

ARD (H-3): sc-398325

BACKGROUND

ARD (acireductone dioxygenase), also known as ADI1, APL1, SIPL, SIP-L or MTCBP1, is a 179 amino acid protein that localizes to the nucleus, as well as to the cytoplasmic side of the cell membrane, and belongs to the acireductone dioxygenase family of metal-binding enzymes. Expressed in brain, heart, lung, colon, liver, kidney, spleen and skeletal muscle, ARD uses nickel as a cofactor to catalyze a crucial step in the L-methionine biosynthetic pathway, namely the creation of L-methionine from (S)-methyl-5-thio- α -D-ribose 1-phosphate. Additionally, ARD interacts with MT-MMP-1 and may be able to downregulate MT-MMP-1-mediated cell migration. Multiple isoforms of ARD exist due to alternative splicing events.

REFERENCES

1. Yeh, C.T., et al. 2001. Identification of a hepatic factor capable of supporting hepatitis C virus replication in a nonpermissive cell line. *J. Virol.* 75: 11017-11024.
2. Uekita, T., et al. 2004. Membrane-type 1 matrix metalloproteinase cytoplasmic tail-binding protein-1 is a new member of the cupin superfamily. A possible multifunctional protein acting as an invasion suppressor down-regulated in tumors. *J. Biol. Chem.* 279: 12734-12743.
3. Yamada, S., et al. 2004. Expression profiling and differential screening between hepatoblastomas and the corresponding normal livers: identification of high expression of the PLK1 oncogene as a poor-prognostic indicator of hepatoblastomas. *Oncogene* 23: 5901-5911.
4. Hirano, W., et al. 2005. Membrane-type 1 matrix metalloproteinase cytoplasmic tail binding protein-1 (MTCBP-1) acts as an eukaryotic aci-reductone dioxygenase (ARD) in the methionine salvage pathway. *Genes Cells* 10: 565-574.
5. Gotoh, I., et al. 2007. Regulated nucleo-cytoplasmic shuttling of human acireductone dioxygenase (hADI1) and its potential role in mRNA processing. *Genes Cells* 12: 105-117.
6. Oram, S.W., et al. 2007. Expression and function of the human androgen-responsive gene ADI1 in prostate cancer. *Neoplasia* 9: 643-651.

CHROMOSOMAL LOCATION

Genetic locus: ADI1 (human) mapping to 2p25.3; Ad1 (mouse) mapping to 12 A2.

SOURCE

ARD (H-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 52-69 within an internal region of ARD of human origin.

PRODUCT

Each vial contains 200 μ g IgM 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-398325 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ARD (H-3) is recommended for detection of ARD of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 ARD siRNA (h): sc-72527, ARD siRNA (m): sc-72528, ARD shRNA Plasmid (h): sc-72527-SH, ARD shRNA Plasmid (m): sc-72528-SH, ARD shRNA (h) Lentiviral Particles: sc-72527-V and ARD shRNA (m) Lentiviral Particles: sc-72528-V.

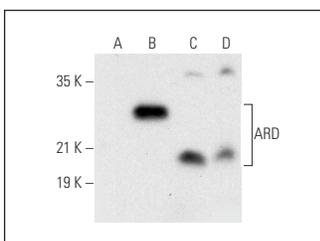
Molecular Weight of ARD: 21 kDa.

Positive Controls: ARD (h): 293T Lysate: sc-371918, SHP-77 whole cell lysate: sc-364258 or Hep G2 cell lysate: sc-2227.

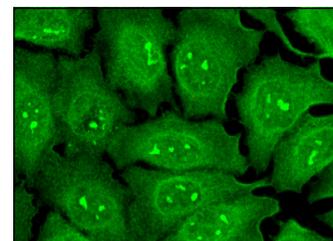
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



ARD (H-3): sc-398325. Western blot analysis of ARD expression in non-transfected 293T: sc-117752 (A), human ARD transfected 293T: sc-371918 (B), Hep G2 (C) and SHP-77 (D) whole cell lysates.



ARD (H-3): sc-398325. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane, cytoplasmic, nuclear and nucleolar localization.

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.