

▶ Phd (C-20): sc-18415

BACKGROUND

Phosducin is a phototransducing protein that may participate in the feedback regulation of visual phototransduction or in the integration of photoreceptor metabolism. The human phosducin gene maps to chromosome 1q31.1 and encodes a 246 amino acid protein, also designated Phd. Phosducin is primarily expressed in the retina and the pineal gland, while lower levels are present in tissues such as liver, spleen, striated muscle and the brain. Retinal phosducin is found exclusively in the outer and inner segments of photoreceptor cells, including the synaptic and nuclear layers. Phosducin modulates the phototransduction cascade through high affinity binding and sequestration of $G_{\beta\gamma}$ subunits of heterotrimeric G proteins. Neutralization of $G_{\beta\gamma}$ by phosducin inhibits G protein-mediated signaling, since G_{α} is unable to reassemble with $G_{\beta\gamma}$ and provide a functional G protein trimer ($G_{\alpha\beta\gamma}$). In addition, phosducin can effectively slow down the mechanism of internalization of G protein-coupled opioid receptors.

REFERENCES

- Ding, C., Li, X., Griffin, C.A., Jabs, E.W., Hawkins, A.L. and Levine, M.A. 1993. The gene for human phosducin (PDC), a soluble protein that binds G protein $\beta\gamma$ dimers, maps to 1q25-q31.1. *Genomics* 18: 457-459.
- Thulin, C.D., Howes, K., Driscoll, C.D., Savage, J.R., Rand, T.A., Baehr, W. and Willardson, B.M. 1999. The immunolocalization and divergent roles of phosducin and phosducin-like protein in the retina. *Mol. Vis.* 5: 40.
- Savage, J.R., McLaughlin, J.N., Skiba, N.P., Hamm, H.E. and Willardson, B.M. 2000. Functional roles of the two domains of phosducin and phosducin-like protein. *J. Biol. Chem.* 275: 30399-30407.
- Online Mendelian Inheritance in Man, OMIM[™]. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 171490. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Schulz, R. 2001. The pharmacology of phosducin. *Pharmacol. Res.* 43: 1-10.
- LocusLink Report (LocusID: 5132). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: PDC (human) mapping to 1q31.1; Pdc (mouse) mapping to 1 G1.

SOURCE

Phd (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Phd of human 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-18415 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

Phd (C-20) is recommended for detection of Phd of mouse, rat and 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).

Phd (C-20) is also recommended for detection of Phd in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Phd siRNA (h): sc-40839, Phd siRNA (m): sc-40840, Phd shRNA Plasmid (h): sc-40839-SH, Phd shRNA Plasmid (m): sc-40840-SH, Phd shRNA (h) Lentiviral Particles: sc-40839-V and Phd shRNA (m) Lentiviral Particles: sc-40840-V.

Molecular Weight of Phd: 33 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.