SANTA CRUZ BIOTECHNOLOGY, INC.

αB-crystallin (C-8): sc-137144

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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, αA-, αB- and αC-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 αA-crystallin is restricted to the lens and defects of this gene cause the development of autosomal dominant congenital cataracts (ADCC). The human αB-crystallin gene product is expressed in many tissues, including lens, heart and skeletal muscle. Elevated expression of αB-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

1. 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.
2. 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.
3. Haley, D.A., et al. 1998. The small heat shock protein, αB-crystallin, has a variable quaternary structure. J. Mol. Biol. 277: 27-35.
4. Bova, M.P., et al. 1999. Mutation R120G in αB-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.
5. Wang, K., et al. 2000. α-crystallin prevents irreversible protein denaturation and acts cooperatively with other heat shock proteins to renature the stabilized partially denatured protein in an ATP-dependent manner. Eur. J. Biochem. 267: 4705-4712.
6. Jaenicke, R., et al. 2001. Lens crystallins and their microbial homologs: structure, stability and function. Crit. Rev. Biochem. Mol. Biol. 36: 435-499.

CHROMOSOMAL LOCATION

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

SOURCE

αB-crystallin (C-8) is a mouse monoclonal antibody raised against amino acids 1-175 representing full length αB-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.

APPLICATIONS

αB-crystallin (C-8) is recommended for detection of αB-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 αB-crystallin siRNA (h): sc-40432, αB-crystallin siRNA (m): sc-40433, αB-crystallin shRNA Plasmid (h): sc-40432-SH, αB-crystallin shRNA Plasmid (m): sc-40433-SH, αB-crystallin shRNA (h) Lentiviral Particles: sc-40432-V and αB-crystallin shRNA (m) Lentiviral Particles: sc-40433-V.

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

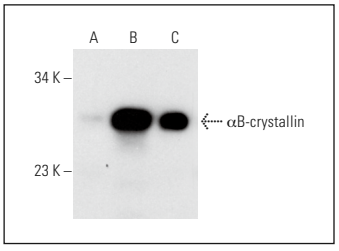
Molecular Weight (observed) of αB-crystallin: 22-30 kDa.

Positive Controls: αB-crystallin (h4): 293T Lysate: sc-159467, αB-crystallin (m): 293T Lysate: sc-118149 or Y79 cell lysate: sc-2240.

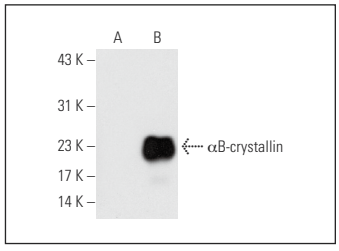
RECOMMENDED SUPPORT REAGENTS

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



αB-crystallin (C-8): sc-137144. Western blot analysis of αB-crystallin expression in non-transfected 293T: sc-117752 (**A**), human αB-crystallin transfected 293T: sc-159467 (**B**) and Y79 (**C**) whole cell lysates.



αB-crystallin (C-8): sc-137144. Western blot analysis of αB-crystallin expression in non-transfected: sc-117752 (**A**) and mouse αB-crystallin transfected: sc-118149 (**B**) 293T whole cell lysates.

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.