SANTA CRUZ BIOTECHNOLOGY, INC.

μ-crystallin (L-20): sc-22424

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 16p12.2, 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.

CHROMOSOMAL LOCATION

Genetic locus: CRYM (human) mapping to 16p12.2; Crym (mouse) mapping to 7 F2.

SOURCE

μ-crystallin (L-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of μ-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-22424 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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 (L-20) is recommended for detection of μ-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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

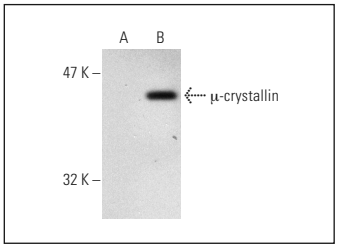
μ-crystallin (L-20) is also recommended for detection of μ-crystallin in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for μ-crystallin siRNA (h): sc-40466, μ-crystallin siRNA (m): sc-40467, μ-crystallin shRNA Plasmid (h): sc-40466-SH, μ-crystallin shRNA Plasmid (m): sc-40467-SH, μ-crystallin shRNA (h) Lentiviral Particles: sc-40466-V and μ-crystallin shRNA (m) Lentiviral Particles: sc-40467-V.

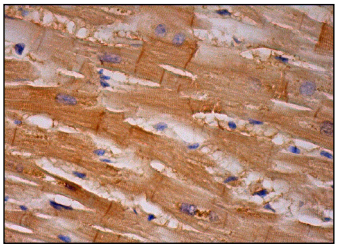
Molecular Weight of μ-crystallin: 36 kDa.

Positive Controls: μ-crystallin (h2): 293T Lysate: sc-159522, Jurkat whole cell lysate: sc-2204 or rat kidney extract: sc-2394.

DATA



μ-crystallin (L-20): sc-22424. 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.



μ-crystallin (L-20): sc-22424. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic and intercalated disc staining of myocytes.

RESEARCH USE

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

PROTOCOLS

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