SANTA CRUZ BIOTECHNOLOGY, INC.

HSP 90 (at-115): sc-33755

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 D, forming an aporeceptor comiplex. HSP 90 also exists as a dimer with other proteins such as p60/sti1 and p23, forming an aporeceptor complex with estrogen and androgen receptors.

REFERENCES

1. Wu, J.M., et al. 2003. PKC ε is a unique regulator for HSP 90β 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.

SOURCE

HSP 90 (at-115) is a rabbit polyclonal antibody raised against amino acids 585-699 mapping at the C-terminus of HSP 90 of *Arabidopsis thaliana* origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

APPLICATIONS

HSP 90 (at-115) is recommended for detection of HSP 90 of *Arabidoposis thaliana*, *Lycopersicon esculentum*, *Nicotiana tabacum* and *Zea mays* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of HSP 90: 90 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Chatterjee, M., et al. 2007. Stat3 and MAPK signaling maintain overexpression of heat shock proteins 90α and β in multiple myeloma cells, which critically contribute to tumor-cell survival. Blood 109: 720-728.
2. Inkson, C.A., et al. 2008. TGFβ1 and WISP-1/CCN-4 can regulate each other's activity to cooperatively control osteoblast function. J. Cell. Biochem. 104: 1865-1878.
3. Smith, M.R., et al. 2009. Cyclophilin 40 is required for microRNA activity in *Arabidopsis*. Proc. Natl. Acad. Sci. USA 106: 5424-5429.
4. Luján, R., et al. 2009. Small heat-shock proteins and leaf cooling capacity account for the unusual heat tolerance of the central spike leaves in Agave tequilana var. Weber. Plant Cell Environ. 32: 1791-1803.
5. López-Frías, G., et al. 2011. Role of HSP101 in the stimulation of nodal root development from the coleoptilar node by light and temperature in maize *(Zea mays L.)* seedlings. J. Exp. Bot. 62: 4661-4673.
6. Bugge, A., et al. 2012. Rev-erbα and Rev-erbβ coordinately protect the circadian clock and normal metabolic function. Genes Dev. 26: 657-667.

RESEARCH USE

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