

# Anti-Alpha A Crystallin

Catalog# SMC-142 A/B  
Size: 50/200µg

PO Box 30244, Suite 405,  
3989 Quadra Street,  
Victoria, BC V8X 5E1, Canada

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

## StressMarq Biosciences Inc.

Orders ● [sales@stressmarq.com](mailto:sales@stressmarq.com)  
Tel: ● +1 250 294 9065  
Fax: ● +1 250 294 9025  
Email ● [info@stressmarq.com](mailto:info@stressmarq.com)  
Web ● [www.stressmarq.com](http://www.stressmarq.com)

Product	Mouse anti-alpha crystallin antibody; monoclonal
Clone	1H3.B8
Immunogen	Native alpha crystallin
Host and Subclass	Mouse, IgG <sub>1</sub>
Applications	WB, ELISA
Specificity	Detects alpha crystallin at ~20kDa
Species cross-reactivity	Human, Mouse, Cow, Rat. Other species not tested. Detects alpha crystallin complex (containing alpha A and alpha B subunits). Does not cross react with alpha B crystallin, beta-L crystallin, Beta-H crystallin, gamma crystallin, Hsp25, Hsp27 or Hsp47 proteins.
Format	PBS pH 7.2; 50% glycerol, 0.09% azide. Protein G affinity purified.
Concentration and Working Dilution	1.0mg/mL; WB 1/2000
Storage and stability	-20°C; 1 year+; shipped on cold packs or ambient

### Scientific Background

The alpha-crystallins are major water-soluble lens structural proteins of the vertebrate eye that are related to the small heat shock protein family. The alpha-crystallins possess structural and functional similarities with Hsp25 and Hsp27 (1). Mammalian lens crystallins are divided into alpha, beta and gamma families. Alpha and beta families are further divided into acidic and basic groups (Alpha-A and Alpha-B respectively). In the lens, alpha-crystallin primarily functions to maintain proper refractive index, however it can also function as a molecular chaperone that binds to the denatured

proteins, keeping them in solution and thereby maintaining the translucency of the lens. When cellular stress occurs, alpha-crystallin enters its phosphorylated state and may serve a structural control function and play a role in protein maintenance (2). In addition to their interaction with proteins, alpha-crystallins also interact with native molecules such as membrane proteins, Golgi matrix protein, structural proteins, nuclear proteins and DNA (3, 4, 5, 6, and 7). Two other functions are an autokinase activity and participation in the intracellular architecture, and it has also been proven that both alpha-A and B prevent apoptosis by inhibiting caspases (8).

### Selected References

1. Merck K.B. *et al.* (1993) *J Biol Chem.* 268: 1046-1052.
2. Horwitz J. (1992) *Proc Natl Acad Sci USA* 89(21): 10449-10453.
3. Cobb B.A. and Petrash J.M. (2002) *Biochemistry.* 41: 483-490
4. Horwitz J. (2003) *Exp Eye Res.* 76: 145-153.
5. Bullard B. *et al.* (2004) *J Biol Chem.* 279: 7917-7924.
6. Gangalum R.K., Schibler M.J. and Bhat S.P. (2004) *J Biol Chem.* 279: 43374.43377.
7. Maddala R. and Rao V.P. (2005) *Exp Cell Res.* 306: 203-215.
8. Yaung J., *et al.* (2007) *Molecular Vision* 13: 566-577.

### Certificate of Analysis

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0.5 µg/mL of SMC-142 was sufficient for detection of 100ng purified alpha A crystalline by colorimetric immunoblot analysis using Goat anti-mouse IgG:HRP as the secondary antibody.

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# Material Safety Data Sheet

## Anti-alpha A Crystallin (Monoclonal Antibody) SMC-142

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 whole rabbit serum 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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