SANTA CRUZ BIOTECHNOLOGY, INC.

αB-crystallin (A-7): sc-137143

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.

CHROMOSOMAL LOCATION

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

SOURCE

αB-crystallin (A-7) 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.

RESEARCH USE

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

APPLICATIONS

αB-crystallin (A-7) 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 (observed) of αB-crystallin: 22-30 kDa.

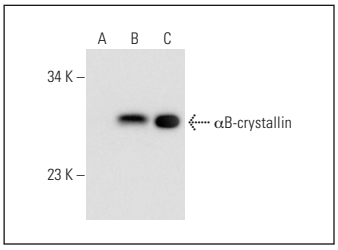
Molecular Weight (predicted) of αB-crystallin: 20 kDa.

Positive Controls: αB-crystallin (h4): 293T Lysate: sc-159467, Y79 cell lysate: sc-2240 or human heart extract: sc-363763.

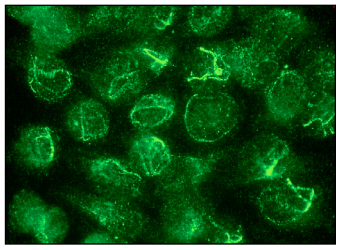
RECOMMENDED SUPPORT REAGENTS

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 (A-7): sc-137143. 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 (A-7): sc-137143. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear membrane localization.

SELECT PRODUCT CITATIONS

1. Wang, F., et al. 2015. Proteomic analysis of mouse soleus muscles affected by hindlimb unloading and reloading. Muscle Nerve 52: 803-811.
2. Guo, Y.S., et al. 2019. Extracellular αB-crystallin modulates the inflammatory responses. Biochem. Biophys. Res. Commun. 508: 282-288.
3. Lu, S.Z., et al. 2019. Suppression of astrocytic autophagy by αB-crystallin contributes to α-synuclein inclusion formation. Transl. Neurodegener. 8: 3.
4. Gao, L., et al. 2019. Mitochondria are dynamically transferring between human neural cells and Alexander disease-associated GFAP mutations impair the astrocytic transfer. Front. Cell. Neurosci. 13: 316.

STORAGE

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

PROTOCOLS

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