

ARD (G-18): sc-82513

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., Lai, H.Y., Chen, T.C., Chu, C.M. and Liaw, Y.F. 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., Gotoh, I., Kinoshita, T., Itoh, Y., Sato, H., Shiomi, T., Okada, Y. and Seiki, M. 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 downregulated in tumors. *J. Biol. Chem.* 279: 12734-12743.
3. Yamada, S., Ohira, M., Horie, H., Ando, K., Takayasu, H., Suzuki, Y., Sugano, S., Hirata, T., Goto, T., Matsunaga, T., Hiyama, E., Hayashi, Y., Ando, H., Suita, S., Kaneko, M., Sasaki, F., Hashizume, K., Ohnuma, N. and Nakagawa, A. 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., Gotoh, I., Uekita, T. and Seiki, M. 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., Uekita, T. and Seiki, M. 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., Ai, J., Pagani, G.M., Hitchens, M.R., Stern, J.A., Eggener, S., Pins, M., Xiao, W., Cai, X., Haleem, R., Jiang, F., Pochapsky, T.C., Hedstrom, L. and Wang, Z. 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 (G-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ARD of human origin.

RESEARCH USE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-82513 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ARD (G-18) is recommended for detection of ARD of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with other ARD family members.

ARD (G-18) is also recommended for detection of ARD in additional species, including bovine.

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.

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) 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.

PROTOCOLS

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