

α B-crystallin (h3): 293T Lysate: sc-159351

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). α -crystallins 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 and defects of this gene cause the development of 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.

REFERENCES

1. Neuffer, P.D. and Benjamin, I.J. 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., Kramer, P., LaMorticella, D.M., Murphey, W., Lovrien, E.W. and Weleber, R.G. 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., Horwitz, J. and Stewart, P.L. 1998. The small heat shock protein, α B-crystallin, has a variable quaternary structure. *J. Mol. Biol.* 277: 27-35.
4. Bova, M.P., Yaron, O., Huang, Q., Ding, L., Haley, D.A., Stewart, P.L. and Horwitz, J. 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.
5. Wang, K. and Spector, A. 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.
6. Jaenicke, R. and Slingsby, C. 2001. Lens crystallins and their microbial homologs: structure, stability and function. *Crit. Rev. Biochem. Mol. Biol.* 36: 435-499.
7. 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.
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STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: CRYAB (human) mapping to 11q23.1.

PRODUCT

α B-crystallin (h3): 293T Lysate represents a lysate of human α B-crystallin transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

α B-crystallin (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive α B-crystallin antibodies. Recommended use: 10-20 μ l per lane.

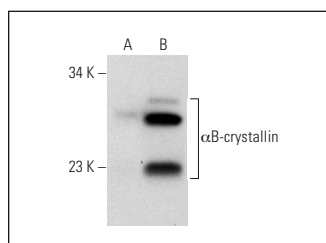
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

α B-crystallin (C-8): sc-137144 is recommended as a positive control antibody for Western Blot analysis of enhanced human α B-crystallin expression in α B-crystallin transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

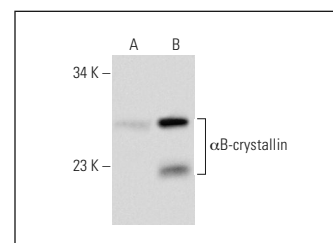
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



α B-crystallin (C-8): sc-137144. Western blot analysis of α B-crystallin expression in non-transfected: sc-117752 (A) and human α B-crystallin transfected: sc-159351 (B) 293T whole cell lysates.



α B-crystallin (F-10): sc-137129. Western blot analysis of α B-crystallin expression in non-transfected: sc-117752 (A) and human α B-crystallin transfected: sc-159351 (B) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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