

Phd (G-7): sc-271769

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.
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CHROMOSOMAL LOCATION

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

SOURCE

Phd (G-7) is a mouse monoclonal antibody raised against amino acids 31-140 mapping within an internal region of Phosducin (Phd) of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

APPLICATIONS

Phd (G-7) is recommended for detection of Phd of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 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.

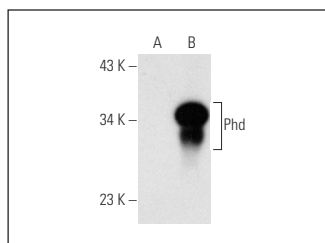
Molecular Weight of Phd: 33 kDa.

Positive Controls: Phd (m2): 293T Lysate: sc-122529, mouse eye extract: sc-364241 or rat eye extract: sc-364805.

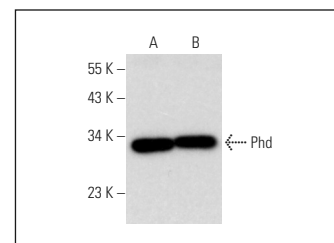
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



Phd (G-7): sc-271769. Western blot analysis of Phd expression in non-transfected: sc-117752 (A) and mouse Phd transfected: sc-122529 (B) 293T whole cell lysates.



Phd (G-7): sc-271769. Western blot analysis of Phd expression in mouse eye (A) and rat eye (B) tissue extracts.

SELECT PRODUCT CITATIONS

- Pearring, J.N., San Agustin, J.T., Lobanova, E.S., Gabriel, C.J., Lieu, E.C., Monis, W.J., Stuck, M.W., Strittmatter, L., Jaber, S.M., Arshavsky, V.Y. and Pazour, G.J. 2017. Loss of Arf4 causes severe degeneration of the exocrine pancreas but not cystic kidney disease or retinal degeneration. *PLoS Genet.* 13: e1006740.

PROTOCOLS

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