

## Hsp90 $\beta$ Monoclonal Antibody (K3701)

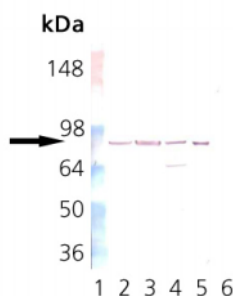
Product Specifications	
<b>Catalog Number:</b>	SPA-843
<b>Host:</b>	Mouse
<b>Isotype:</b>	IgM
<b>Species Reactivity:</b>	Human, mouse, rat, hamster, guinea pig, bovine, canine, sheep, pig, and rabbit Other species not tested.
<b>Applications:</b> <i>The optimal dilution for a specific application must be determined by the investigator</i>	<b>WB:</b> 1:1000 (Colorimetric) <b>Flow:</b> 10 $\mu$ g/mL Other applications not tested.
<b>Predicted m.w:</b>	~90 kDa
<b>Concentration:</b>	See product label
<b>Purification:</b>	Ammonium sulfate precipitate
<b>Format:</b>	Saline, pH 6.9, 0.1% sodium azide
<b>Storage:</b> <i>Shipping conditions may differ from the recommended storage temperature</i>	Store at -20°C
<b>Immunogen:</b>	Recombinant human Hsp90 $\beta$ protein <sup>6</sup>
<b>Related Products:</b>	
SPP-770	Hsp90 Native Protein
LYC-HL100	HeLa Cell Lysate
SPA-842	Hsp90 $\beta$ Monoclonal Antibody (K3705)
SPA-835	Hsp90 Monoclonal Antibody (16F1)
SPA-830	Hsp90 Monoclonal Antibody (AC88)

### Background:

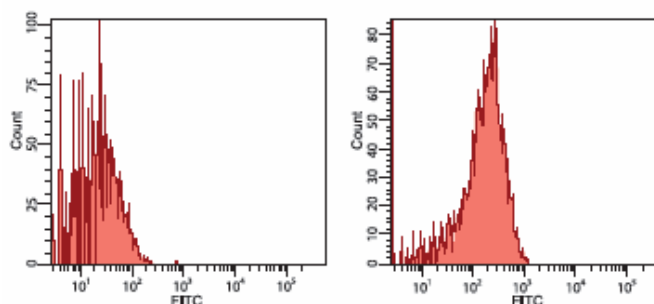
The 90 kDa molecular chaperone family includes 90 kDa heat shock protein Hsp90 and 94 kDa glucose-regulated protein grp94, both major molecular chaperones of the cytosol and the endoplasmic reticulum<sup>1</sup>. Mammalian cells express inducible Hsp90 $\alpha$  and constitutive Hsp90 $\beta$  isoforms that are encoded by separate genes. The amino acid sequences of human and yeast Hsp90 $\alpha$  are 85% and 90% homologous to those of Hsp90 $\beta$ , respectively. All known members of the Hsp90 protein family are highly conserved, especially in the N-terminal and C-terminal regions containing independent chaperone sites with different substrate specificity<sup>2,3</sup>. These ubiquitous and highly conserved proteins account for 1-2% of all cellular proteins in most cells. Hsp90 functions as part of the cell's powerful network of chaperones to fight the deleterious consequences of protein unfolding caused by non-physiological conditions. In the absence of stress, however, Hsp90 provides a necessary component of such fundamental cellular processes as hormone signaling and cell cycle control by serving as a chaperone for many key signaling molecules including steroid receptors, cell cycle kinases involved in signal transduction, and p53<sup>4</sup>. As many of these client proteins are known oncogenes, Hsp90 inhibitors such as 17-AAG, a geldanamycin analog, have been of benefit in the treatment of many cancers<sup>5</sup>.

#### References

- Scheibel, T. and Buchner, J. (1997) *Guidebook to Chaperones*, Ed. Gething, M.J., Oxford Univ. Press, Oxford, 147-150.
- Scheibel, T., et al. (1999) PNAS USA **96**, 1297-1302.
- Scheibel, T. et al. (1998) J Biochem Pharmacol. **56**, 675-682.
- Rutherford, S. L., et al. (1998) Nature **396**, 336-342.
- Workman, P., et al. (2007) Ann NY Acad Sci. **1113**, 202-216.
- Nemoto, T., et al. (1998) Biochem J. **330**, 989-995.



**Western blot analysis:** Lane 1: MWM, Lane 2: HeLa, Lane 3: PC-12, Lane 4: CHO-K1, Lane 5: SPP-770 Hsp90 Native Protein, Lane 6: SPP-776 Hsp90 alpha Recombinant Protein (negative control), probed with Hsp90  $\beta$  Monoclonal Antibody (K3701)



Human colon cancer Caco-2 cells analyzed by flow cytometry using isotype control antibody (left) or Hsp90  $\beta$  Monoclonal Antibody (K3701) (right).

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Last Revised: 8/1/2008