SANTA CRUZ BIOTECHNOLOGY, INC.

αA-crystallin (FL-173): sc-22743

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, 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 molecular chaperones, α-crystallins do not renature these proteins. Expression of αA-crystallin is restricted to the lens. Defects in this gene cause autosomal dominant congenital cataracts (ADCC). The human αB-crystallin gene product is expressed 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 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

αA-crystallin (FL-173) is a rabbit polyclonal antibody raised against amino acids 1-173 representing full length αA-crystallin of human origin.

PRODUCT

Each vial contains 200 µg IgG 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

αA-crystallin (FL-173) is recommended for detection of αA-crystallin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

αA-crystallin (FL-173) is also recommended for detection of αA-crystallin in additional species, including equine, canine, bovine and porcine.

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

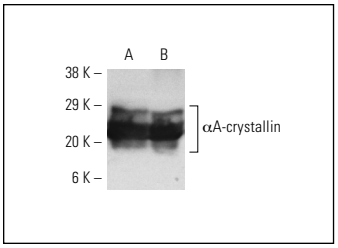
Molecular Weight of αA-crystallin: 20 kDa.

Positive Controls: Y79 cell lysate: sc-2240, mouse eye extract: sc-364241 or rat eye extract: sc-364805.

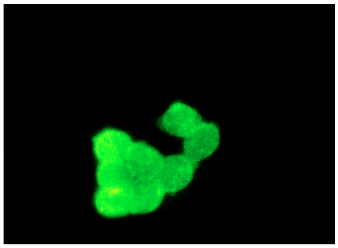
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



αA-crystallin (FL-173): sc-22743. Western blot analysis of αA-crystallin expression in mouse eye (**A**) and rat eye (**B**) tissue extracts.



αA-crystallin (FL-173): sc-22743. Immunofluorescence staining of methanol-fixed Y79 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Wolf, L., et al. 2008. Transcriptional regulation of mouse αA-crystallin gene in a 148kb Cryaa BAC and its derivates. BMC Dev. Biol. 8: 88.
2. Lee, M.J., et al. 2009. Characteristics of ethylnitrosourea-induced cataracts. Curr. Eye Res. 34: 360-368.
3. Yang, C., et al. 2010. Efficient generation of lens progenitor cells and lentoid bodies from human embryonic stem cells in chemically defined conditions. FASEB J. 24: 3274-3283.
4. Chen, P., et al. 2015. Treatment with retinoic acid and lens epithelial cell-conditioned medium *in vitro* directed the differentiation of pluripotent stem cells towards corneal endothelial cell-like cells. Exp. Ther. Med. 9: 351-360.

STORAGE

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