

# ABCA4 (3F4): sc-65672

## BACKGROUND

The ATP-binding cassette (ABC) superfamily is comprised of transmembrane proteins involved in energy-dependent transport of a variety of substrates across membranes. ABCA4 (also designated ABCR, photoreceptor RIM or RMP) is a photoreceptor specific ATP-binding cassette (ABC) transporter. ABCA4 is exclusively expressed within photoreceptor cells, indicating that ABCA4 mediates the transport of an essential molecule either into or out of photoreceptor cells. Mutations in the gene encoding ABCA4 are responsible for autosomal recessive Stargardt disease (STGD), an early onset macular degeneration, and some forms of autosomal recessive cone-rod dystrophy and autosomal recessive retinitis pigmentosa. In addition, heterozygosity for ABCA4 mutations may possess a risk factor for age-related macular degeneration. ABCA4 is most closely related to the mouse and human ABC1 and ABC2 and maps to human chromosome 1p22.1.

## CHROMOSOMAL LOCATION

Genetic locus: ABCA4 (human) mapping to 1p22.1; Abca4 (mouse) mapping to 3 G1.

## SOURCE

ABCA4 (3F4) is a mouse monoclonal antibody raised against the 220-kDa ABCA4 protein of bovine origin.

## PRODUCT

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

ABCA4 (3F4) is available conjugated to agarose (sc-65672 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to either phycoerythrin (sc-65672 PE), fluorescein (sc-65672 FITC), Alexa Fluor® 488 (sc-65672 AF488), Alexa Fluor® 546 (sc-65672 AF546), Alexa Fluor® 594 (sc-65672 AF594) or Alexa Fluor® 647 (sc-65672 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-65672 AF680) or Alexa Fluor® 790 (sc-65672 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

ABCA4 (3F4) is recommended for detection of ABCA4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

ABCA4 (3F4) is also recommended for detection of ABCA4 in additional species, including bovine.

Suitable for use as control antibody for ABCA4 siRNA (h): sc-41140, ABCA4 siRNA (m): sc-41141, ABCA4 shRNA Plasmid (h): sc-41140-SH, ABCA4 shRNA Plasmid (m): sc-41141-SH, ABCA4 shRNA (h) Lentiviral Particles: sc-41140-V and ABCA4 shRNA (m) Lentiviral Particles: sc-41141-V.

Molecular Weight of ABCA4: 220 kDa.

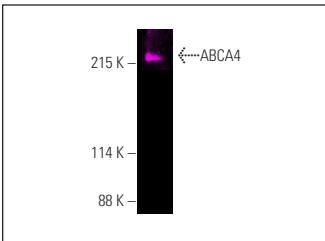
Positive Controls: mouse eye extract: sc-364241, Y79 cell lysate: sc-2240 or human eye extract: sc-364223.

## RECOMMENDED SUPPORT REAGENTS

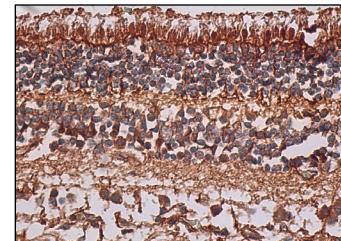
To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgG<sub>κ</sub> BP-HRP: sc-516102 or m-IgG<sub>κ</sub> 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<sub>κ</sub> BP-FITC: sc-516140 or m-IgG<sub>κ</sub> BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.
- 4) Immunohistochemistry: use m-IgG<sub>κ</sub> BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



ABCA4 (3F4) Alexa Fluor® 546: sc-65672 AF546. Direct fluorescent western blot analysis of ABCA4 expression in mouse eye tissue extract. Blocked with UltraCruz® Blocking Reagent: sc-516214.



ABCA4 (3F4): sc-65672. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fetal eye tissue showing membrane and cytoplasmic staining of cells in retina. Notice the intense staining of the rod outer segment layer.

## SELECT PRODUCT CITATIONS

1. Sabirzhanova, I., et al. 2015. Rescuing trafficking mutants of the ATP-binding cassette protein, ABCA4, with small molecule correctors as a treatment for stargardt eye disease. *J. Biol. Chem.* 290: 19743-19755.
2. Aukrust, I., et al. 2017. The intronic ABCA4 c.5461-10T>C variant, frequently seen in patients with stargardt disease, causes splice defects and reduced ABCA4 protein level. *Acta Ophthalmol.* 95: 240-246.
3. Sun, D., et al. 2022. Effective gene therapy of Stargardt disease with PEG-ECO/pGRK1-ABCA4-S/MAR nanoparticles. *Mol. Ther. Nucleic Acids* 29: 823-835.

## 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.

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