

# $\alpha$ B-crystallin (A-7): sc-137143

## 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  $\alpha$ ,  $\beta$  and  $\gamma$  families, and the  $\beta$ - and  $\gamma$ -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.  $\alpha$ -crystallins consist of three gene products,  $\alpha$ A-,  $\alpha$ B- and  $\alpha$ C-crystallin, which are members of the small heat shock protein family (HSP 20).  $\alpha$ -crystallins act as molecular chaperones by holding denatured proteins in large soluble aggregates. However, unlike other molecular chaperones,  $\alpha$ -crystallins do not renature these proteins. Expression of  $\alpha$ A-crystallin is restricted to the lens and defects of this gene cause the development of autosomal dominant congenital cataracts (ADCC). The human  $\alpha$ B-crystallin gene product is expressed in many tissues, including lens, heart and skeletal muscle. Elevated expression of  $\alpha$ 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

$\alpha$ B-crystallin (A-7) is a mouse monoclonal antibody raised against amino acids 1-175 representing full length  $\alpha$ B-crystallin of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> 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

$\alpha$ B-crystallin (A-7) is recommended for detection of  $\alpha$ B-crystallin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

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

Molecular Weight (observed) of  $\alpha$ B-crystallin: 22-30 kDa.

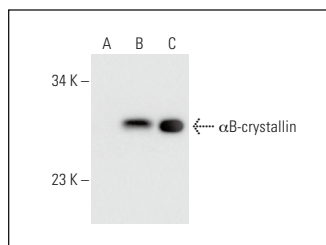
Molecular Weight (predicted) of  $\alpha$ B-crystallin: 20 kDa.

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

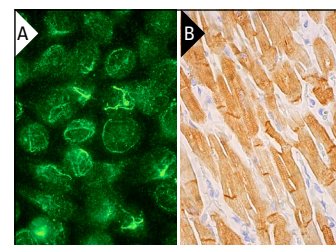
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



$\alpha$ B-crystallin (A-7): sc-137143. Western blot analysis of  $\alpha$ B-crystallin expression in non-transfected 293T: sc-117752 (A), human  $\alpha$ B-crystallin transfected 293T: sc-159467 (B) and Y79 (C) whole cell lysates.



$\alpha$ B-crystallin (A-7): sc-137143. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing intercalated disc and cytoplasmic staining of myocytes. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detected with m-IgG $\kappa$  BP-B: sc-516142 and ImmunoCruz® ABC Kit: sc-516216 (B).

## SELECT PRODUCT CITATIONS

- Wang, F., et al. 2015. Proteomic analysis of mouse soleus muscles affected by hindlimb unloading and reloading. *Muscle Nerve* 52: 803-811.
- Guo, Y.S., et al. 2019. Extracellular  $\alpha$ B-crystallin modulates the inflammatory responses. *Biochem. Biophys. Res. Commun.* 508: 282-288.
- Lu, S.Z., et al. 2019. Suppression of astrocytic autophagy by  $\alpha$ B-crystallin contributes to  $\alpha$ -synuclein inclusion formation. *Transl. Neurodegener.* 8: 3.
- 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](http://www.scbt.com) for detailed protocols and support products.