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**MATERIAL DATA SHEET**

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**Recombinant Human HSP10/EPF****Cat. # AP-150**

HSP10 (also known as Chaperonin 10) is the eukaryotic homologue of the prokaryotic GroES chaperones. This protein is found mainly in mitochondria, but can also be detected in cytosol and extracellular fluids including peripheral blood. Together with HSP60 (also known as Chaperonin 60), HSP10 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**

<b>Quantity:</b>	50 µg
<b>MW:</b>	11 kDa
<b>Source:</b>	<i>E. coli</i> -derived Accession # P61604
<b>Stock:</b>	X mg/ml (X µM) in 50 mM HEPES pH 7.5, 100 mM NaCl, 1 mM TCEP
<b>Purity:</b>	>85%, by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie® Blue stain.

## Use & Storage

**Use:** HSP10/HSPE1 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. **IMPORTANT:** HSP10/HSPE1 works in conjunction with HSP60/HSPD1 (Catalog # AP-140) and both proteins are required for enzymatic activity. For *in vitro* use we recommend an initial HSP60/HSPD1 concentration of 2-3  $\mu$ M, and HSP10/HSPE1 concentration equimolar (or above) 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

***For research use only. Not for use in humans.***