SANTA CRUZ BIOTECHNOLOGY, INC.

γS-crystallin (E-9): sc-515095

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Crystallins are water soluble structural proteins found in the vertebrate eye. Mammalian crystallins are classified in three forms, designated α, β and γ. Crystallins, as the principal components of the lens, function to increase the refractive index of the eye during accommodation by forming high-molecular weight aggregates which maintain transparency. γS-crystallin (γ-crystallin S), also known as β-crystallin S, is a 178 amino acid protein that exists as a monomer which does not aggregate. γS-crystallin contains a two-domain β structure and belongs to the β/γ-crystallin gene family mapping to human chromosome 3. γS-crystallin has been linked to congenital cataract development, a disorder signified by increasing levels of lens opacity.

REFERENCES

1. den Dunnen, J.T., et al. 1985. Human lens γ-crystallin sequences are located in the p12-qter region of chromosome 2. Hum. Genet. 70: 217-221.
2. Zarina, S., et al. 1992. Primary structure of βS-crystallin from human lens. Biochem. J. 287: 375-381.
3. Smith, J.B., et al. 1995. The complete sequence of human lens γS-crystallin. Biochem. J. 307: 407-410.
4. Lampi, K.J., et al. 1997. Sequence analysis of βA3-, βB3-, and βA4-crystallins completes the identification of the major proteins in young human lens. J. Biol. Chem. 272: 2268-2275.
5. Wistow, G., et al. 2000. The human gene for γS-crystallin: alternative transcripts and expressed sequences from the first intron. Mol. Vis. 6: 79-84.
6. Purkiss, A.G., et al. 2002. The X-ray crystal structure of human γS-crystallin C-terminal domain. J. Biol. Chem. 277: 4199-4205.
7. Sun, H., et al. 2005. γS-crystallin gene (CRYGS) mutation causes dominant progressive cortical cataract in humans. J. Med. Genet. 42: 706-710.
8. Jester, J.V. 2008. Corneal crystallins and the development of cellular transparency. Semin. Cell Dev. Biol. 19: 82-93.

CHROMOSOMAL LOCATION

Genetic locus: CRYGS (human) mapping to 3q27.3; Crygs (mouse) mapping to 16 B1.

SOURCE

γS-crystallin (E-9) is a mouse monoclonal antibody raised against amino acids 66-115 mapping within an internal region of γS-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.

STORAGE

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

APPLICATIONS

γS-crystallin (E-9) is recommended for detection of γS-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 γS-crystallin siRNA (h): sc-40464, γS-crystallin siRNA (m): sc-40465, γS-crystallin shRNA Plasmid (h): sc-40464-SH, γS-crystallin shRNA Plasmid (m): sc-40465-SH, γS-crystallin shRNA (h) Lentiviral Particles: sc-40464-V and γS-crystallin shRNA (m) Lentiviral Particles: sc-40465-V.

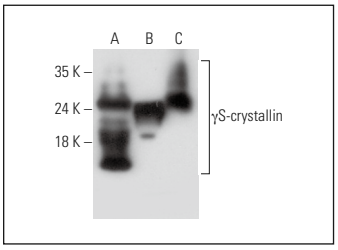
Molecular Weight of γS-crystallin: 21 kDa.

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

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



γS-crystallin (E-9): sc-515095. Western blot analysis of γS-crystallin expression in rat eye (**A**), mouse eye (**B**) and human eye (**C**) tissue extracts.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.