10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-ABCA4 Picoband Antibody

Catalog # ABO10138

Product Information

Application	WB
Primary Accession	P78363
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Retinal-specific ATP-binding cassette transporter(ABCA4) detection. Tested with WB in Human;Mouse;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	24
Other Names	Retinal-specific ATP-binding cassette transporter, ATP-binding cassette sub-family A member 4, RIM ABC transporter, RIM protein, RmP, Stargardt disease protein, ABCA4, ABCR
Calculated MW	255944
Application Details	Western blot, 0.1-0.5 □g/ml, Mouse, Rat, Human
Subcellular Localization	Membrane ; Multi-pass membrane protein . Localized to outer segment disk edges of rods and cones, with around one million copies/photoreceptor.
Tissue Specificity	Retinal-specific. Seems to be exclusively found in the rims of rod photoreceptor cells.
Source	Eukaryota
Protein Name	Retinal-specific ATP-binding cassette transporter
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human ABCA4 (1890-1927aa FLLTLLVQRHFFLSQWIAEPTKEPIVDEDDDVAEERQR), different from the related mouse sequence by eight amino acids.
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins.

Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.

Protein Information

Name	ABCA4 (HGNC:34)
Function	Flippase that catalyzes in an ATP-dependent manner the transport of retinal-phosphatidylethanolamine conjugates like 11-cis and all-trans isomers of N-retinylidene-phosphatidylethanolamine (N- Ret-PE) from the lumen to the cytoplasmic leaflet of photoreceptor outer segment disk membranes, where 11-cis-retinylidene- phosphatidylethanolamine is then isomerized to its all-trans isomer and reduced by RDH8 to produce all-trans-retinol. This transport activity ensures that all-trans-retinal generated from photoexcitation and 11- cis-retinal not needed for the regeneration of rhodopsin and cone opsins are effectively cleared from the photoreceptors, therefore preventing their accumulation and the formation of toxic bisretinoid (PubMed:10075733, PubMed:20404325, PubMed:22735453, PubMed:23144455, PubMed:24097981, PubMed:29847635, PubMed:33375396). Displays ATPase activity in vitro in absence of retinal substrate (PubMed:33605212, PubMed:39128720, PubMed:29847635, PubMed:33375396). May display GTPase activity that is strongly influenced by the lipid environment and the presence of retinoid compounds (PubMed:22735453). Binds the unprotonated form of N-retinylidene-phosphatidylethanolamine with high affinity in the absence of ATP, and ATP binding and hydrolysis induce a protein conformational change that causes N-retinylidene- phosphatidylethanolamine release (By similarity).
Cellular Location	Membrane; Multi- pass membrane protein. Endoplasmic reticulum. Cytoplasmic vesicle. Cell projection, cilium, photoreceptor outer segment {ECO:0000250|UniProtKB:F1MWM0}. Note=Localized to the rim and incisures of rod outer segments disks. {ECO:0000250|UniProtKB:F1MWM0}
Tissue Location	Retinal-specific. Seems to be exclusively found in the rims of rod photoreceptor cells

Background

ABCA4 (ATP-Binding Cassette, Subfamily A, Member 4), also known as ABCR, is a protein which in humans is encoded by the ABCA4 gene. ABCA4 is a member of the ATP-binding cassette transporter gene sub-family A (ABC1) found exclusively in multicellular eukaryotes. Using a whole genome radiation hybrid panel, this gene is mapped to 1p21-p13. And this gene is expressed exclusively in retina photoreceptor cells, indicating the gene product mediates transport of an essental molecule across the photoreceptor cell membrane. Additionally, it is showed by immunofluorescence microscopy and Western blot analysis that ABCR is present in foveal and peripheral cone, as well as rod, photoreceptors. The results suggested that the loss in central vision experienced by patients with Stargardt macular dystrophy arises directly from ABCR-mediated foveal cone degeneration.

Images

Western blot analysis of ABCA4 expression in rat eye extract (lane 1) and mouse eye extract (lane 2). ABCA4 at 256KD was detected using rabbit anti-ABCA4 Antigen Affinity purified polyclonal antibody (Catalog #ABO10138) at 0.5 □¼g/mL. The blot was developed using



chemiluminescence (ECL) method .

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.