SANTA CRUZ BIOTECHNOLOGY, INC.

γ-crystallin (F-4): sc-514201

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

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3. Srivastava, O.P. and Srivastava, K. 1998. Degradation of γD- and γS-crystallins in human lenses. Biochem. Biophys. Res. Commun. 253: 288-294.
4. Stephan, D.A., Gillanders, E., Vanderveen, D., Freas-Lutz, D., Wistow, G., Baxevanis, A.D., Robbins, C.M., VanAuken, A., Quesenberry, M.I., Bailey-Wilson, J., Juo, S.H., Trent. J.M., Smith, L. and Brownstein, M.J. 1999. Progressive juvenile-onset punctate cataracts caused by mutation of the γD-crystallin gene. Proc. Natl. Acad. Sci. USA 96: 1008-1012.
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6. Jaenicke, R. and Slingsby, C. 2001. Lens crystallins and their microbial homologs: structure, stability, and function. Crit. Rev. Biochem. Mol. Biol. 36: 435-499.
7. Wang, X., Garcia, C.M., Shui, Y.B. and Beebe, D.C. 2004. Expression and regulation of α-, β-, and γ-crystallins in mammalian lens epithelial cells. Invest. Ophthalmol. Vis. Sci. 45: 3608-3619.
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SOURCE

γ-crystallin (F-4) is a mouse monoclonal antibody raised against amino acids 22-75 mapping near the N-terminus of γA-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.

RESEARCH USE

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

APPLICATIONS

γ-crystallin (F-4) is recommended for detection of γA-crystallin, γB-crystallin and γC-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).

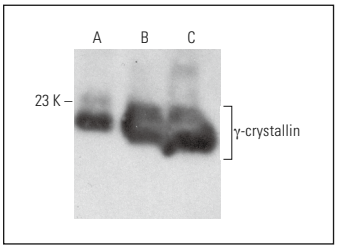
Molecular Weight of γ-crystallin: 20 kDa.

Positive Controls: human eye extract: sc-364223, rat eye extract: sc-364805 or mouse eye extract: sc-364241.

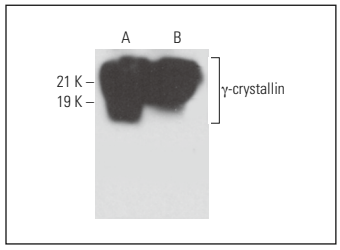
RECOMMENDED SUPPORT REAGENTS

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 (F-4): sc-514201. Western blot analysis of γ-crystallin expression in human eye (**A**), rat eye (**B**) and mouse eye (**C**) tissue extracts.



γ-crystallin (F-4): sc-514201. Western blot analysis of γ-crystallin expression in rat eye (**A**) and mouse eye (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Thompson, B., et al. 2021. Impaired GSH biosynthesis disrupts eye development, lens morphogenesis and PAX6 function. Ocul. Surf. 22: 190-203.

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.