SANTA CRUZ BIOTECHNOLOGY, INC.

μ-crystallin (E-8): sc-393048

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 porcine. 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., et al. 1988. λ-crystallin, a major rabbit lens protein, is related to hydroxyacyl-coenzyme A dehydrogenases. J. Biol. Chem. 263: 15462-15466.
2. Chen, H., et al. 1992. Localization of the human gene for μ-crystallin to chromosome 16p. Genomics 14: 1115-1116.
3. Slingsby, C., et al. 1999. Structure of the crystallins. Eye 13: 395-402.
4. Tang, A., et al. 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.
7. Paulin, D., et al. 2004. Desminopathies in muscle disease. J. Pathol. 204: 418-427.
8. LocusLink Report (LocusID: 1428). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: CRYM (human) mapping to 16p12.2.

SOURCE

μ-crystallin (E-8) is a mouse monoclonal antibody raised against amino acids 22-314 mapping at the C-terminus of μ-crystallin of human origin.

PRODUCT

Each vial contains 200 μg IgG_{2a} 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

μ-crystallin (E-8) is recommended for detection of μ-crystallin of 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 μ-crystallin siRNA (h): sc-40466, μ-crystallin shRNA Plasmid (h): sc-40466-SH and μ-crystallin shRNA (h) Lentiviral Particles: sc-40466-V.

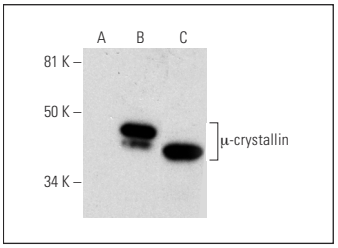
Molecular Weight of μ-crystallin: 36 kDa.

Positive Controls: μ-crystallin (h2): 293T Lysate: sc-159522, ARPE-19 whole cell lysate: sc-364357 or Y79 cell lysate: sc-2240.

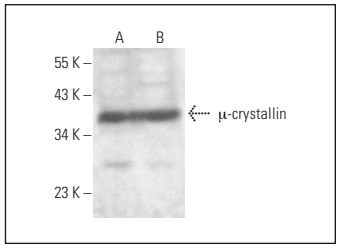
RECOMMENDED SUPPORT REAGENTS

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



μ-crystallin (E-8): sc-393048. Western blot analysis of μ-crystallin expression in non-transfected: sc-117752 (**A**) and human μ-crystallin transfected: sc-159522 (**B**) 293T whole cell lysates and human kidney tissue extract (**C**).



μ-crystallin (E-8): sc-393048. Western blot analysis of μ-crystallin expression in ARPE-19 (**A**) and Y79 (**B**) whole cell lysates.

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.