

Monoclonal Antibody to Heat Shock Protein 90 (HSP90) alpha/beta - Purified

Alternate names: HSP-84, HSP-84, HSP-86, HSP-86, HSP-90, HSP84, HSP84, HSP86, HSP86, HSP90A, HSP90AA1, HSP90AB1, HSP90B, HSPC1, HSPC2, HSPCA, HSPCB, Heat shock protein HSP 90-alpha, Heat shock protein HSP 90-beta, Renal carcinoma antigen NY-REN-38

Catalog No.: AM03150PU-S

Quantity: 25 µg

Concentration: 1.0 mg/ml

Background: HSP90 is an abundantly and ubiquitously expressed heat shock protein. It is understood to exist in two principal forms α and β , which share 85% sequence amino acid homology. The two isoforms of Hsp90 are expressed in the cytosolic compartment (1). Despite the similarities, HSP90 α exists predominantly as a homodimer while HSP90 β exists mainly as a monomer.(2) From a functional perspective, hsp90 participates in the folding, assembly, maturation, and stabilization of specific proteins as an integral component of a chaperone complex. (3-6) Furthermore, Hsp90 is highly conserved between species; having 60% and 78% amino acid similarity between mammalian and the corresponding yeast and Drosophila proteins, respectively.

Hsp90 is a highly conserved and essential stress protein that is expressed in all eukaryotic cells. 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 (7-8). 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 (9).

Uniprot ID: [P07900](#)

NCBI: [NP_005339](#)

GeneID: [3320](#)

Host / Isotype: Mouse / IgG2a

Recommended Isotype Controls:	AM03096PU-N
Clone:	Hyb-K41220A
Immunogen:	Recombinant Human HSP90 alpha
Format:	State: Liquid purified Ig fraction Purification: Affinity Chromatography on Protein G Buffer System: PBS, pH 7.2 Preservatives: 0.09% Sodium Azide Stabilizers: 50% Glycerol
Applications:	ELISA (See Ref.1). Western blot: 1 µg/ml was sufficient for detection of Hsp90alpha/beta by Western Blot in 20 µg of HeLa lysate (See Ref.1,10). Immunohistochemistry on Frozen Sections. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.
Specificity:	This antibody detects 90kD proteins corresponding to the Molecular Mass of HSP90 alpha or beta. Species: Human (beta-specific), Rat (Liver), <i>S. cerevisiae</i> , <i>S. pombe</i> . Limited or no cross-reactivity to rice or <i>P. caudatum</i> (Ref.10). Other species not tested.
Storage:	Store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer. Avoid repeated freezing and thawing. Shelf life: one year from despatch.
General Readings:	1. Nemoto, T. et al. (1997) <i>J. Biol Chem.</i> 272, 26179-26187. 2. Minami, Y, et al. (1991), <i>J. Biol Chem.</i> 266, 10099-10103. 3. Arlander SJH, et al. (2003) <i>J Biol Chem</i> 278, 52572-52577. 4. Pearl H, et al. (2001) <i>Adv Protein Chem</i> 59,157-186. 5. Neckers L, et al. (2002) <i>Trends Mol Med</i> 8:S55-S61. 6. Pratt W, Toft D. (2003) <i>Exp Biol Med</i> 228:111-133. 7. Pratt W, Toft D. (1997) <i>Endocr Rev</i> 18,306-360. 8. Pratt WB. (1998) <i>Proc Soc Exptl Biol Med</i> 217, 420-434. 9. Whitesell L, et al. (1994) <i>Proc Natl Acad Sci USA</i> 91, 8324-8328. 10. Kishimoto J, et al. (2005). <i>Cell Stress and Chaperones.</i> 10 (4), 296-311.
Pictures:	Western blot analysis of Hsp90 in cell lysates from 12 rat tissue lines at a 1:1000 dilution of TA309402. 