

# P23 Protein (Active)

## Catalog# SPR-303A/B/C

Size: 50/100/200µg

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This product is for *in vitro* research use only and is not intended for use in humans or animals

# StressMarq

## Biosciences Inc.

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|                       |   |
|-----------------------|---|
| Product               | Recombinant Human p23 Protein                               |
| Source                | Human cDNA expressed in <i>E. coli</i> ; Swiss Prot: Q15185 |
| Cited Applications    | WB, functional/activity studies                             |
| Purity                | >90%  |
| Format                | 20mM HEPES buffer p7.2, 80mM NaCl in 10% glycerol           |
| Concentration         | 1mg/mL  |
| Storage and stability | -20°C; 1 year+; shipped on cold packs or ambient            |

### Scientific Background

p23 is a highly conserved ubiquitous protein, known to have an important function as a cochaperone for the hsp90 chaperoning system (1). Studies have revealed that p23 is a small protein (18 to 25 kDa) with a simple structure (2, 3). p23 does not have any structural homology with any other known proteins (1). p23 was first discovered as a part of the Hsp90-progesterone receptor complex along with hsp70, p54 and p50 (1). p23 is a phosphor-protein, which is highly acidic and has an aspartic acid-rich c-terminal domain (1). Numerous studies have found p23 to be associated with other client proteins like Fes tyrosine kinase (4), the heme regulated kinase HRI (5), hsf1 transcription factor (4), aryl hydrocarbon receptor (4), telomerase (6), and Hepadnavirus reverse transcriptase (7). In spite of several years of study, the exact functional significance of p23 is still not clear (8). p23 is thought to be involved in the adenosine triphosphate-mediated hsp90 binding of client proteins (8). Since many hsp90 client proteins are involved in oncogenic survival signaling, a recent study has concluded p23 to be a promising target in leukemic apoptosis (9). Hsp90 and its co-chaperone p23 are certainly among the emerging anti-tumor targets in oncology.

### Selected References

1. Johnson J.L., Beito T. G., Krco C.J. & Toft D.O. (1994) *Mol Cell Biol* 14: 1956-63.
2. Weikl T., Abelmann K. & Buchner J. (1999) *J Mol Biol* 293: 685-91.
3. Weaver A.J., Sullivan W.P., Felts S.J., Owen B.A. & Toft, D.O. (2000) *J Biol Chem* 275: 23045-52.
4. Nair S.C., *et al.* (1996) *Cell Stress Chaperones* 1: 237-50.
5. Xu Z., *et al.* (1997) *Eur J Biochem* 246, 461-70.
6. Holt S.E., *et al.* (1999) *Genes Dev* 13: 817-26.
7. Hu J., Toft D., Anselmo D. & Wang X. (2002) *J Virol* 76: 269-79.
8. Felts, S.J. & Toft D.O. (2003) *Cell Stress Chaperones* 8: 108-13.
9. Gausdal G., Gjertsen B.T., Fladmark K.E., Demol H., Vandekerckhove J. & Doskeland S.O. (2004) *Leukemia*.

### Certificate of Analysis

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This product has been certified >90% pure using SDS PAGE analysis.

4µM SPR-303, when added to 2µM SPR-300-activated (Aha1) Hsp90 (2µM; His-tagged Hsp90 beta) in 33mM Hepes pH7.2, 30mM NaCl, 5mM MgCl<sub>2</sub>, 1mM DTT, 1.5mM ATP in a 100ul reaction at 37 degrees C, eliminated 30% of the Aha1-mediated ATPase stimulation as well as intrinsic Hsp90 ATPase activity.

(This is an enzyme-linked ATP regeneration assay tracking loss of NADH absorbance at 340nm.)

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# Material Safety Data Sheet

## P23 (Human) Protein SPR-303

This product is for *in vitro* research use only and is not intended for use in humans or animals

The below information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. StressMarq shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalogue for additional terms and conditions of sale.

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### Hazardous Ingredients

The physical, chemical and toxicological properties of these components have not been fully investigated. It is recommended that all laboratory personnel follow standard laboratory safety procedures when handling this product. Safety procedures should include wearing OSHA approved safety glasses, gloves and protective clothing. Direct physical contact with this product should be avoided.

| <u>Known Hazardous Components</u> | <u>CAS Number</u> | <u>Percent</u> |
|-----------------------------------|-------------------|----------------|
| None                              |                   |                |

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### Physical Data

This product consists of purified protein in Hepes buffer and 10% glycerol shipped on gel packs. The physical properties of this product have not been investigated thoroughly.

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### Fire and Explosion Hazard and Reactivity Data

NOT APPLICABLE

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### Toxicological Properties

May be harmful by inhalation, ingestion, or skin absorption. The toxicological properties of this product have not been investigated thoroughly. Exercise due caution.

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### Preventative Measures

Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, contact with eyes, skin or clothing.

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### Spill and Leak Procedures

Observe all federal, state and local environmental regulations.

- Wear protective equipment.
- Absorb on sand or vermiculite and place in closed containers for disposal.
- Dispose or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

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### First Aid Measures

- If swallowed, wash out mouth with water, provided person is conscious. Call a physician.
- In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. If a rash or other irritation develops, call a physician.
- If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
- In case of eye contact, flush with copious amounts of water for at least 15 minutes while separating the eyelids with fingers. Call a physician.

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