

α C-crystallin (P-20): sc-22393

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, α A, α B, and α C-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 α C-crystallin. The binding site appears to be at the polar-apolar interface in membrane protein (MIP26) and α C-crystallin; the lipid bilayer becomes less mobile with α C-crystallin binding.

REFERENCES

1. Neuffer, P.D., et al. 1996. Differential expression of β -crystallin and Hsp27 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, α B-crystallin, has a variable quaternary structure. *J. Mol. Biol.* 277: 27-35.
4. Bova, M.P., et al. 1999. Mutation R120G in α 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. 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

α C-crystallin (P-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of α C-crystallin of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22393 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

α C-crystallin (P-20) is recommended for detection of α C-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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

α C-crystallin (P-20) is also recommended for detection of α C-crystallin in additional species, including equine, canine, bovine and porcine.

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

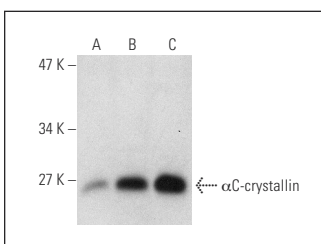
Molecular Weight of α C-crystallin: 22 kDa.

Positive Controls: α C-crystallin (m): 293T Lysate: sc-118175 or PC-12 cell lysate: sc-2250.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



α C-crystallin (P-20): sc-22393. Western blot analysis of α C-crystallin expression in non-transfected 293T: sc-117752 (A), mouse α C-crystallin transfected 293T: sc-118175 (B) and PC-12 (C) 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.

RESEARCH USE

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