70I, HSP72, HSPA1, HSPA1B

Protein Construction:

A DNA sequence encoding the human HSPA1A (P08107) (Ala 2-Asp 641) was expressed, with a polyhistidine tag at the N-terminus.

Source: Human

Expression Host: *Baculovirus*

QC Testing

Purity: > 85 % as determined by SDS-PAGE.

Bio-activity:

1. Measured by its ability to bind human PARP1 in a functional ELISA.
2. Measured by its ability to bind mouse PARP1 in a functional ELISA.

Endotoxin:

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

Stability:

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

Predicted N terminal: His

Molecular Mass:

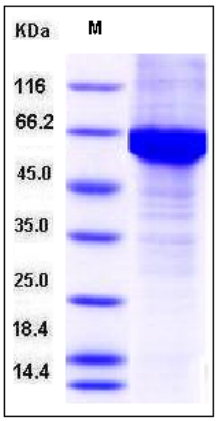
The recombinant human HSPA1A consists of 658 amino acids and predicts a molecular mass of 72.2 kDa. It migrates as an approximately 60 KDa band in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from 0.2μm filtered solution of 20mM Tris, 500mM NaCl, pH7.4, 10% gly

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

SDS-PAGE:



Usage Guide

Storage:

Store it under sterile conditions at -70℃ 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.

Protein Description

The 70 kilodalton heat shock proteins (Hsp70s) belongs to the heat shock proteins family. Upon temperature shock or other stress stimuli, HSP are synthesized intracellularly in all cells, which may protect cells from protein denaturation or from death. Although HSP are synthesized intracellularly, HSP can also be mobilized to the plasma membrane or even be released under stress conditions. Extracellularly, HSP can serve a cytokine function to initiate both innate and adaptive immunity through activation of APC. HSP serves also a chaperone function and facilitates presentation of antigen peptide to T cells. Molecular chaperones of the Hsp70 family have diverse functions in cells. Cell surface HSP70 on DC induced by stress can upregulate membrane- associated IL-15, which in turn promotes the proliferation of CD4 (+) CD45RA memory T cells. They assist the folding of newly synthesized and stress-denatured proteins, as well as the import of proteins into organelles, and the dissociation of aggregated proteins. The well-conserved Hsp70 chaperones are ATP dependent: binding and hydrolysis of ATP regulates their interactions with unfolded polypeptide substrates, and ATPase cycling is necessary for their function. All cellular functions of Hsp70 chaperones use the same mechanism of ATP-driven polypeptide binding and release.

References

1. Heck TG, et al. (2011) Cell Biochem Funct. 29(3):215-26.
2. Chen T, et al. (2010) Eur J Immunol. 40(6):1541-4.
3. Young JC. (2010) Biochem Cell Biol. 88(2):291-300.