

ARD (C-10): sc-374413

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 aci-reductone 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 down-regulate 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 aci-reductone 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; Adi1 (mouse) mapping to 12 A2.

SOURCE

ARD (C-10) is a mouse monoclonal antibody raised against amino acids 34-171 mapping within an internal region of ARD of human origin.

PRODUCT

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

STORAGE

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

APPLICATIONS

ARD (C-10) 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.

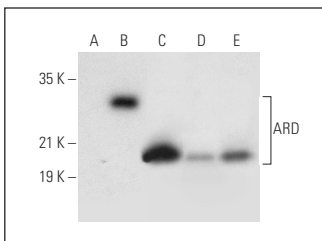
Molecular Weight of ARD: 21 kDa.

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

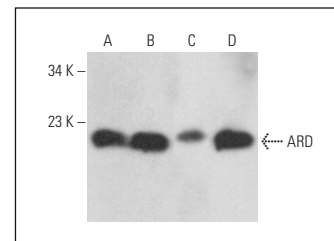
RECOMMENDED SUPPORT REAGENTS

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 A/G PLUS-Agarose: sc-2003 (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 (C-10): sc-374413. Western blot analysis of ARD expression in non-transfected 293T: sc-117752 (A), human ARD transfected 293T: sc-371918 (B) and SHP-77 (C) whole cell lysates and human lung (D) and human testis (E) tissue extracts.



ARD (C-10): sc-374413. Western blot analysis of ARD expression in Hep G2 (A), MIA PaCa-2 (B) and 3T3-L1 (C) whole cell lysates and rat liver tissue extract (D).

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.