SANTA CRUZ BIOTECHNOLOGY, INC.

αC-crystallin (H-5): sc-398395

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (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, 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. Neufer, 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, 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.

CHROMOSOMAL LOCATION

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

SOURCE

αC-crystallin (H-5) is a mouse monoclonal antibody raised against amino acids 24-88 mapping within an internal region of αC-crystallin of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

αC-crystallin (H-5) is available conjugated to agarose (sc-398395 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398395 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398395 PE), fluorescein (sc-398395 FITC), Alexa Fluor® 488 (sc-398395 AF488), Alexa Fluor® 546 (sc-398395 AF546), Alexa Fluor® 594 (sc-398395 AF594) or Alexa Fluor® 647 (sc-398395 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398395 AF680) or Alexa Fluor® 790 (sc-398395 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

αC-crystallin (H-5) is recommended for detection of αC-crystallin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

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.

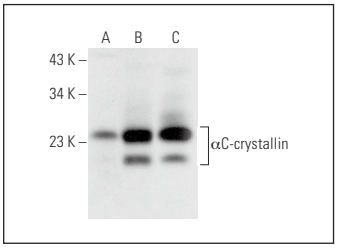
Molecular Weight of αC-crystallin: 22 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, human heart extract: sc-363763 or human skeletal muscle extract: sc-363776.

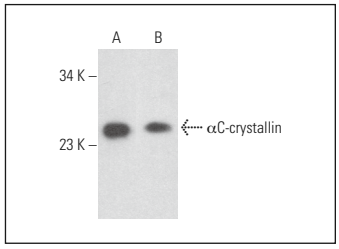
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



αC-crystallin (H-5): sc-398395. Western blot analysis of αC-crystallin expression in HeLa whole cell lysate (**A**) and human heart (**B**) and human skeletal muscle (**C**) tissue extracts.



αC-crystallin (H-5): sc-398395. Western blot analysis of αC-crystallin expression in MCF7 (**A**) and Neuro-2A (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Zhu, Y., et al. 2023. Silica nanoparticles trigger chaperone HSPB8-assisted selective autophagy via TFEB activation in hepatocytes. Small 19: e2204310.

STORAGE

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