Revision 3

Store at -20C

#96292

ABCA1 (E7X5G) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R	Endogenous	254	Rabbit IgG	#O95477	19

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

Specificity/Sensitivity

ABCA1 (E7X5G) Rabbit mAb recognizes endogenous levels of total ABCA1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser1262 of human ABCA1 protein.

Background

ATP-binding cassette (ABC) proteins are membrane-residing transporters that transport substrates across the membrane in an ATP-dependent manner. ABC substrates subject to active transport across the membrane include ions, amino acids, lipids, and sterols (1). ATP-Binding cassette sub-family A member 1 (ABCA1) is a member of the ABC family and functions to regulate phospholipid and cholesterol homeostasis. ABCA1, like most ABC transporters, contains two transmembrane domain bundles composed of six membrane-spanning helices and two nucleotide-binding domains. ABCA1 and its closest homolog, ABCA7, are 12A class members of ABCs, and both proteins function to transport cholesterol and phospholipids in an apolipoprotein A (apoA)-dependent manner (2,3). ABCA1 is expressed in a variety of tissues (4). Loss of function mutations in the human *ABCA1* gene are linked to Tangier disease, a disorder characterized by high density lipoprotein (HDL) deficiency and cholesterol ester buildup in macrophages, as well as increased risk of atherosclerosis, consistent with ABCA1's function in maintaining cholesterol homeostasis and HDL formation (5-8). *ABCA1* is also a candidate risk gene for late onset Alzheimer's disease (LOAD), a neurodegenerative disease that is also linked to altered cholesterol transport and metabolism (9). ABCA1 dysfunction may contribute directly to Alzheimer's disease (AD) pathogenesis by accelerating amyloid-β (Aβ) production, which is one of the pathological hallmarks of AD (9).

Background References

1. Higgins, C.F. (1992) *Annu Rev Cell Biol* 8, 67-113.
2. Abe-Dohmae, S. et al. (2004) *J Biol Chem* 279, 604-11.
3. Wang, N. et al. (2003) *J Biol Chem* 278, 42906-12.
4. Pereira, C.D. et al. (2018) *J Alzheimers Dis* 61, 463-85.
5. Brooks-Wilson, A. et al. (1999) *Nat Genet* 22, 336-45.
6. Bodzioch, M. et al. (1999) *Nat Genet* 22, 347-51.
7. Rust, S. et al. (1999) *Nat Genet* 22, 352-5.
8. Singaraja, R.R. et al. (2003) *Arterioscler Thromb Vasc Biol* 23, 1322-32.
9. Lupton, M.K. et al. (2014) *J Alzheimers Dis* 38, 897-906.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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