SANTA CRUZ BIOTECHNOLOGY, INC.

ARH3 (D-2): sc-514545

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ARH3 (ADP-ribosylhydrolase 3), also known as ADPRHL2 (ADP-ribosylhydrolase like 2), is a 363 amino acid protein that localizes to mitochondria, as well as to both the cytoplasm and the nucleus, and belongs to the ADP-ribosylglycohydrolase family. Expressed ubiquitously, ARH3 uses magnesium as a cofactor to catalyze the hydrolysis of poly(ADP-ribose) that is synthesized after DNA damage. Via its catalytic activity, ARH3 generates ADP-ribose from poly(ADP-ribose) and is thought to play an important role in the maintenance of normal neuronal cell function. The gene encoding ARH3 maps to human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome. Chromosome 1 houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome. Aberrations in chromosome 1 are found in a variety of cancers, including head and neck cancer, malignant melanoma and multiple myeloma.

REFERENCES

1. Glowacki, G., et al. 2002. The family of toxin-related ecto-ADP-ribosyltransferases in humans and the mouse. Protein Sci. 11: 1657-1670.
2. Kernstock, S., et al. 2006. Cloning, expression, purification, crystallization and preliminary X-ray diffraction analysis of human ARH3, the first eukaryotic protein-ADP-ribosylhydrolase. Acta Crystallogr. Sect. F, Struct. Biol. Cryst. Commun. 62: 224-227.
3. Oka, S., et al. 2006. Identification and characterization of a mammalian 39 kDa poly(ADP-ribose) glycohydrolase. J. Biol. Chem. 281: 705-713.
4. Mueller-Dieckmann, C., et al. 2006. The structure of human ADP-ribosylhydrolase 3 (ARH3) provides insights into the reversibility of protein ADP-ribosylation. Proc. Natl. Acad. Sci. USA 103: 15026-15031.
5. Ono, T., et al. 2006. The 39-kDa poly(ADP-ribose) glycohydrolase ARH3 hydrolyzes O-acetyl-ADP-ribose, a product of the Sir2 family of acetylhistone deacetylases. Proc. Natl. Acad. Sci. USA 103: 16687-16691.

CHROMOSOMAL LOCATION

Genetic locus: ADPRHL2 (human) mapping to 1p34.3; Adprhl2 (mouse) mapping to 4 D2.2.

SOURCE

ARH3 (D-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 89-110 within an internal region of ARH3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-514545 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ARH3 (D-2) is recommended for detection of ARH3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for ARH3 siRNA (h): sc-78611, ARH3 siRNA (m): sc-141198, ARH3 shRNA Plasmid (h): sc-78611-SH, ARH3 shRNA Plasmid (m): sc-141198-SH, ARH3 shRNA (h) Lentiviral Particles: sc-78611-V and ARH3 shRNA (m) Lentiviral Particles: sc-141198-V.

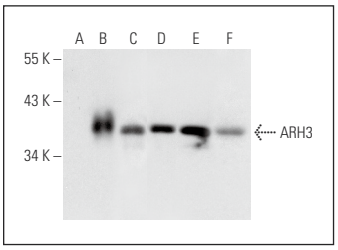
Molecular Weight of ARH3: 39 kDa.

Positive Controls: ARH3 (m2): 293T Lysate: sc-124990, HeLa whole cell lysate: sc-2200 or RT-4 whole cell lysate: sc-364257.

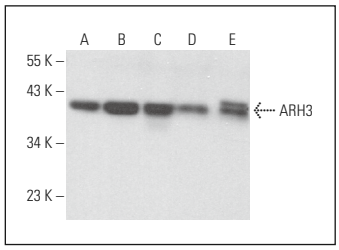
RECOMMENDED SUPPORT REAGENTS

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™ Molecular Weight Standards: sc-2035, UltraCruz® 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® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



ARH3 (D-2): sc-514545. Western blot analysis of ARH3 expression in non-transfected 293T: sc-117752 (**A**), mouse ARH3 transfected 293T: sc-124990 (**B**), HeLa (**C**), RT-4 (**D**) and U-251-MG (**E**) whole cell lysates and human liver tissue extract (**F**).



ARH3 (D-2): sc-514545. Western blot analysis of ARH3 expression in HeLa (**A**), Jurkat (**B**), HL-60 (**C**), Hep G2 (**D**) and RAW 264.7 (**E**) whole cell lysates.

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 for detailed protocols and support products.