SANTA CRUZ BIOTECHNOLOGY, INC.

Phakinin (D-7): sc-390848

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Phakinin, also known as BFSP2 (beaded filament structural protein 2), CP47, CP49 (lens fiber beaded filament protein CP49) or LIFL-L (lens intermediate filament-like light), is a membrane-associated and cytoskeletal intermediate filament (IF) protein specific to the eye lens. IFs are cytoskeletal structures that typically contain a head, rod and tail domain. Unlike most IFs, Phakinin completely lacks the C-terminal tail domain thus contributing to the unique structure of the beaded filament that is specific to the lens. Phakinin is required for the assembly of beaded filaments and cytoskeletal networks that are important for the long-term maintenance of optical properties and transparency of the lens. Phakinin copolymerizes with Filensin, another IF protein, to form the 10-nm filamentous structures of the beaded filaments. Phakinin is also capable of self-assembling into filament-like structures that form thicker bundles. Mutations in the gene encoding Phakinin can result in lens cataract.

REFERENCES

1. Jakobs, P.M., et al. 2000. Autosomal-dominant congenital cataract associated with a deletion mutation in the human beaded filament protein gene BFSP2. Am. J. Hum. Genet. 66: 1432-1436.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603212. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Sandilands, A., et al. 2003. Knockout of the intermediate filament protein CP49 destabilises the lens fibre cell cytoskeleton and decreases lens optical quality, but does not induce cataract. Exp. Eye Res. 76: 385-391.

CHROMOSOMAL LOCATION

Genetic locus: Bfsp2 (mouse) mapping to 9 F1.

SOURCE

Phakinin (D-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 319-340 within an internal region of Phakinin of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Phakinin (D-7) is available conjugated to agarose (sc-390848 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390848 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390848 PE), fluorescein (sc-390848 FITC), Alexa Fluor® 488 (sc-390848 AF488), Alexa Fluor® 546 (sc-390848 AF546), Alexa Fluor® 594 (sc-390848 AF594) or Alexa Fluor® 647 (sc-390848 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390848 AF680) or Alexa Fluor® 790 (sc-390848 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390848 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

Phakinin (D-7) is recommended for detection of Phakinin of mouse and rat 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 Phakinin siRNA (m): sc-62795, Phakinin shRNA Plasmid (m): sc-62795-SH and Phakinin shRNA (m) Lentiviral Particles: sc-62795-V.

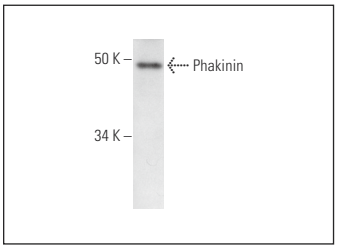
Molecular Weight of Phakinin: 46 kDa.

Positive Controls: mouse eye extract: sc-364241.

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, UltraCruz® Blocking Reagent: sc-516214 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



Phakinin (D-7): sc-390848. Western blot analysis of Phakinin expression in mouse eye tissue extract.

STORAGE

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

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.