

# $\alpha$ C-crystallin (2H5): sc-51745

## 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  $\alpha$ ,  $\beta$  and  $\gamma$  families;  $\beta$  and  $\gamma$ -crystallins compose a superfamily. Crystallins usually contain seven distinctive protein regions, including four homologous motifs, a connecting peptide, and N- and C-terminal extensions.  $\alpha$ -crystallins consist of three gene products,  $\alpha$ A,  $\alpha$ B and  $\alpha$ C-crystallin, which are members of the small heat shock protein family (HSP20). They are induced by heat shock, and act as molecular chaperones by holding denatured proteins in large soluble aggregates. However, unlike other molecular chaperones,  $\alpha$ -crystallins do not renature these proteins. Research indicates that binding occurs between membranes and  $\alpha$ C-crystallin. The binding site appears to be at the polar-apolar interface in membrane protein (MIP26) and  $\alpha$ C-crystallin; the lipid bilayer becomes less mobile with  $\alpha$ C-crystallin binding.

## REFERENCES

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2. Litt, M., et al. 1998. Autosomal dominant congenital cataract associated with a missense mutation in the human  $\alpha$ -crystallin gene CRYAA. *Hum. Mol. Genet.* 7: 471-474.
3. Haley, D.A., et al. 1998. The small heat-shock protein,  $\alpha$ B-crystallin, has a variable quaternary structure. *J. Mol. Biol.* 277: 27-35.
4. Bova, M.P., et al. 1999. Mutation R120G in  $\alpha$ B-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.  $\alpha$ -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.
7. Narberhaus, F. 2002.  $\alpha$ -crystallin-type heat shock proteins: socializing minichaperones in the context of a multichaperone network. *Microbiol. Mol. Biol. Rev.* 66: 64-93.
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## CHROMOSOMAL LOCATION

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

## SOURCE

$\alpha$ C-crystallin (2H5) is a mouse monoclonal antibody raised against recombinant full length  $\alpha$ C-crystallin of human origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

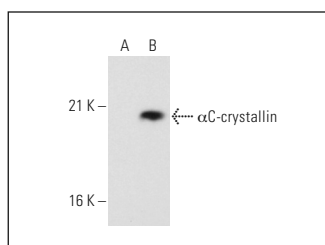
$\alpha$ C-crystallin (2H5) is recommended for detection of  $\alpha$ C-crystallin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

Molecular Weight of  $\alpha$ C-crystallin: 22 kDa.

Positive Controls:  $\alpha$ C-crystallin (m): sc-293T Lysate: sc-118175.

## DATA



$\alpha$ C-crystallin (2H5): sc-51745. Western blot analysis of  $\alpha$ C-crystallin expression in non-transfected: sc-117752 (A) and mouse  $\alpha$ C-crystallin transfected: sc-118175 (B) 293T whole cell lysates.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.