

α C-crystallin (PL-A11): sc-134243

BACKGROUND

Crystallins are the major proteins expressed in the vertebrate eye lens, where they maintain the transparency and refractive index of the lens. Crystallins are divided into α , β and γ families; β and γ -crystallins compose a superfamily. Crystallins usually contain seven distinctive protein regions, including four homologous motifs, a connecting peptide, and N- and C-terminal extensions. α -crystallins consist of three gene products, αA , αB and αC -crystallin, which are members of the small heat shock protein family (HSP 20). They are induced by heat shock and act as molecular chaperones by holding denatured proteins in large soluble aggregates. However, unlike other molecular chaperones, α -crystallins do not renature these proteins. Research indicates that binding occurs between membranes and αC -crystallin. The binding site appears to be at the polar-apolar interface in membrane protein (MIP26) and αC -crystallin; the lipid bilayer becomes less mobile with αC -crystallin binding.

REFERENCES

1. Neuffer, P.D., et al. 1996. Differential expression of β -crystallin and HSP 27 in skeletal muscle during continuous contractile activity. Relationship to myogenic regulatory factors. *J. Biol. Chem.* 271: 24089-24095.
2. Litt, M., et al. 1998. Autosomal dominant congenital cataract associated with a missense mutation in the human α -crystallin gene CRYAA. *Hum. Mol. Genet.* 7: 471-474
3. Haley, D.A., et al. 1998. The small heat-shock protein, αB -crystallin, has a variable quaternary structure. *J. Mol. Biol.* 277: 27-35.
4. Bova, M.P., et al. 1999. Mutation R120G in αB -crystallin, which is linked to a Desmin-related myopathy, results in an irregular structure and defective chaperone-like function. *Proc. Natl. Acad. Sci. USA* 96: 6137-6142.
5. Wang, K., et al. 2000. α -crystallin prevents irreversible protein denaturation and acts cooperatively with other heat-shock proteins to renature the stabilized partially denatured protein in an ATP-dependent manner. *Eur. J. Biochem.* 267: 4705-4712.
6. Jaenicke, R., et al. 2001. Lens crystallins and their microbial homologs: structure, stability, and function. *Crit. Rev. Biochem. Mol. Biol.* 36: 435-499.

CHROMOSOMAL LOCATION

Genetic locus: HSPB8 (human) mapping to 12q24.23; Hspb8 (mouse) mapping to 5 F.

SOURCE

αC -crystallin (PL-A11) is a mouse monoclonal antibody raised against recombinant αC -crystallin protein of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2b} kappa light chain in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

αC -crystallin (PL-A11) is recommended for detection of αC -crystallin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for αC -crystallin siRNA (h): sc-72422, αC -crystallin siRNA (m): sc-72423, αC -crystallin shRNA Plasmid (h): sc-72422-SH, αC -crystallin shRNA Plasmid (m): sc-72423-SH, αC -crystallin shRNA (h) Lentiviral Particles: sc-72422-V and αC -crystallin shRNA (m) Lentiviral Particles: sc-72423-V.

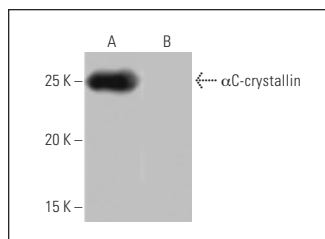
Molecular Weight of αC -crystallin: 22 kDa.

Positive Controls: human αC -crystallin transfected 293T whole cell lysate.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



αC -crystallin (PL-A11): sc-134243. Western blot analysis of αC -crystallin expression in human αC -crystallin transfected (A) and non-transfected (B) 293T whole cell lysates.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.