

# Anti-Grp94

Catalog# SMC-105A/B

Size: 50/200µg

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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	Rat anti-Grp94 antibody monoclonal
Clone	9G10
Immunogen	Purified Grp94 isolated from chicken oviducts
Host and Subclass	Rat IgG <sub>2a</sub>
Cited Applications	WB (8, 9, 10), IP (11-14), Flow cytometry
Specificity	Detects a 98kDa protein corresponding to the molecular mass of Grp94 on SDS PAGE immunoblots. Does not detect human Hsp90, Grp74 or GrpE from <i>E. coli</i> .
Species cross-reactivity	Human, mouse, rat, bovine, canine, chicken, guinea pig, hamster, horse, monkey, pig, rabbit, sheep, <i>Xenopus</i>
Format	PBS pH 7.2; 50% glycerol, 0.09% azide. Protein G affinity purified.
Concentration and working dilution	1.0mg/mL; 0.5µg/ml was sufficient for detection of Grp94 in 20µg of HeLa lysate.
Storage and stability	-20°C; 1 year+; shipped on cold packs or ambient

### Scientific Background

Grp94 (glucose regulated protein 94, gp96) is a constitutively expressed endoplasmic reticulum (ER) luminal protein that is up-regulated in response to cellular stress such as heat shock, oxidative stress or glucose depletion. Grp94 is thought to play a role in protein translocation to the ER, in their subsequent folding and assembly, and in regulating protein secretion (1). Grp94 also plays a role in antigen presentation by accessing the endogenous pathway and eliciting specific CTL responses to chaperone bound peptides via MHC class I pathway (2)

Grp94 is a member of the Hsp90 family of stress proteins and shares sequence homology with its cytosolic equivalent, Hsp90 (3). Both Hsp90 and Grp94 are calcium binding proteins (4). Despite sharing 50% sequence

homology over its N domains and complete conservation in its ligand binding domains with Hsp90, Grp94 and Hsp90 differ in their interactions with regulatory ligands as Grp94 has weak ATP binding and hydrolysis activity (5).

Grp94 exists as a homodimer and the two subunits interact at two distinct intermolecular sites, C terminal dimerization domains and the N-terminal interacts with the middle domain of opposing subunits. (6). Grp94 contains a carboxy terminal KDEL (Lys-Asp-Glu-Leu) sequence which is believed to aid in its retention in the ER (7).

### Selected References

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3. Mazzarella R.A., and Green M. (1987) *J Biol Chem* 262: 8875-8883.
4. Kang, H.S. and Welch W.J. (1991) *J Biol Chem* 266(9): 5643-5649.
5. Soldano K.L., et al. (2003) *J Biol Chem* 278(48): 48330-48338.
6. Chu F., et al. (2006) *Protein Sci* 15(6): 1260-1269.
7. Peter F., et al., (1992) *J Biol Chem* 267: 10631-10637.
8. Allen S. et al. (2000) *Blood* 96(2): 560-568.
9. Sato K et al. (2001) *Blood* 98(6): 1852-1857.
10. Yun S.-W. et al (2000) *Brain Research Bulletin*.52(5): 371-378.
11. Choukhi A., et al. (1998) *J. Virol.* 72: 3851-3858.
12. Hoshino T., et al. (1998) *Blood* 91(11): 4379-4386.
13. Riera M. et al. (1999) *Mol. Cell Biochem*. 191: 97-104.
14. Gusarova V., et al. (2001) *J. Biol. Chem.* 276(27): 24891-24900.

### Certificate of Analysis

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0.5 µg/mL of SMC-105 was sufficient for detection of Grp94 in 20µg of heat shocked HeLa cell lysate by colorimetric immunoblot analysis using Goat anti-rat IgG:HRP as the secondary antibody.

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# Material Safety Data Sheet

## Anti-GRP94 (Monoclonal Antibody) SMC-105

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>
Sodium Azide	26628-22-8	0.09

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### Physical Data

This product consists of immunoglobulin in PBS containing 0.09% azide in 50% 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.

Authorized: StressMarq Biosciences Inc.  
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