SANTA CRUZ BIOTECHNOLOGY, INC.

Phakinin (T-19): sc-67764

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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 10nm 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

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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.
4. Sandilands, A., et al. 2004. Bfsp2 mutation found in mouse 129 strains causes the loss of CP49' and induces Vimentin-dependent changes in the lens fibre cell cytoskeleton. Exp. Eye Res. 78: 875-889.
5. Alizadeh, A., et al. 2004. Characterization of a mutation in the lens-specific CP49 in the 129 strain of mouse. Invest. Ophthalmol. Vis. Sci. 45: 884-891.
6. Hoehenwarter, W., et al. 2005. Eye lens proteomics: from global approach to detailed information about Phakinin and γ E and F crystallin genes. Proteomics 5: 245-257.
7. Lindsey Rose, K.M., et al. 2006. The C-terminus of lens aquaporin 0 interacts with the cytoskeletal proteins filensin and CP49. Invest. Ophthalmol. Vis. Sci. 47: 1562-1570.
8. Perng, M.D., et al. 2007. Insights into the beaded filament of the eye lens. Exp. Cell Res. 313: 2180-2188.
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CHROMOSOMAL LOCATION

Genetic locus: BFSP2 (human) mapping to 3q21-q25.

SOURCE

Phakinin (T-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Phakinin 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.

Blocking peptide available for competition studies, sc-67764 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Phakinin (T-19) is recommended for detection of Phakinin of human 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 Phakinin siRNA (h): sc-62794.

Molecular Weight of Phakinin: 46 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.

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 or our catalog for detailed protocols and support products.