

α A-crystallin (B-2): sc-28306

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). They are induced by heat shock, and 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. Defects in this gene cause 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.

CHROMOSOMAL LOCATION

Genetic locus: CRYAA (human) mapping to 21q22.3; Cryaa (mouse) mapping to 17 B1.

SOURCE

α A-crystallin (B-2) is a mouse monoclonal antibody raised against amino acids 1-173 representing full length α A-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.

α A-crystallin (B-2) is available conjugated to agarose (sc-28306 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28306 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28306 PE), fluorescein (sc-28306 FITC), Alexa Fluor[®] 488 (sc-28306 AF488), Alexa Fluor[®] 546 (sc-28306 AF546), Alexa Fluor[®] 594 (sc-28306 AF594) or Alexa Fluor[®] 647 (sc-28306 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-28306 AF680) or Alexa Fluor[®] 790 (sc-28306 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

α A-crystallin (B-2) is recommended for detection of α A-crystallin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:10,000), 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); may cross-reactive with α B-crystallin.

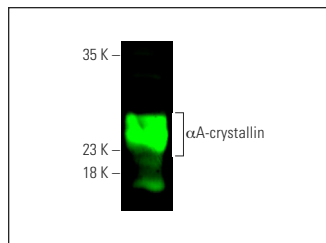
Suitable for use as control antibody for α A-crystallin siRNA (h): sc-40430, α A-crystallin siRNA (m): sc-40431, α A-crystallin shRNA Plasmid (h): sc-40430-SH, α A-crystallin shRNA Plasmid (m): sc-40431-SH, α A-crystallin shRNA (h) Lentiviral Particles: sc-40430-V and α A-crystallin shRNA (m) Lentiviral Particles: sc-40431-V.

Molecular Weight of α A-crystallin: 20 kDa.

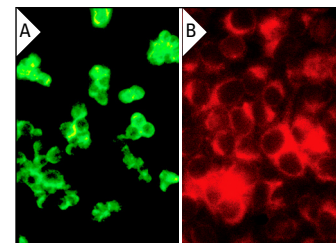
STORAGE

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

DATA



α A-crystallin (B-2): sc-28306. Near-infrared western blot analysis of α A-crystallin expression in human eye tissue extract. Blocked with UltraCruz[®] Blocking Reagent: sc-516214. Detection reagent used: m-IgGk BP-CFL 680: sc-516180.



α A-crystallin (B-2): sc-28306. Immunofluorescence staining of methanol-fixed Y79 cells showing cytoplasmic localization (A,B).

SELECT PRODUCT CITATIONS

- Wang, Y.D., et al. 2007. Comparative proteome analysis of neural retinas from type 2 diabetic rats by two-dimensional electrophoresis. *Curr. Eye Res.* 32: 891-901.
- Ren, S., et al. 2010. Physiological expression of lens α -, β -, and γ -crystallins in murine and human corneas. *Mol. Vis.* 16: 2745-2752.
- Wang, L., et al. 2011. Proteomics analysis of water insoluble-urea soluble crystallins from normal and dexamethasone exposed lens. *Mol. Vis.* 17: 3423-3436.
- Gong, H., et al. 2012. Differential response of lens crystallins and corneal crystallins in degenerative corneas. *Exp. Eye Res.* 96: 55-64.
- Anand, T., et al. 2016. Differentiation of induced pluripotent stem cells to lentoid bodies expressing a lens cell-specific fluorescent reporter. *PLoS ONE* 11: e0157570.
- Ruesam, A., et al. 2018. A specific phosphorylation regulates the protective role of α A-crystallin in diabetes. *JCI Insight* 3: e97919.
- Phadte, A.S., et al. 2019. Functional rescue of cataract-causing α A-G98R-crystallin by targeted compensatory suppressor mutations in human α A-crystallin. *Biochemistry* 58: 4148-4158.
- Rodriguez-Pozo, J.A., et al. 2020. Evaluation of myopic cornea lenticules. A histochemical and clinical correlation. *Exp. Eye Res.* 196: 108066.
- Kang, S.H., et al. 2020. Prediction-based highly sensitive CRISPR off-target validation using target-specific DNA enrichment. *Nat. Commun.* 11: 3596.
- Han, X., et al. 2021. A suite of new Dre recombinase drivers markedly expands the ability to perform intersectional genetic targeting. *Cell Stem Cell* 28: 1160-1176.e7.

RESEARCH USE

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

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