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Datasheet for 200-301-D05

ABCA4 Rim Protein Antibody

Overview

Description:	Anti-ABCA4 (Rim Protein) (MOUSE) Monoclonal Antibody - 200-301-D05
Item No.:	200-301-D05
Size:	100 µL
Applications:	IHC, WB, IF
Reactivity:	Human, Mouse, Bovine, Xenopus
Host Species:	Mouse

Product Details

Background:	ABCA4 antibody detects ABCA4 (ATP-binding cassette, sub-family A (ABC1), member 4, Rim Protein) a member of the superfamily of ATP-binding cassette (ABC) transporters. ABC proteins transport various molecules across extra- and intracellular membranes. ABCA4 is a retina-specific ABC transporter with N-retinylidene-PE as a substrate. It is expressed exclusively in retina photoreceptor cells, indicating the gene product mediates transport of an essential molecule across the photoreceptor cell membrane. Mutations in this gene are found in patients diagnosed with Stargardt disease and are associated with retinitis pigmentosa-19 and age-related macular degeneration. Defects in ABCA4 are the cause of Stargardt disease type 1 (STGD1). STGD is one of the most frequent causes of macular degeneration in childhood. Defects in ABCA4 are also known to cause fundus flavimaculatus (FFM), age-related macular degeneration type 2 (ARMD2) and cone-rod dystrophy type 3 (CORD3). Anti-ABCA4 antibody is ideal for investigators involved in Cell Signaling, Neuroscience, Signal Transduction research.
Synonyms:	Retinal-specific ATP-binding cassette transporter, ATP-binding cassette sub-family A member 4, RIM ABC transporter
Host Species:	Mouse
Clonality:	Monoclonal
Clone ID:	3F4
Format:	IgG

Target Details

Gene Name:	ABCA4

Reactivity:	Human, Mouse, Bovine, Xenopus
Immunogen Type:	Native Protein
Immunogen:	Anti-ABCA4 antibody was produced by repeated immunizations with 220-kDa (full length) partially purified native bovine disc rim protein.
Purity/Specificity:	Anti-ABCA4 antibody is directed against bovine ABCA4 Rim Protein. The antibody was Protein G purified from culture supernatant. Reactivity is expected against human, mouse and Xenopus. Cross-reactivity with ABCA4 from other sources has not been determined.
Relevant Links:	• UniProtKB - O35600 • GeneID - 11304 • NCBI - NP_776646.1 • SDS

Application Details

Tested Applications:	IHC, WB
Suggested Applications:	IF (Based on references)
Application Note:	Anti-ABCA4 antibody has been tested by western blot and IHC and is suitable for use in ELISA. Specific conditions should be optimized by the end user. Expect a band of ~220kDa in size corresponding to ABCA4 proteins in the appropriate cell lysate or extract.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:10,000
IHC:	1:100
WB:	1:1000

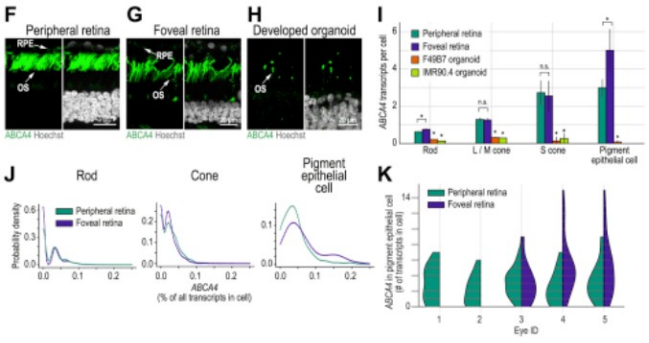
Formulation

Physical State:	Liquid
Concentration:	titrated reagent Sufficient to run approximately 10 miniblots
Buffer:	0.01 M HEPES, 0.15 M Sodium Chloride, pH 7.5
Stabilizer:	0.1 mg/ml Bovine Serum Albumin (BSA) - IgG and Protease free, 50% (v/v) Glycerol

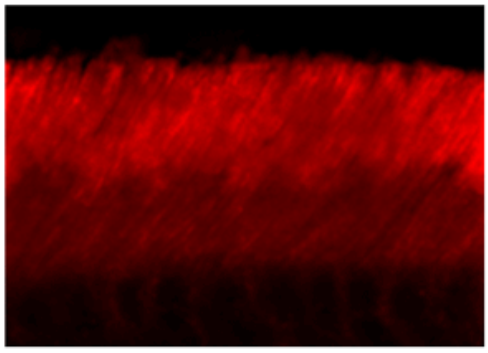
Shipping & Handling

Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C prior to opening. This product is stable at 4° C as an undiluted liquid. For extended storage, aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Dilute only prior to immediate use.
Expiration:	Expiration date is one (1) year from date of receipt.

Images



Immunofluorescence Microscopy
(F – K) Expression of Stargardt disease-associated gene ABCA4 in photoreceptors and pigment epithelial cells of the peripheral and foveal retina as well as in photoreceptors of developed organoids. (F – H) Confocal images. Green, ABCA4 antibody used in (F) peripheral retina, (G) foveal retina and (H) developed organoid; white, Hoechst (nucleus marker). OS, outer segment; RPE, retinal pigment epithelial cells. F49B7 organoid. (I) Expression level of ABCA4 within cell types and regions in adult retina and developed organoids. Legend, top left. Error bars, ± three SEM. ⍰p < 1 × 10-2 by Mann-Whitney U with Bonferroni correction. Without a bracket, ⍰ indicates significant test result versus peripheral and foveal retina. (J) Comparison of peripheral retina (green) and foveal retina (blue) ABCA4 expression levels in rods, cones, and pigment epithelial cells. Probability densities are generated using a Gaussian kernel density estimate with bandwidth set by Scott's rule. (K) Violin plots show the ABCA4 transcript counts in pigment epithelial cells. Expression is subdivided by the eye ID and region of origin. No foveal choroidal / pigment epithelial sample was available for eye IDs one and two. Eye five came from a different donor than eyes three and four.
Figure S7.
PMID: 32946783



Immunochemical staining of adult mouse retina with anti-ABCA4 antibody Photo courtesy of Mary Raven.

Immunofluorescence Microscopy
Immunohistochemistry of Anti-ABCA4 (Rim Protein) (Mouse) Antibody. Tissue: adult mouse retina. Fixation: formalin fixed paraffin embedded. Antigen retrieval: not required. Primary antibody: ABCA4 antibody at 10 µg/mL for 1 h at RT. Secondary antibody: Peroxidase mouse secondary antibody at 1:10,000 for 45 min at RT. Localization: ABCA4 is extra- and intracellular membranes. Staining: ABCA4 as precipitated red signal.

References

- Cowan CS et al. Cell types of the human retina and its organoids at single-cell resolution. *Cell.* (2020)

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