SANTA CRUZ BIOTECHNOLOGY, INC.

ARL4 (C-15): sc-66333

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ADP-ribosylation factors (ARFs) are highly conserved guanine nucleotide-binding proteins that enhance the ADP-ribosyltransferase activity of cholera toxin. ARFs are important in eukaryotic vesicular trafficking pathways and activating phospholipase D. ARL4 (ADP-ribosylation factor-like protein 4A) is a member of the ARF-like protein (ARL) subfamily of small GTPases. It contains a C-terminal nuclear localization signal (NLS) region that interacts with Importin-α. ARL4 localizes to the nucleus and is found in a variety of tissues, but is predominantly expressed in spermatogonia and Sertoli cells. It is most closely related to ARL6 and ARL7. Unlike ARFs, ARL4 does not activate the cholera toxin ADP-ribosyltranferase. ARL4 may play a role in neurogenesis during embryonic development and somitogenesis in the early stages of adult spermatogenesis.

REFERENCES

1. Schürmann, A., et al. 1994. Cloning of two novel ADP-ribosylation factor-like proteins and characterization of their differential expression in 3T3-L1 cells. J. Biol. Chem. 269: 15683-15688.
2. Smith, S.A., et al. 1995. Isolation and mapping of a gene encoding a novel human ADP-ribosylation factor on chromosome 17q12-q21. Genomics 28: 113-115.
3. Jacobs, S., et al. 1999. ADP-ribosylation factor (ARF)-like 4, 6, and 7 represent a subgroup of the ARF family characterization by rapid nucleotide exchange and a nuclear localization signal. FEBS Lett. 456: 384-388.
4. Katayama, T., et al. 1999. Expression of an ADP-ribosylation factor like gene, ARF4L, is induced after transient forebrain ischemia in the gerbil. Brain Res. Mol. Brain Res. 56: 66-75.
5. Lin, C.Y., et al. 2000. ARL4, an ARF-like protein that is developmentally regulated and localized to nuclei and nucleoli. J. Biol. Chem. 275: 37815-37823.
6. Pasqualato, S., et al. 2002. Arf, Arl, Arp and Sar proteins: a family of GTP-binding proteins with a structural device for "front-back" communication. EMBO Rep. 3: 1035-1041.
7. Schürmann, A., et al. 2002. Reduced sperm count and normal fertility in male mice with targeted disruption of the ADP-ribosylation factor-like 4 (Arl4) gene. Mol. Cell. Biol. 22: 2761-2768.
8. Kahn, R.A., et al. 2006. Nomenclature for the human Arf family of GTP-binding proteins: ARF, ARL, and SAR proteins. J. Cell Biol. 172: 645-650.
9. Hofmann, I., et al. 2007. The Arl4 family of small G proteins can recruit the cytohesin Arf6 exchange factors to the plasma membrane. Curr. Biol. 17: 711-716.

CHROMOSOMAL LOCATION

Genetic locus: ARL4A (human) mapping to 7p21.3; Arl4a (mouse) mapping to 12 B1.

SOURCE

ARL4 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of ARL4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-66333 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ARL4 (C-15) is recommended for detection of ARL4 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ARL4 (C-15) is also recommended for detection of ARL4 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for ARL4 siRNA (h): sc-61992, ARL4 siRNA (m): sc-61993, ARL4 shRNA Plasmid (h): sc-61992-SH, ARL4 shRNA Plasmid (m): sc-61993-SH, ARL4 shRNA (h) Lentiviral Particles: sc-61992-V and ARL4 shRNA (m) Lentiviral Particles: sc-61993-V.

Molecular Weight of ARL4: 22 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.