SANTA CRUZ BIOTECHNOLOGY, INC.

p-αB-crystallin (F-1): sc-365884

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 distinctive 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). They are induced by heat shock, and act as molecular chaperones by holding denatured proteins in large soluble aggregates. However, unlike other mole-cular chaperones, α-crystallins do not renature these proteins. The gene encoding human αA-crystallin maps to chromosome 21q22. It is expressed as a 20 kDa protein that is preferentially restricted to the lens. Defects in this gene cause autosomal dominant congenital cataract (ADCC). The human αB-crystallin gene maps to chromosome 11q22, and encodes a 22 kDa protein that is present 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 cosegregated in a family with a desmin-related myopathy. The p38 MAPK substrate, MAPKAPK-2 phosphorylates αB-crystalling on Ser 59.

REFERENCES

1. Neufer, 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.
3. Haley, D.A., et al. 1998. The small heat-shock protein, αB-crystallin, has a variable quaternary structure. J. Mol. Biol. 277: 27-35.

CHROMOSOMAL LOCATION

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

SOURCE

p-αB-crystallin (F-1) is a mouse monoclonal antibody epitope corresponding to a short amino acid sequence containing Ser 59 phosphorylated αB-crystallin of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365884 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

p-αB-crystallin (F-1) is recommended for detection of Se 59 phosphorylated 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.

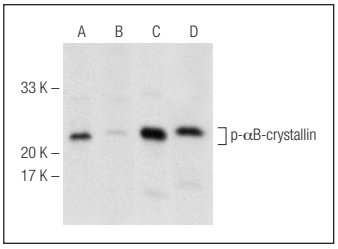
Molecular Weight of p-αB-crystallin: 20 kDa.

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

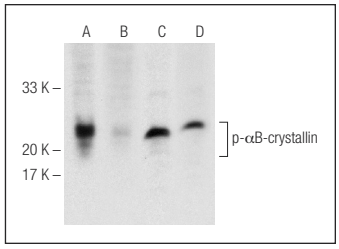
RECOMMENDED SUPPORT REAGENTS

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, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A 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



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



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

SELECT PRODUCT CITATIONS

1. Flaherty, R.A., et al. 2019. Modulation of death and inflammatory signaling in decidual stromal cells following exposure to group B *streptococcus*. Infect. Immun. 87: e00729-19.

RESEARCH USE

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