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MATERIAL DATA SHEET

Recombinant Human HSP60
Cat. # AP-140

HSP60 (also known as Chaperonin 60) is the eukaryotic homologue of prokaryotic GroEL chaperone. This protein is found mainly in mitochondria, but can also be detected in cytosol and extracellular fluids including peripheral blood. HSP60 and HSP10 (also known as Chaperonin 10) form a complex that plays an essential role in the translocation and refolding of proteins from the cytosol into the mitochondrial matrix. Under physiological conditions, HSP60 creates two stacked heptameric rings that form a pair of central hydrophobic cavities. After an unfolded substrate protein enters one of the cavities it is capped by a heptameric HSP10 complex, thereby trapping the unfolded protein. Structural rearrangement of the substrate-containing cavity is effected via HSP60-mediated ATP hydrolysis; this changes the lining of the cavity from hydrophobic to hydrophilic and helps promote refolding of the substrate protein. Binding of ATP to HSP60 subunits on the distal ring of the complex then causes the dissociation of the HSP10 cap complex and concomitant release of the substrate protein from the proximal cavity. If the protein is not completely folded, it can be further processed by the HSP60/HSP10 complex, or can interact with other chaperoning systems.

Product Information	
Quantity:	50 µg
MW:	61 kDa
Source:	*E. coli*-derived Accession # P10809
Stock:	X mg/ml (X µM) in 50 mM HEPES pH 7.5, 100 mM NaCl, 1 mM TCEP
Purity:	>90%, by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie® Blue stain.

Use & Storage

Use: HSP60/HSPD1 is a molecular chaperone that assists in the folding of nascent polypeptides and the refolding of denatured proteins. Reaction conditions will need to be optimized for each specific application. We recommend an initial HSP60/HSPD1 concentration of 2-3 µM for *in vitro* use. IMPORTANT: HSP10/HSPE1 (Catalog # AP-150) is required for HSP60/HSPD1 activity and should be used at a concentration that is at least equimolar to HSP60/HSPD1.

Storage: **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -70 °C as supplied.
- 3 months, -70 °C under sterile conditions after opening.

Literature

References:

1. Cappello F, *et al.* (2008) Cancer Biol. Therapy **7**: 801-809
2. Hartl F.U. & Hayer-Hartl M. (2009) Nat. Struc. Mol. Biol. **16**: 574-581

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