

# PRODUCT INFORMATION



## Hsp90 $\beta$ Monoclonal Antibody (Clone H9010)

Item No. 10011426

### Overview and Properties

<b>Contents:</b>	This vial contains protein G purified IgG <sub>2a</sub> at a concentration of 1 mg/ml.
<b>Synonym:</b>	Heat Shock Protein 90 $\beta$
<b>Immunogen:</b>	Human recombinant Hsp90 $\beta$
<b>Species Reactivity:</b>	(+) Human, chicken, dog, fish, Gummy Shark ( <i>M. antarcticus</i> ), mouse, rabbit, rat, school shark ( <i>G. galeus</i> ), shark, white sucker fish ( <i>C. commersonii</i> ) Hsp90 $\beta$ . Detects 90 kDa Hsp90 $\beta$ in all reactive species except in chicken, where it detects $\alpha/\beta$ isoforms.
<b>Uniprot No.:</b>	P08238
<b>Form:</b>	Liquid
<b>Storage:</b>	-20°C (as supplied)
<b>Stability:</b>	As supplied, 1 year from the QC date provided on the Certificate of Analysis, when stored properly
<b>Storage Buffer:</b>	PBS, pH 7.2, containing 50% glycerol and 0.09% sodium azide
<b>Clone:</b>	H9010
<b>Host:</b>	Mouse
<b>Isotype:</b>	IgG <sub>2a</sub>
<b>Applications:</b>	ELISA, Immunocytochemistry (ICC)/Immunofluorescence (IF), Immunohistochemistry (IHC), Immunoprecipitation (IP), and Western blot (WB). The recommended starting concentration for IHC is 1:100 and 1:2,500 for WB. Other applications were not attempted and therefore optimal working dilutions should be determined empirically.

### Description

Hsp90 is an abundantly and ubiquitously expressed heat shock protein. It is understood to exist in two principal forms  $\alpha$  and  $\beta$ , which share 85% sequence amino acid homology. The two isoforms of Hsp90, are expressed in the cytosolic compartment.<sup>1</sup> Despite the similarities, Hsp90 $\alpha$  exists predominantly as a homodimer, while Hsp90 $\beta$  exists mainly as a monomer.<sup>2</sup> From a functional perspective, Hsp90 participates in the folding, assembly, maturation, and stabilization of specific proteins as an integral component of a chaperone complex.<sup>3-6</sup> Furthermore, Hsp90 is highly conserved between species; having 60% and 78% amino acids 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 signalling.<sup>7,8</sup> 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.<sup>5</sup> 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 immunoabsorption 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 signalling 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.<sup>7</sup>

WARNING  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 08/03/2016

CAYMAN CHEMICAL  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM

# PRODUCT INFORMATION



## References

---

1. Nemoto, T., Sato, N., Iwanari, H., *et al.* Domain structures and immunogenic regions of the 90-kDa heat shock protein (Hsp90). Probing with a library of anti-Hsp90 monoclonal antibodies and limited proteolysis. *J. Biol. Chem.* **272**(42), 26179-26187 (1997).
2. Minami, Y., Kawasaki, H., Miyata, Y., *et al.* Analysis of native forms and isoforms compositions of the mouse 90-kDa heat shock protein, Hsp90. *J. Biol. Chem.* **266**(16), 10099-10103 (1991).
3. Arlander, S.J.H., Eapen, A.K., Vroman, B.T., *et al.* Hsp90 inhibition depletes Chk1 and sensitizes tumor cells to replication stress. *J. Biol. Chem.* **278**(52), 52572-52577 (2003).
4. Pearl, L.H. and Prodromou, C. Structure, function, and mechanism of the Hsp90 molecular chaperone. *Advances in Protein Chemistry* **59**, 157-172 (2001).
5. Neckers, L. Hsp90 inhibitors as novel cancer chemotherapeutic agents. *Trends in Molecular Medicine* **8**(4 Suppl.), S55-S61 (2002).
6. Pratt, W.B. and Toft, D.O. Regulation of signaling protein function and trafficking by the Hsp90/Hsp70-based chaperone machinery. *Exp. Biol. Med.* **228**, 111-133 (2003).
7. Pratt, W.B. and Toft, D.O. Steroid receptor interactions with heat shock protein and immunophilin chaperones. *Endocr. Rev.* **18**(3), 306-360 (1997).
8. Pratt, W.B. The Hsp90-based chaperone system: Involvement in signal transduction from a variety of hormone and growth factor receptors. *Proc. Soc. Exp. Biol. Med.* **217**, 420-434 (1998).

CAYMAN CHEMICAL  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM