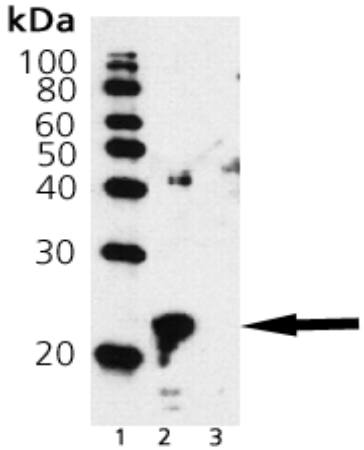
Crystallin, αB (phospho-Ser45) Polyclonal Antibody

Product Specifications

Catalog Number:	SPA-226
Host:	Rabbit
Species Reactivity:	Human, Mouse, Rat, Bovine, Canine, Chicken, Guinea Pig, Hamster, Monkey, Pig, Rabbit, Scallop, Xenopus Other species not tested.
Application:	WB (ECL, 1:500), IP Other applications not tested. *The optimal dilution for a specific application must be determined by the investigator*
Predicted MW:	~22 kDa
Concentration:	See product label
Purification:	Affinity Purified
Format:	0.1M sodium phosphate buffer, pH 7.0, 0.1% azide, 1.5% BSA
Storage:	-20°C *Shipping conditions may differ from the recommended storage temperature*
Immunogen:	Synthetic phospho-peptide derived from the sequence of human αB Crystallin
Related Products:	
LYC-HL101	HeLa Cell Lysate, Heat Shocked
LYC-PC100	PC-12 Cell Lysate
LYC-3T100	3T3 Cell Lysate
SPA-227	Crystallin, αB (phospho-Ser59) Polyclonal
960-074	Crystallin, αB ImmunoSet



Western Blot Analysis of Crystallin αB (phospho-Ser45):
Lane 1: MWM, Lane 2: αB1 Crystallin Protein (phospho), Lane 3: αB2 Crystallin Protein (non-phospho)

Background:

Alpha-crystallins composed of ~20 kDa αA and αB 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 tissues[1]. Crystallin families β and γ share homology with each other but not the α family or the small heat shock protein (sHsp) family, while Alpha-crystallins, induced by heat in a variety of organisms, belong to the sHsp family[2]. The α-crystallins possess structural and functional similarities and share sequence homology with Hsp25/27[3]. Most small heat shock proteins exhibit four common structural and functional features: molecular weight between 12 and 43kDa; the formation of large oligomeric complexes composed of αA-crystallin, αB-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 90 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 occurs in response to stress during development, typically decreasing oligomer size[4]. 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 stabilization[2] and modulation of intermediate filament organization during physiological stress and neurodegenerative disease[5]. Alpha B Crystallin is phosphorylated on serine 45 by Erk1/2 and serine 59 by MAPKAPK-2[6,7]. When isolated, mono-phosphorylated αB-crystallin contains only αB-crystallin phosphorylated at serine 19[8].

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. Armstrong, S.C., *et al*. (2000) J Mol Cell Cardiol. **32**, 1301-1314.
7. Ito H, *et al*. (1999) FEBS Lett. **446**, 269-272.
8. Kamei, A., *et al*. (2001) Biol Pharm Bull. **24**, 96-99.

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: 1/16/2009