

αA/αB-Crystallin Polyclonal Antibody

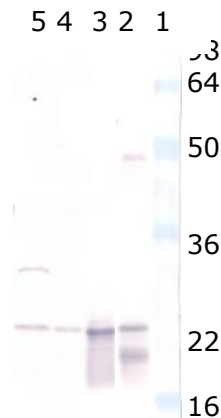
| Product Specifications | |
|----------------------------|---|
| Catalog Number: | SPA-224 |
| Source: | Rabbit |
| Species Reactivity: | Human, mouse, bovine |
| Applications: | WB: 1:1000 (Colorimetric) Other applications not tested. <i>The optimal dilution for a specific application must be determined by the investigator</i> |
| Predicted M.W.: | ~ 20 kDa |
| Concentration: | See product label |
| Purification: | Protein A Affinity |
| Format: | PBS, pH 7.2, 0.09% azide, 50% glycerol |
| Storage: | Store at -20°C <i>Shipping conditions may differ from the recommended storage temperature</i> |
| Immunogen: | Synthetic peptide derived from sequence near the carboxy-terminus of human αA- and αB-Crystallin, conjugated to KLH |
| Related Products: | |
| SPP-225 | Bovine α-Crystallin Native Protein |
| SPP-227 | Bovine αB-Crystallin Native Protein |
| LYC-HL101 | HeLa Cell Lysate (Heat Shocked) |
| SAB-301 | Goat anti-Rabbit IgG Polyclonal Antibody, AP Conjugate |

Background:

Alpha-crystallins composed of αA (~20 kDa) and αB (~20 kDa) subunits, are major water-soluble proteins accounting for almost 50% of total protein in the mammalian transparent eye lens and they are also found in a variety of other tissues¹. The two other crystallin families, β and γ, are homologous to each other but not to the α family or the sHsp's. Alpha-crystallins are also referred to as small heat shock proteins, since they are induced by increased temperature in a variety of organisms². The α-crystallins have sequence homology as well as structural and functional similarities with the small Hsp's such as Hsp25/27³. Most small heat shock proteins have four common structural and functional features: (i) molecular weight between 12 and 43kDa; (ii) the formation of large oligomeric complexes composed of αA-crystallin, αB-crystallin and Hsp25/27; (iii) the moderately conserved α-crystallin domain in the central region of the protein; and (iv) molecular chaperone activity^{2,4}. The α-crystallin domain comprises approximately 90 residues, is bounded by variable N-terminal and C-terminal extensions and is involved in oligomer assembly. Oligomers can reach 800kDa or more and are dynamic, exhibiting subunit exchanges and organizational plasticity, possibly leading to functional diversity. Phosphorylation of serine residues occurs during development and in response to stress, and usually decreases oligomer size⁴. Chaperone activity requires, and is modulated by, oligomerization and is limited to binding unfolded intermediates to prevent irreversible aggregation^{2,4}, although productive release and refolding of denatured proteins requires close cooperation with other chaperones. Other proposed functions include a role in membrane stabilization² and modulation of intermediate filament organization during physiological stress and neurodegenerative disease⁵.

References:

1. Augusteyn, R. C., *et al.* (1998) *Progress in Polymer Science* **23**: 375-413.
2. Narberhaus, F. (2002) *Microbiol Mol Biol Rev* **66**(1): 64-93.
3. Merck, K. B., *et al.* (1993) *J. Biol. Chem.* **268**: 1046-1052.
4. MacRae, T.H. (2000) *Cell Mol Life Sci* **57**(6): 899-913.
5. Head, M.W., *et al.* (2000) *Neuropathol Appl Neurobiol* **26**(4): 304-312.
6. GenBank Accession #U05569 and #M28638



Western blot analysis Lane 1: MWM,
 Lane 2: SPP-225, Lane 3: SPP-227, Lane 4:
 HeLa HS, Lane 5: Mouse Heart

FOR RESEARCH USE ONLY; NOT FOR THERAPEUTIC OR DIAGNOSTIC USE

5777 Hines Drive • Ann Arbor, MI • 48108 | Tel: 800-833-8651 or 800-668-6113 | Fax: 734-668-2793
www.assaydesigns.com | orders@assaydesigns.com | technical@assaydesigns.com

Last Revised: 3/6/2008