

α B-crystallin (F-10): sc-137129

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

1. Neuffer, 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.

CHROMOSOMAL LOCATION

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

SOURCE

α B-crystallin (F-10) is a mouse monoclonal antibody raised against amino acids 1-175 representing full length α B-crystallin of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

α B-crystallin (F-10) is available conjugated to agarose (sc-137129 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137129 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137129 PE), fluorescein (sc-137129 FITC), Alexa Fluor[®] 488 (sc-137129 AF488), Alexa Fluor[®] 546 (sc-137129 AF546), Alexa Fluor[®] 594 (sc-137129 AF594) or Alexa Fluor[®] 647 (sc-137129 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-137129 AF680) or Alexa Fluor[®] 790 (sc-137129 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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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 (F-10) 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), 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).

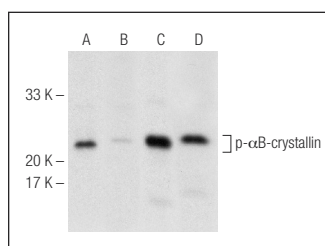
Suitable for use as control antibody for α B-crystallin siRNA (h): sc-40432, α B-crystallin siRNA (m): sc-40433, α B-crystallin shRNA Plasmid (h): sc-40432-SH, α B-crystallin shRNA Plasmid (m): sc-40433-SH, α B-crystallin shRNA (h) Lentiviral Particles: sc-40432-V and α B-crystallin shRNA (m) Lentiviral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

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

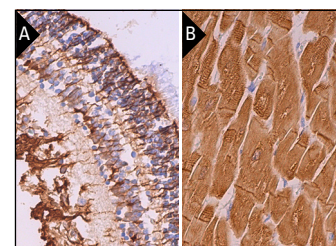
Molecular Weight (observed) of α B-crystallin: 22-30 kDa.

Positive Controls: rat heart extract: sc-2393, Y79 cell lysate: sc-2240 or rat kidney extract: sc-2394.

DATA



Western blot analysis of α B-crystallin phosphorylation in untreated (A, C) and lambda protein phosphatase (sc-200312A) treated (B, D) rat heart tissue extracts. Antibodies tested include p- α B-crystallin (F-1): sc-365884 (A, B) and α B-crystallin (F-10): sc-137129 (C, D).



α B-crystallin (F-10): sc-137129. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fetal eye tissue showing nuclear, cytoplasmic and membrane staining of cells in ganglion cell layer and cytoplasmic and membrane staining of cells in inner and outer nuclear layers (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing intercalated disc, cytoplasmic and nuclear staining of myocytes (B).

SELECT PRODUCT CITATIONS

1. Gomez-Pastor, R., et al. 2017. Abnormal degradation of the neuronal stress-protective transcription factor HSF1 in Huntington's disease. *Nat. Commun.* 8: 14405.
2. Pagano, C., et al. 2021. Association of α B-crystallin expression with tumor differentiation grade in colorectal cancer patients. *Diagnostics* 11: 896.
3. Nguyen, L.K.C., et al. 2021. Transmembrane protein 168 mutation reduces cardiomyocyte cell surface expression of Nav1.5 through α B-crystallin intracellular dynamics. *J. Biochem.* 170: 577-585.
4. Limbad, C., et al. 2022. Senolysis induced by 25-hydroxycholesterol targets CRYAB in multiple cell types. *iScience* 25: 103848.

RESEARCH USE

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