

# RPE65 (3D9): sc-73616

## BACKGROUND

The retinal pigment epithelium (RPE) is a monolayer simple epithelium in proximity to the outer surface of the retinal photoreceptor cells. Retinal pigment epithelium-specific protein (RPE65) is a 65 kDa protein belonging to the  $\beta$ -carotene dioxygenase family. It is important in 11-*cis* retinal production as well as in visual pigment regeneration. RPE65 is attached to the membrane by a lipid anchor when palmitoylated (membrane form) and is soluble when unpalmitoylated. The soluble form of the protein binds vitamin A. Defects in RPE65 cause autosomal dominant retinitis pigmentosa and/or Leber congenital amaurosis type 2.

## REFERENCES

- Hamel, C.P., et al. 1993. Molecular cloning and expression of RPE65, a novel retinal pigment epithelium-specific microsomal protein that is post-transcriptionally regulated *in vitro*. *J. Biol. Chem.* 268: 15751-15757.
- Hamel, C.P., et al. 1994. The gene for the retinal pigment epithelium-specific protein RPE65 is localized to human 1p31 and mouse 3. *Genomics* 20: 509-512.
- Morimura, H., et al. 1998. Mutations in the RPE65 gene in patients with autosomal recessive retinitis pigmentosa or Leber congenital amaurosis. *Proc. Natl. Acad. Sci. USA* 95: 3088-3093.

## CHROMOSOMAL LOCATION

Genetic locus: RPE65 (human) mapping to 1p31.3; Rpe65 (mouse) mapping to 3 H4.

## SOURCE

RPE65 (3D9) is a mouse monoclonal antibody raised against RPE microsomal membranes of bovine origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

RPE65 (3D9) is recommended for detection of RPE65 of mouse, rat, human and *Xenopus laevis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RPE65 (3D9) is also recommended for detection of RPE65 in additional species, including bovine.

Suitable for use as control antibody for RPE65 siRNA (h): sc-44898, RPE65 siRNA (m): sc-44899, RPE65 shRNA Plasmid (h): sc-44898-SH, RPE65 shRNA Plasmid (m): sc-44899-SH, RPE65 shRNA (h) Lentiviral Particles: sc-44898-V and RPE65 shRNA (m) Lentiviral Particles: sc-44899-V.

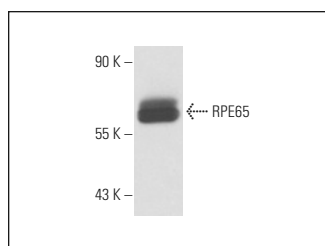
Molecular Weight of RPE65: 65 kDa.

Positive Controls: mouse eye extract: sc-364241 or human eye extract: sc-364223.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



RPE65 (3D9): sc-73616. Western blot analysis of RPE65 expression in mouse eye tissue extract.

## SELECT PRODUCT CITATIONS

- Lv, J., et al. 2017. Cdc42 regulates LPS-induced proliferation of primary pulmonary microvascular endothelial cells via ERK pathway. *Microvasc. Res.* 109: 45-53.
- Qi, X., et al. 2017. Systemic injection of RPE65-programmed bone marrow-derived cells prevents progression of chronic retinal degeneration. *Mol. Ther.* 25: 917-927.
- Jo, D.H., et al. 2019. CRISPR-Cas9-mediated therapeutic editing of Rpe65 ameliorates the disease phenotypes in a mouse model of Leber congenital amaurosis. *Sci. Adv.* 5: eaax1210.
- Hood, E.M.S., et al. 2022. Isolation, culture, and cryosectioning of primary porcine retinal pigment epithelium on transwell cell culture inserts. *STAR Protoc.* 3: 101758.

## 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](http://www.scbt.com) for detailed protocols and support products.