SANTA CRUZ BIOTECHNOLOGY, INC.

λ-crystallin (N-20)-R: sc-22420-R

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Crystallins are divided into two classes, taxon-specific, or enzyme, and ubiquitous. The ubiquitous crystallins constitute the major proteins of the vertebrate eye lens, where they maintain the transparency and refractive index of the lens. The taxon-specific crystallins, also designated phylogenetically-restricted crystallins, include λ-, μ- and ζ-crystallin, which all share homology to various enzymes. λ-crystallin is best described in rabbit, where it shares homology with L-3-hydroxyacyl-CoA dehydrogenase from pig. The human μ-crystallin gene maps to chromosome 16p13, and encodes a protein that is expressed in neural tissue, muscle and kidney. Unlike other crystallins, μ-crystallin does not perform a structural role in lens tissue, but rather it binds NADPH and thyroid hormone, which indicates that it may have other regulatory or developmental functions. ζ-crystallin/quinone reductase is present at low levels in human lens tissue. It has NADPH-dependent quinone reductase activity distinct from other known quinone reductases, and may play a role as a pH response element-binding protein.

REFERENCES

1. Mulders, J.W., Hendriks, W., Blankesteijn, W.M.,Bloemendal, H. and de Jong, W.W. 1988. λ-crystallin, a major rabbit lens protein, is related to hydroxyacyl-coenzyme A dehydrogenases. J. Biol. Chem. 263: 15462-15466.
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3. Slingsby, C. and Clout, N.J. 1999. Structure of the crystallins. Eye 13: 395-402.
4. Tang, A. and Curthoys, N.P. 2001. Identification of ζ-crystallin/NADPH: quinone reductase as a renal glutaminase mRNA pH response element-binding protein. J. Biol. Chem. 276: 21375-21380.
5. Horwitz, J. 2003. α-crystallin. Exp. Eye Res. 76: 145-153.
6. Bhat, S.P. 2004. Transparency and non-refractive functions of crystallins—a proposal. Exp. Eye Res. 79: 809-816.
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CHROMOSOMAL LOCATION

Genetic locus: CRYL1 (human) mapping to 13q12.11; Cryl1 (mouse) mapping to 14 C3.

SOURCE

λ-crystallin (N-20)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of λ-crystallin of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-22420 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

λ-crystallin (N-20)-R is recommended for detection of λ-crystallin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

λ-crystallin (N-20)-R is also recommended for detection of λ-crystallin in additional species, including canine.

Suitable for use as control antibody for λ-crystallin siRNA (h): sc-77031, λ-crystallin siRNA (m): sc-155876, λ-crystallin shRNA Plasmid (h): sc-77031-SH, λ-crystallin shRNA Plasmid (m): sc-155876-SH, λ-crystallin shRNA (h) Lentiviral Particles: sc-77031-V and λ-crystallin shRNA (m) Lentiviral Particles: sc-155876-V.

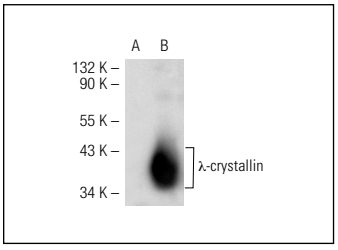
Molecular Weight of λ-crystallin: 33 kDa.

Positive Controls: λ-crystallin (m): 293T Lysate: sc-119477, mouse liver extract: sc-2256 or mouse kidney extract: sc-2255.

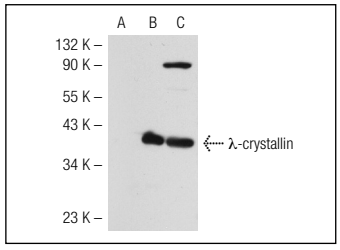
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



λ-crystallin (N-20)-R: sc-22420-R. Western blot analysis of λ-crystallin expression in non-transfected: sc-117752 (**A**) and mouse λ-crystallin transfected: sc-119478 (**B**) 293T whole cell lysates.



λ-crystallin (N-20)-R: sc-22420-R. Western blot analysis of λ-crystallin expression in non-transfected: sc-117752 (**A**) and mouse λ-crystallin transfected: sc-119477 (**B**) 293T whole cell lysates and mouse kidney tissue extract (**C**).

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.