SANTA CRUZ BIOTECHNOLOGY, INC.

γ-crystallin (B-5): sc-365256

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Crystallins are the major proteins of the vertebrate eye lens, where they maintain the transparency and refractive index of the lens. Crystallins are divided into α, β, and γ families, and the β and γ-crystallins also comprise a superfamily. Crystallins usually contain seven distinctive protein regions, including four homologous motifs, a connecting peptide, and N- and C-terminal extensions. γ-crystallins are structural proteins in the lens, and they exists as monomers which typically lack connecting peptides and terminal extensions. The γ-crystallins include seven closely related γA, γB, γC, γD, γE, γF, and γG-crystallin, as well as the γN and γS-crystallin genes. The γ-crystallins are differentially regulated after early development, and are involved in cataract formation as a result of either age-related protein degradation or genetic mutation.

REFERENCES

1. Srivastava, O.P. and Srivastava, K. 1998. Degradation of γD- and γs-crystallins in human lenses. Biochem. Biophys. Res. Commun. 253: 288-294.
2. Srivastava, O.P. and Srivastava, K. 1998. Purification of γ-crystallin from human lenses by acetone precipitation method. Curr. Eye Res. 17: 1074-1081.
3. Klok, E.J., et al. 1998. Regulation of expression within a gene family. The case of the rat γB- and γD-crystallin promoters. J. Biol. Chem. 273: 17206-17215.
4. Stephan, D.A., et al. 1999. Progressive juvenile-onset punctate cataracts caused by mutation of the γD-crystallin gene. Proc. Natl. Acad. Sci. USA 96: 1008-1012.

SOURCE

γ-crystallin (B-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 17-49 near the N-terminus of γ-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.

γ-crystallin (B-5) is available conjugated to agarose (sc-365256 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365256 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365256 PE), fluorescein (sc-365256 FITC), Alexa Fluor® 488 (sc-365256 AF488), Alexa Fluor® 546 (sc-365256 AF546), Alexa Fluor® 594 (sc-365256 AF594) or Alexa Fluor® 647 (sc-365256 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365256 AF680) or Alexa Fluor® 790 (sc-365256 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365256 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

γ-crystallin (B-5) is recommended for detection of γ-crystallin A, B, C, D, E, F 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).

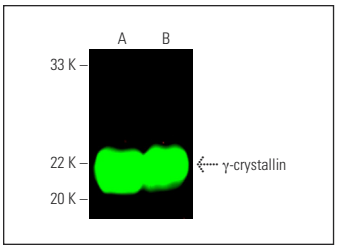
Molecular Weight of γ-crystallin: 20 kDa.

Positive Controls: rat eye extract: sc-364805, mouse eye extract: sc-364241 or Y79 cell lysate: sc-2240.

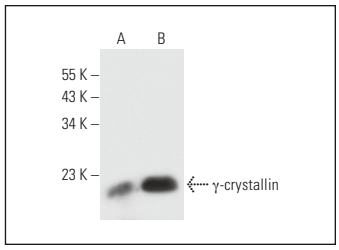
RECOMMENDED SUPPORT REAGENTS

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



γ-crystallin (B-5): sc-365256. Near-infrared western blot analysis of γ-crystallin expression in mouse eye (**A**) and rat eye (**B**) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



γ-crystallin (B-5): sc-365256. Western blot analysis of γ-crystallin expression in mouse eye (**A**) and rat eye (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Chen, X., et al. 2023. Lens regeneration in situ using hESCs-derived cells -similar to natural lens. iScience 26: 106921.

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 for detailed protocols and support products.