

Product Information



Hsp90 α/β Monoclonal Antibody (Clone K41220A)

Catalog No. 10011439

Contents:	This vial contains protein G affinity-purified mouse IgG at a concentration of 1 mg/ml in PBS, pH 7.2, containing 0.09% sodium azide and 50% glycerol.
Synonym:	Heat Shock Protein 90 α/β
Antigen:	Recombinant human Hsp90 α
Host:	Mouse, clone K41220A
Cross Reactivity:	(+) human (β -specific), rat, <i>S. cerevisiae</i> , <i>S. pombe</i> Hsp90 α/β ; (-) rice and <i>P. caudatum</i> Hsp90 α/β . Detects 90 kDa proteins corresponding to the molecular mass of Hsp90 α/β .
Stability:	≥ 1 year at -20°C
Applications:	Western blot (WB) and EIA ^{1,2} The recommended starting concentration for western blot is 1 $\mu\text{g/ml}$, which was shown to be sufficient for detection of Hsp90 α/β by WB in 20 μg of HeLa lysate. Other applications were not attempted and therefore optimal working dilutions should be determined empirically.

Hsp90 is an abundantly and ubiquitously expressed Hsp. It is understood to exist in two principal forms, α and β , which share 85% amino acid sequence 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.³ From a functional perspective, Hsp90 participates in the folding, assembly, maturation, and stabilization of specific proteins as an integral component of a chaperone complex.⁴⁻⁷ 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 HSP, Hsp90 is one of the most highly expressed proteins in unstressed cells (1-2% 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.^{8,9} 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.⁶ 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.¹⁰

References

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Product Information



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