

ARF1 (ARFS 1A9/5): sc-53168

BACKGROUND

ADP-ribosylation factors (ARFs) are small guanine nucleotide-binding proteins that enhance the enzymatic activities of cholera toxin and constitute one family of the RAS superfamily. ARFs are essential and ubiquitous in eukaryotes, as they are involved in vesicular transport and functioning via phospholipase D activation. ARF proteins play a role in membrane traffic and organelle integrity and are intimately tied to their reversible association with membranes and distinct interactions with membrane phospholipids. ARF1 is regulated by the binding and hydrolysis of GTP. Coatamer, or COPI, is a heptameric protein recruited to membranes by ARF1. Research demonstrates that guanine nucleotide exchange-activated ARF1, when located at the Golgi membrane, recruits and binds cytoplasmic COPI to the membranes.

CHROMOSOMAL LOCATION

Genetic locus: ARF1 (human) mapping to 1q42.13; Arf1 (mouse) mapping to 11 B1.3.

SOURCE

ARF1 (ARFS 1A9/5) is a mouse monoclonal antibody raised against amino acids 174-180 of ARF1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ARF1 (ARFS 1A9/5) is available conjugated to agarose (sc-53168 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53168 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53168 PE), fluorescein (sc-53168 FITC), Alexa Fluor® 488 (sc-53168 AF488), Alexa Fluor® 546 (sc-53168 AF546), Alexa Fluor® 594 (sc-53168 AF594) or Alexa Fluor® 647 (sc-53168 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53168 AF680) or Alexa Fluor® 790 (sc-53168 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

ARF1 (ARFS 1A9/5) is recommended for detection of ARF1 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).

Suitable for use as control antibody for ARF1 siRNA (h): sc-105086, ARF1 siRNA (m): sc-141186, ARF1 shRNA Plasmid (h): sc-105086-SH, ARF1 shRNA Plasmid (m): sc-141186-SH, ARF1 shRNA (h) Lentiviral Particles: sc-105086-V and ARF1 shRNA (m) Lentiviral Particles: sc-141186-V.

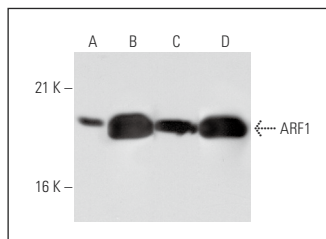
Molecular Weight of ARF1: 20 kDa.

Positive Controls: ARF1 (h): 293T Lysate: sc-113571, HeLa whole cell lysate: sc-2200 or Caki-1 cell lysate: sc-2224.

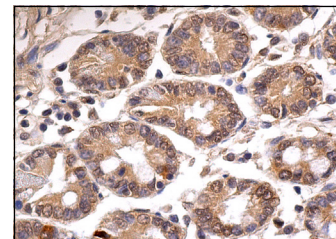
STORAGE

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

DATA



ARF1 (ARFS 1A9/5): sc-53168. Western blot analysis of ARF1 expression in non-transfected 293T: sc-117752 (A), human ARF1 transfected 293T: sc-113571 (B), HeLa (C) and Caki-1 (D) whole cell lysates.



ARF1 (ARFS 1A9/5): sc-53168. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic and perinuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

- Puxeddu, E., et al. 2009. Interaction of phosphodiesterase 3A with brefeldin A-inhibited guanine nucleotide-exchange proteins BIG1 and BIG2 and effect on ARF1 activity. *Proc. Natl. Acad. Sci. USA* 106: 6158-6163.
- Jewell, J.L., et al. 2015. Metabolism. Differential regulation of mTORC1 by leucine and glutamine. *Science* 347: 194-198.
- Eiseler, T., et al. 2016. Protein kinase D2 assembles a multiprotein complex at the *trans*-Golgi network to regulate matrix metalloproteinase secretion. *J. Biol. Chem.* 291: 462-477.
- Ramírez-Peinado, S., et al. 2017. TRAPPC13 modulates autophagy and the response to Golgi stress. *J. Cell Sci.* 130: 2251-2265.
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- Jewell, J.L., et al. 2019. GPCR signaling inhibits mTORC1 via PKA phosphorylation of Raptor. *Elife* 8: e43038.
- Meng, D., et al. 2020. Glutamine and asparagine activate mTORC1 independently of Rag GTPases. *J. Biol. Chem.* 295: 2890-2899.
- Hu, L., et al. 2021. Single-cell analysis reveals androgen receptor regulates the ER-to-Golgi trafficking pathway with CREB3L2 to drive prostate cancer progression. *Oncogene* 40: 6479-6493.
- Kim, K., et al. 2022. O-GlcNAc modification of leucyl-tRNA synthetase 1 integrates leucine and glucose availability to regulate mTORC1 and the metabolic fate of leucine. *Nat. Commun.* 13: 2904.
- Obata, Y., et al. 2023. Golgi retention and oncogenic KIT signaling via PLCγ2-PKD2-PI4KIIIβ activation in gastrointestinal stromal tumor cells. *Cell Rep.* 42: 113035.

RESEARCH USE

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