

α B-crystallin (2E8): sc-53919

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, 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. The gene encoding human α A-crystallin maps to chromosome 21q22. It is expressed as a protein that is preferentially restricted to the lens. Defects in this gene cause autosomal dominant congenital cataract (ADCC). The human α B-crystallin gene maps to chromosome 11q22 and encodes a protein that is present 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

- 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.
- 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.
- Haley, D.A., et al. 1998. The small heat shock protein, α B-crystallin, has a variable quaternary structure. *J. Mol. Biol.* 277: 27-35.
- Bova, M.P., et al. 1999. Mutation R120G in α B-crystallin, which is linked to a Desmin-related myopathy, results in an irregular structure and defective chaperone-like function. *Proc. Natl. Acad. Sci. USA* 96: 6137-6142.
- Wang, K., et al. 2000. α -crystallin prevents irreversible protein denaturation and acts cooperatively with other heat shock proteins to renature the stabilized partially denatured protein in an ATP-dependent manner. *Eur. J. Biochem.* 267: 4705-4712.
- Jaenicke, R., et al. 2001. Lens crystallins and their microbial homologs: structure, stability and function. *Crit. Rev. Biochem. Mol. Biol.* 36: 435-499.
- Narberhaus, F. 2002. α -crystallin-type heat shock proteins: socializing minichaperones in the context of a multichaperone network. *Microbiol. Mol. Biol. Rev.* 66: 64-93.
- LocusLink Report (LocusID: 1409). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: CRYAB (human) mapping to 11q22.3-q23.1; Cryab (mouse) mapping to 9 A5.3.

RESEARCH USE

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

SOURCE

α B-crystallin (2E8) is a mouse monoclonal antibody raised against amino acids 1-175 of α B-crystallin of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

α B-crystallin (2E8) is recommended for detection of α B-crystallin of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

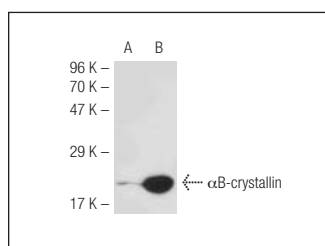
Suitable for use as control antibody for α B-crystallin siRNA (h): sc-40432, α B-crystallin shRNA Plasmid (h): sc-40432-SH and α B-crystallin shRNA (h) Lentiviral Particles: sc-40432-V.

Molecular Weight of α B-crystallin: 23.5 kDa.

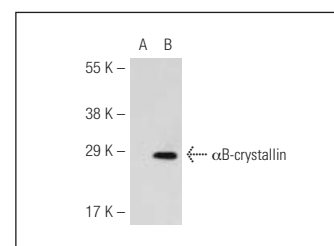
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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).

DATA



α B-crystallin (2E8): sc-53919. Western blot analysis of α B-crystallin expression in non-transfected: sc-117752 (A) and mouse α B-crystallin: sc-118149 (B) 293T whole cell lysates.



α B-crystallin (2E8): sc-53919. Western blot analysis of α B-crystallin expression in non-transfected: sc-117752 (A) and human α B-crystallin transfected: sc-159467 (B) 293T whole cell lysates.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.