



γ A-crystallin (Y-13): sc-82606

BACKGROUND

Crystallins, the major proteins of the vertebrate eye lens, are responsible for maintaining the transparency and the refractive index of the lens. Crystallins are divided into α , β and γ families, all of which usually contain seven distinctive protein regions, including four homologous motifs, one connecting peptide, and N- and C-terminal extensions. The γ -crystallin family is comprised of seven closely related proteins designated γ A-, γ B-, γ C-, γ D-, γ E-, γ F- and γ G-crystallin. γ A-crystallin, also known as CRYGA, CRYG5 or CRYG1, is a 174 amino acid member of the γ -crystallin family. Functioning as a monomer that has a two-domain β fold, γ A-crystallin, like other members of its family, plays a key role in ensuring the proper structure of the vertebrate eye lens. Defects in the gene encoding γ A-crystallin are associated with the formation of cataracts which are characterized by a clouding of the crystalline lens of the eye.

REFERENCES

1. Brakenhoff, R.H., Aarts, H.J., Reek, F.H., Lubsen, N.H. and Schoenmakers, J.G., 1990. Human γ -crystallin genes. A gene family on its way to extinction. *J. Mol. Biol.* 216: 519-532.
2. Hearne, C.M. and Todd, J.A., 1991. Trinucleotide repeat polymorphism at the CRYG1 locus. *Nucleic Acids Res.* 19: 5450.
3. Rogaev, E.I., Rogaeva, E.A., Korovaitseva, G.I., Farrer, L.A., Petrin, A.N., Keryanov, S.A., Turaeva, S., Chumakov, I., St George-Hyslop, P. and Ginter, E.K. 1996. Linkage of polymorphic congenital cataract to the γ -crystallin gene locus on human chromosome 2q33-35. *Hum. Mol. Genet.* 5: 699-703.
4. Graw, J., 1997. The crystallins: genes, proteins and diseases. *Biol. Chem.* 378: 1331-1348.
5. Stöger, T., Augusteyn, R.C. and Graw, J. 1997. The Cryner element in the murine γ -crystallin promoters interacts with lens proteins. *Ophthalmic Res.* 29: 161-171.
6. Slingsby, C. and Clout, N.J., 1999. Structure of the crystallins. *Eye* 13: 395-402.
7. Santhiya, S.T., Shyam Manohar, M., Rawlley, D., Vijayalakshmi, P., Namperumalsamy, P., Gopinath, P.M., Löster, J. and Graw, J., 2002. Novel mutations in the γ -crystallin genes cause autosomal dominant congenital cataracts. *J. Med. Genet.* 39: 352-358.
8. Salim, A. and Zaidi, Z.H., 2003. Homology models of human γ -crystallins: structural study of the extensive charge network in γ -crystallins. *Biochem. Biophys. Res. Commun.* 300: 624-630.
9. Messina-Baas, O.M., Gonzalez-Huerta, L.M. and Cuevas-Covarrubias, S.A., 2006. Two affected siblings with nuclear cataract associated with a novel missense mutation in the CRYGD gene. *Mol. Vis.* 12: 995-1000.

CHROMOSOMAL LOCATION

Genetic locus: Cryga (mouse) mapping to 1 C2.

STORAGE

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

SOURCE

γ A-crystallin (Y-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of A-crystallin of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-82606 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

γ A-crystallin (Y-13) is recommended for detection of A-crystallin of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 γ A-crystallin siRNA (m): sc-40451, γ A-crystallin shRNA Plasmid (m): sc-40451-SH and γ A-crystallin shRNA (m) Lentiviral Particles: sc-40451-V.

Molecular Weight of γ A-crystallin: 21 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

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