

## HSP 90 $\alpha$ / $\beta$ (610-723): sc-4994 WB

### BACKGROUND

The heat shock response was first described for *Drosophila* salivary gland cells and morphologically consists of a change in their polytene chromosome puffing patterns that involves *de novo* synthesis of a few proteins. Similar heat shock proteins were later discovered in bacterial chicken and mammalian cells, and have been subsequently studied in other organisms. A series of proteins including HSP 90, HSP 70, HSP 20-30 and ubiquitin are induced by insults such as temperature shock, chemicals and other environmental stress. A major function of HSP 90 and other HSPs is to act as molecular chaperones. HSP 90 forms a complex with glucocorticoid receptor (GR), rendering the non ligand-bound receptor transcriptionally inactive. HSP 90 binds the GR as a heterocomplex composed of either HSP 56 or cyclophilin-40, forming an apo-receptor complex. HSP 90 also exists as a dimer with other proteins such as p60/sti1 and p23, forming an apo-receptor complex with estrogen and androgen receptors.

### REFERENCES

1. Wu, J.M., et al. 2003. PKC  $\epsilon$  is a unique regulator for HSP 90 $\beta$  gene in heat shock response. *J. Biol. Chem.* 278: 51143-51149.
2. Whitesell, L., et al. 2005. HSP 90 and the chaperoning of cancer. *Nat. Rev. Cancer* 5: 761-772.
3. Cowen, L.E., et al. 2005. HSP 90 potentiates the rapid evolution of new traits: drug resistance in diverse fungi. *Science* 309: 2185-2189.
4. Aoyagi, S., et al. 2005. Modulating molecular chaperone HSP 90 functions through reversible acetylation. *Trends Cell Biol.* 15: 565-567.
5. Chen, B., et al. 2005. The HSP 90 family of genes in the human genome: insights into their divergence and evolution. *Genomics* 86: 627-637.
6. Zhao, R., et al. 2005. HSP 90: a chaperone for protein folding and gene regulation. *Biochem. Cell Biol.* 83: 703-710.
7. Wegele, H., et al. 2005. Substrate transfer from the chaperone HSP 70 to HSP 90. *J. Mol. Biol.* 356: 802-811..

### STORAGE

Store at -20° C; stable for one year from the date of shipment.

### CHROMOSOMAL LOCATION

Genetic locus: HSP90AA1 (human) mapping to 14q32.33 and HSP90AB1 (human) mapping to 6p12.

### SOURCE

HSP 90 $\alpha$ / $\beta$  (610-723) is expressed in *E. coli* as a 40 kDa tagged fusion protein corresponding to amino acids 610-723 of HSP 90 $\beta$  of human origin.

### PRODUCT

HSP 90 $\alpha$ / $\beta$  (610-723) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10  $\mu$ g in 0.1 ml SDS-PAGE loading buffer.

### APPLICATIONS

HSP 90 $\alpha$ / $\beta$  (610-723) is suitable as a Western blotting control for sc-1057, sc-7947, sc-8262, sc-13119 and sc-69703.

### RESEARCH USE

For research use only, not for use in diagnostic procedures.

### PROTOCOLS

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