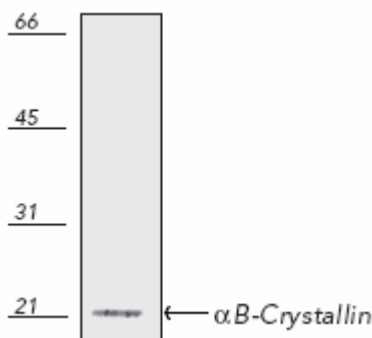


Crystallin, α B Polyclonal Antibody

Product Specifications

| | |
|---|--|
| Catalog Number: | SPA-223 |
| Host: | Rabbit |
| Species Reactivity: | Human, mouse, rat, bovine, and pig |
| Applications: <i>The optimal dilution for a specific application must be determined by the investigator</i> | WB ^{7,8} : 1:2000 (Colorimetric) |
| Predicted m.w.: | ~22 kDa |
| Concentration: | See product label |
| Purification: | Protein A Affinity |
| Format: | PBS, 0.09% sodium azide, 50% glycerol |
| Storage: <i>Shipping conditions may differ from the recommended storage temperature</i> | Store at -20°C |
| Immunogen: | Synthetic peptide derived from sequence near the carboxy-terminus of human α B-Crystallin ⁶ , conjugated to KLH; sequence identical to rat, rabbit, and bovine |
| Related Products: | |
| SAB-301 | Goat anti-Rabbit IgG Polyclonal Antibody, AP Conjugate |
| LYC-HL101 | HeLa Cell Lysate (Heat Shocked) |
| SPP-226 | Crystallin, α Native Protein |
| SPP-235 | Crystallin, β Native Protein |



Western blot analysis of α B-Crystallin protein, probed with Crystallin, α B Polyclonal Antibody

Background:

Alpha-crystallins composed of ~20 kDa α A and α B subunits function as major water-soluble proteins accounting for almost 50% of total protein in the mammalian transparent eye lens, also existing in a variety of other tissues¹. Crystallin families β and γ share homology with each other but not the α -crystallin family or the small heat shock protein (sHsp) family. sHsps including the α -crystallin proteins are induced by heat and other stress insults in a variety of organisms². The α -crystallins possess structural and functional similarities and share sequence homology with Hsp25/27³. Most sHsps exhibit four common structural and functional features: monomeric molecular weight between 12 and 43kDa; the formation of large oligomeric complexes especially for α A-crystallin, α B-crystallin and Hsp25/27; a moderately conserved α -crystallin domain in the central region of the protein; and molecular chaperone activity^{2,4}. The α -crystallin domain bounded by variable N-terminal and C-terminal extensions contains approximately 80 residues and participates in oligomer assembly. Oligomers, potentially 800kDa or more, exhibit dynamic subunit exchanges and organizational plasticity, which may promote functional diversity. Phosphorylation of serine residues specifically for Hsp27 occurs in response to stress during development, typically decreasing oligomer size⁴. Chaperone activity requires oligomerization (which, in turn, modulates the chaperone activity) and is confined to binding unfolded intermediates to prevent irreversible aggregation^{2,4}, even though 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) *Prog in Polymer Sci.* **23**, 375-413.
2. Narberhaus, F. (2002) *Microbiol Mol Biol Rev.* **66**, 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**, 899-913.
5. Head, M.W., *et al.* (2000) *Neuropathol Appl Neurobiol.* **26**, 304-312.
6. GenBank Accession #U05569 and # M28638.
7. Suzuki, A., *et al.* (1998) *J Cell Biol.* **140**, 1113-1124.
8. Morrison, L.E., *et al.* (2003) *Circ Res.* **92**, 203-211.
9. Harris, M.B., *et al.* (2001) *Am J Physiol.* **280**, H2271-H2280.
10. Shinder, G.A., *et al.* (2001) *J Biol Chem.* **276**, 12791-12796.
11. Golenhofen, N., *et al.* (2002) *Histochem Cell Biol.* **117**, 203-209.

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: 4/10/2008