

# ABC1 (AC10): sc-53482

## BACKGROUND

ABC1 (for ATP binding cassette transporter 1) is a member of the family of ATP-binding cassette proteins which transport various molecules across biological membranes. ABC1 contains 2 characteristic ATP-binding domains and 12 transmembrane domains which form a channel-like structure for transport. Mutations in the ABC1 gene are implicated in Tangier disease, characterized by low serum high density lipoprotein. ABC1 is widely expressed in human tissues, with high levels of expression in liver, lung, adrenal glands, placenta and fetal tissue. ABC1 expression is induced during monocyte differentiation and upregulated in the presence of acetylated low-density lipoprotein. ABC1 may have a dual regulatory function in macrophage lipid metabolism and inflammation.

## CHROMOSOMAL LOCATION

Genetic locus: ABCA1 (human) mapping to 9q31.1; Abca1 (mouse) mapping to 4 B2.

## SOURCE

ABC1 (AC10) is a mouse monoclonal antibody raised against amino acids 1874-2261 mapping near the C-terminus of ABC1 of human 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.

ABC1 (AC10) is available conjugated to agarose (sc-53482 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53482 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53482 PE), fluorescein (sc-53482 FITC), Alexa Fluor<sup>®</sup> 488 (sc-53482 AF488), Alexa Fluor<sup>®</sup> 546 (sc-53482 AF546), Alexa Fluor<sup>®</sup> 594 (sc-53482 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-53482 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-53482 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-53482 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

ABC1 (AC10) is recommended for detection of ABC1 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for ABC1 siRNA (h): sc-41136, ABC1 siRNA (m): sc-41137, ABC1 shRNA Plasmid (h): sc-41136-SH, ABC1 shRNA Plasmid (m): sc-41137-SH, ABC1 shRNA (h) Lentiviral Particles: sc-41136-V and ABC1 shRNA (m) Lentiviral Particles: sc-41137-V.

Molecular Weight of ABC1: 220 kDa.

Positive Controls: MES-SA/Dx5 cell lysate: sc-2284.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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.

## SELECT PRODUCT CITATIONS

- Gulshan, K., et al. 2013. Sphingomyelin depletion impairs anionic phospholipid inward translocation and induces cholesterol efflux. *J. Biol. Chem.* 288: 37166-37179.
- Yan, X., et al. 2015. Coenzyme Q10 consumption promotes ABCG1-mediated macrophage cholesterol efflux: a randomized, double-blind, placebo-controlled, cross-over study in healthy volunteers. *Mol. Nutr. Food Res.* 59: 1725-1734.
- Yang, H.Y., et al. 2015. Angiotensin-(1-7) stimulates cholesterol efflux from Angiotensin II-treated cholesterol-loaded THP-1 macrophages through the suppression of p38 and c-Jun N-terminal kinase signaling. *Mol. Med. Rep.* 12: 1387-1392.
- Lin, X.L., et al. 2017. Allicin induces the upregulation of ABCA1 expression via PPARγ/LXRα signaling in THP-1 macrophage-derived foam cells. *Int. J. Mol. Med.* 39: 1452-1460.
- Xiaolong, L., et al. 2020. FGF21 induces autophagy-mediated cholesterol efflux to inhibit atherogenesis via RACK1 up-regulation. *J. Cell. Mol. Med.* 24: 4992-5006.
- Wang, Y., et al. 2021. Polybrominated diphenyl ether quinone exposure induces atherosclerosis progression via CD36-mediated lipid accumulation, NLRP3 inflammasome activation, and pyroptosis. *Chem. Res. Toxicol.* 34: 2125-2134.
- Duan, J., et al. 2022. Multifaceted protective effects of hesperidin by aromatic hydrocarbon receptor in endothelial cell injury induced by benzo[a]pyrene. *Nutrients* 14: 574.
- Tan, W.H., et al. 2022. CTRP15 promotes macrophage cholesterol efflux and attenuates atherosclerosis by increasing the expression of ABCA1. *J. Physiol. Biochem.* 78: 653-666.
- Gabanella, F., et al. 2023. SMN deficiency destabilizes ABCA1 expression in human fibroblasts: novel insights in pathophysiology of spinal muscular atrophy. *Int. J. Mol. Sci.* 24: 2916.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.