SANTA CRUZ BIOTECHNOLOGY, INC.

Phd (E-1): sc-398752

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. Phd 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 Phd is found exclusively in the outer and inner segments of photoreceptor cells, including the synaptic and nuclear layers. Phd 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

1. Ding, C., et al. 1993. The gene for human phosducin (PDC), a soluble protein that binds G protein β γ dimers, maps to 1q25-q31.1. Genomics 18: 457-459.
2. Thulin, C.D., et al. 1999. The immunolocalization and divergent roles of phosducin and phosducin-like protein in the retina. Mol. Vis. 5: 40.
3. Savage, J.R., et al. 2000. Functional roles of the two domains of phosducin and phosducin-like protein. J. Biol. Chem. 275: 30399-30407.
4. 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/

CHROMOSOMAL LOCATION

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

SOURCE

Phd (E-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 45-66 near the N-terminus of Phd of human origin.

PRODUCT

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

Phd (E-1) is available conjugated to agarose (sc-398752 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398752 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398752 PE), fluorescein (sc-398752 FITC), Alexa Fluor® 488 (sc-398752 AF488), Alexa Fluor® 546 (sc-398752 AF546), Alexa Fluor® 594 (sc-398752 AF594) or Alexa Fluor® 647 (sc-398752 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398752 AF680) or Alexa Fluor® 790 (sc-398752 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398752 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Phd (E-1) 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 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 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.

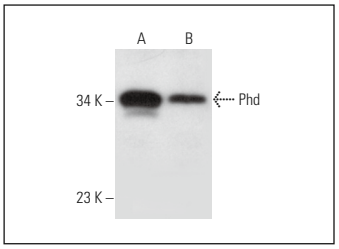
Molecular Weight of Phd: 33 kDa.

Positive Controls: rat eye extract: sc-364805 or mouse eye extract: sc-364241.

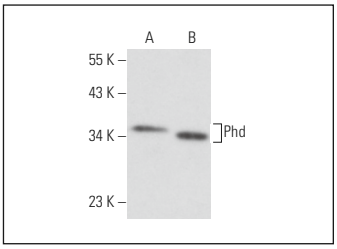
RECOMMENDED SUPPORT REAGENTS

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



Phd (E-1): sc-398752. Western blot analysis of Phd expression in rat eye (**A**) and mouse eye (**B**) tissue extracts.



Phd (E-1): sc-398752. Western blot analysis of Phd expression in rat eye (**A**) and mouse eye (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Chidlow, G., et al. 2022. Investigations into photoreceptor energy metabolism during experimental retinal detachment. Front. Cell. Neurosci. 16: 1036834.

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.