

AR03017PU-L**Human HSP90AA1 / HSP90 alpha - Purified****Alternate names:**

HSP86, HSP90A, HSPC1, HSPCA, Heat shock 86 kDa, Heat shock protein HSP 90-alpha, NY-REN-38

Quantity:

2x0.1 mg

Concentration:

Lot specific

Background:

Hsp90 is a highly conserved and essential stress protein that is expressed in all eukaryotic cells. From a functional perspective, hsp90 participates in the folding, assembly, maturation, and stabilization of specific proteins as an integral component of a chaperone complex (1-4). Despite its label of being a heat-shock protein, hsp90 is one of the most highly expressed proteins in unstressed cells (1-2% of cytosolic protein). It carries out a number of housekeeping functions - including controlling the activity, turnover, and trafficking of a variety of proteins. Most of the hsp90-regulated proteins that have been discovered to date are involved in cell signaling (5-6). The number of proteins now known to interact with Hsp90 is about 100. Target proteins include the kinases v-Src, Wee1, and c-Raf, transcriptional regulators such as p53 and steroid receptors, and the polymerases of the hepatitis B virus and telomerase.5. When bound to ATP, Hsp90 interacts with co-chaperones Cdc37, p23, and an assortment of immunophilin-like proteins, forming a complex that stabilizes and protects target proteins from proteasomal degradation. In most cases, hsp90-interacting proteins have been shown to co-precipitate with hsp90 when carrying out immunoadsorption studies, and to exist in cytosolic heterocomplexes with it. In a number of cases, variations in hsp90 expression or hsp90 mutation has been shown to degrade signaling function via the protein or to impair a specific function of the protein (such as steroid binding, kinase activity) in vivo. Ansamycin antibiotics, such as geldanamycin and radicicol, inhibit hsp90 function (7).

Uniprot ID:[P07900](#)**NCBI:**[9606](#)**Species:**

Human

Source:

E. coli

Format:**State:** Liquid protein**Purity:** >90% pure as determined by SDS-PAGE analysis (Purified by Multi-step Chromatography).**Buffer System:** 50mM Tris pH 7.5, 5mM Bme, 0.3M NaCl, 10% Glycerol.**Applications:**

Western Blot Control, SDS-PAGE , ATPase Activity Assay, Surface Plasmon Resonance (SPR).

Specificity: ~90 kDa

Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Description:

Recombinant Hsp90 alpha cloned from a Human cDNA library

Add. Information:

Centrifuge vial before opening.

- Storage:** Store at 2-8°C for one week or (in aliquots) at -20°C for longer.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.
- Product Citations:** **Originator or purchased from resellers:**
1. Wang, J., Grishin, A.V. and Ford, H.R. Experimental Anti-Inflammatory Drug Semapimod Inhibits TLR Signaling by Targeting the TLR Chaperone gp96. *J Immunol.* 2016, 196(12):5130-7. PubMed PMID: 27194788.
 2. Bartolini, M., Wainer, I.W., Bertucci, C. and Andrisano, V. The rapid and direct determination of ATPase activity by ion exchange chromatography and the application to the activity of heat shock protein-90. *J Pharm Biomed Anal.* (2012) 73, 77-81. PubMed PMID: 22497853.
 3. Rateb, M.E. et al. (2011) *J Nat Prod.* 2011. 74 (6): 1491-1499. Chaxamycins A–D, Bioactive Ansamycins from a Hyper-arid Desert *Streptomyces* sp. PubMed PMID: 21553813.
 4. Goode, K.M. et al. (2017) Targeting the Hsp90 C-terminal domain to induce allosteric inhibition and selective client downregulation. *Biochim Biophys Acta.* [Epub ahead of print] PubMed PMID: 28495207.
 5. Saito, Y. et al. (2016) Oxidation and interaction of DJ-1 with 20S proteasome in the erythrocytes of early stage Parkinson's disease patients. *Sci Rep.* 6:30793. PubMed PMID: 27470541.
 6. Bober, J. et al. (2016) *IUBMB Life.* 68(3):242-51. Identification of new FGF1 binding partners-Implications for its intracellular function. PubMed PMID: 26840910.
 7. Gilbert, K.M., Rowley, B., Gomez-Acevedo, H. and Blossom, S.J. Coexposure to Mercury Increases Immunotoxicity of Trichloroethylene 2011. *Toxicol Sci.* 119 (2): 281-292. PubMed PMID: 21084432.
- General Readings:**
1. Arlander SJH, et al. (2003) *J Biol Chem* 278: 52572-52577.
 2. Pearl H, et al. (2001) *Adv Protein Chem* 59:157-186.
 3. Neckers L, et al. (2002) *Trends Mol Med* 8:S55-S61.
 4. Pratt W, Toft D. (2003) *Exp Biol Med* 228:111-133.
 5. Pratt W, Toft D. (1997) *Endocr Rev* 18: 306–360.
 6. Pratt WB. (1998) *Proc Soc Exptl Biol Med* 217: 420–434.
 7. Whitesell L, et al. (1994) *Proc Natl Acad Sci USA* 91: 8324–8328.

Pictures:

SDS-Page of human HSP90 Alpha protein (SPR-101). Lane 1: Molecular Weight Ladder (MW). Lane 2: Human HSP90 alpha protein (AR03017PU).

