SANTA CRUZ BIOTECHNOLOGY, INC.

βB1-crystallin (H-3): sc-48335

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 comprise a superfamily. Crystallins usually contain seven distinctive protein regions, including four homologous motifs, a connecting peptide and N- and C-terminal extensions. β-crystallins constitute the major lens structural proteins, and they associate into dimers, tetramers and higher order aggregates. The β-crystallin subfamily is composed of several gene products, including βA1, βA2, βA3, βA4, βB1, βB2 and βB3-crystallin. The βA1 and βA3-crystallin proteins are encoded by a single mRNA. They differ by only 17 amino acids, and βA1-crystallin is generated by use of an alternate translation initiation site. The genes for βA4, βB1, βB2 and βB3-crystallin are clustered on human chromosome 22q11, while the genes for βA3/A1 and βA2-crystallin map to human chromosomes 17q11 and 2q34, respectively.

REFERENCES

1. Hope, J.N., et al. 1994. βA3/A1-crystallin association: role of the N-terminal arm. Protein Eng. 7: 445-451.
2. Hejtmancik, J.F., et al. 1997. Association properties of βB2- and βA3-crystallin: ability to form dimers. Protein Eng. 10: 1347-1352.
3. Werten, P.J., et al. 1999. The short 5' untranslated region of the βA3/A1-crystallin mRNA is responsible for leaky ribosomal scanning. Mol. Biol. Rep. 26: 201-205.
4. Evans, P., et al. 2004. The P23T cataract mutation causes loss of solubility of folded γD-crystallin. J. Mol. Biol. 343: 435-444.
5. Gangalum, R.K., et al. 2004. Small heat shock protein αB-crystallin is part of cell cycle-dependent Golgi reorganization. J. Biol. Chem. 279: 43374-43377.

CHROMOSOMAL LOCATION

Genetic locus: CRYBB1 (human) mapping to 22q12.1; Crybb1 (mouse) mapping to 5 F.

SOURCE

βB-1crystallin (H-3) is a mouse monoclonal antibody raised against amino acids 1-252 representing full length βB1-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.

βB-1crystallin (H-3) is available conjugated to agarose (sc-48335 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-48335 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-48335 PE), fluorescein (sc-48335 FITC), Alexa Fluor® 488 (sc-48335 AF488), Alexa Fluor® 546 (sc-48335 AF546), Alexa Fluor® 594 (sc-48335 AF594) or Alexa Fluor® 647 (sc-48335 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-48335 AF680) or Alexa Fluor® 790 (sc-48335 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

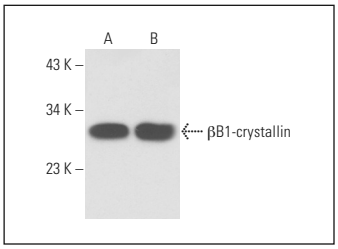
βB1-crystallin (H-3) is recommended for detection of βB1-crystallin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, 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 βB1-crystallin siRNA (h): sc-40442, βB1-crystallin siRNA (m): sc-40443, βB1-crystallin shRNA Plasmid (h): sc-40442-SH, βB1-crystallin shRNA Plasmid (m): sc-40443-SH, βB1-crystallin shRNA (h) Lentiviral Particles: sc-40442-V and βB1-crystallin shRNA (m) Lentiviral Particles: sc-40443-V.

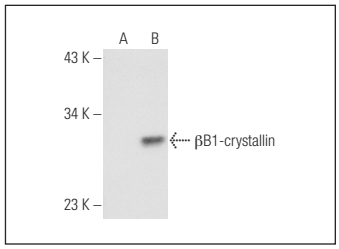
Molecular Weight of β-crystallin: 29 kDa.

Positive Controls: βB1-crystallin (h): 293T Lysate: sc-115374, rat eye extract: sc-364805 or mouse eye extract: sc-364241.

DATA



βB1-crystallin (H-3): sc-48335. Western blot analysis of βB1-crystallin expression in mouse (**A**) and rat (**B**) eye tissue extracts.



βB1-crystallin (H-3): sc-48335. Western blot analysis of βB1-crystallin expression in non-transfected: sc-117752 (**A**) and human βB1-crystallin transfected: sc-115374 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Lin, H., et al. 2016. Lens regeneration using endogenous stem cells with gain of visual function. Nature 531: 323-328.
2. Jara, O., et al. 2020. p62/sequestosome 1 levels increase and phosphorylation is altered in Cx50D47A lenses, but deletion of p62/sequestosome 1 does not improve transparency. Mol. Vis. 26: 204-215.
3. Liu, C., et al. 2021. Involvement of increased endoplasmic reticulum stress in the development of cataracts in BALB.NCT-Cpox^{nct} mice. Exp. Eye Res. 215: 108905.

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.