

α B-crystallin (C-5): sc-398079

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 compose a superfamily. Crystallins usually contain seven distinct protein regions, including four homologous motifs, a connecting peptide, and N- and C-terminal extensions. α -crystallins consist of three gene products, α A-, α B- and α C-crystallin, which are members of the small heat shock protein family (HSP 20). α -crystallins act as molecular chaperones by holding denatured proteins in large soluble aggregates. However, unlike other molecular chaperones, α -crystallins do not renature these proteins. Expression of α A-crystallin is restricted to the lens and defects of this gene cause the development of autosomal dominant congenital cataracts (ADCC). The human α B-crystallin gene product is expressed in many tissues, including lens, heart and skeletal muscle. Elevated expression of α B-crystallin is associated with many neurological diseases, and a missense mutation in this gene has co-segregated in a family with a Desmin-related myopathy.

REFERENCES

- Neufer, P.D., et al. 1996. Differential expression of B-crystallin and HSP 27 in skeletal muscle during continuous contractile activity. Relationship to myogenic regulatory factors. *J. Biol. Chem.* 271: 24089-24095.
- Litt, M., et al. 1998. Autosomal dominant congenital cataract associated with a missense mutation in the human α -crystallin gene CRYAA. *Hum. Mol. Genet.* 7: 471-474.
- Haley, D.A., et al. 1998. The small heat shock protein, α B-crystallin, has a variable quaternary structure. *J. Mol. Biol.* 277: 27-35.
- Bova, M.P., et al. 1999. Mutation R120G in α B-crystallin, which is linked to a Desmin-related myopathy, results in an irregular structure and defective chaperone-like function. *Proc. Natl. Acad. Sci. USA* 96: 6137-6142.

CHROMOSOMAL LOCATION

Genetic locus: CRYAB (human) mapping to 11q23.1; Cryab (mouse) mapping to 9 A5.3.

SOURCE

α B-crystallin (C-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 117-152 within an internal region of α B-crystallin of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-398079 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

α B-crystallin (C-5) is recommended for detection of α B-crystallin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

α B-crystallin (C-5) is also recommended for detection of α B-crystallin in additional species, including porcine.

Suitable for use as control antibody for α B-crystallin siRNA (h): sc-40432, α B-crystallin siRNA (m): sc-40433, α B-crystallin shRNA Plasmid (h): sc-40432-SH, α B-crystallin shRNA Plasmid (m): sc-40433-SH, α B-crystallin shRNA (h) Lentiviral Particles: sc-40432-V and α B-crystallin shRNA (m) Lentiviral Particles: sc-40433-V.

Molecular Weight (predicted) of α B-crystallin: 20 kDa.

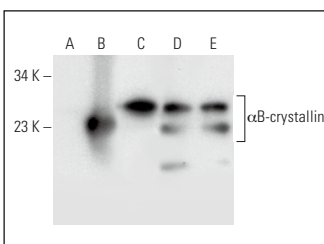
Molecular Weight (observed) of α B-crystallin: 22-30 kDa.

Positive Controls: α B-crystallin (m): 293T Lysate: sc-118149, human heart extract: sc-363763 or Y79 cell lysate: sc-2240.

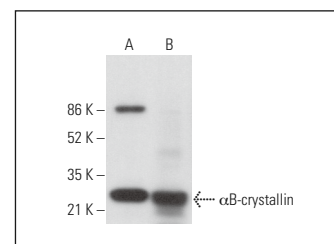
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



α B-crystallin (C-5): sc-398079. Western blot analysis of α B-crystallin expression in non-transfected 293T: sc-117752 (A), mouse α B-crystallin transfected 293T: sc-118149 (B) and Y79 (C) whole cell lysates and rat heart (D) and human heart (E) tissue extracts.



α B-crystallin (C-5): sc-398079. Western blot analysis of α B-crystallin expression in Saos-2 whole cell lysate (A) and rat kidney tissue extract (B).

RESEARCH USE

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