SANTA CRUZ BIOTECHNOLOGY, INC.

Arg2 (A-10): sc-393496

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Arginase 1 (also designated liver-type arginase), which is expressed almost exclusively in the liver, catalyzes the conversion of arginine to ornithine and urea. The human Arginase 1 gene, which maps to chromosome 6q23.2, encodes a 322 amino acid protein. Arginase 1 exists as a homotrimeric protein and contains a binuclear manganese cluster. Arg2 catalyzes the same reaction as Arginase 1, but differs in its tissue specificity and subcellular location. Specifically, arginase II localizes to the mitochondria. Arg2 is expressed in non-hepatic tissues, with the highest levels of expression in the kidneys, but, unlike Arginase 1, is not expressed in liver. The human Arg2 gene, which maps to chromosome 14q24.1, encodes a 354 amino acid protein. In addition, Arg2 contains a putative amino-terminal mitochondrial localization sequence.

CHROMOSOMAL LOCATION

Genetic locus: ARG2 (human) mapping to 14q24.1; Arg2 (mouse) mapping to 12 C3.

SOURCE

Arg2 (A-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 304-335 near the C-terminus of Arg2 of human origin.

PRODUCT

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

Arg2 (A-10) is available conjugated to agarose (sc-393496 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393496 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-393496 PE), fluorescein (sc-393496 FITC) or Alexa Fluor® 488 (sc-393496 AF488) or Alexa Fluor® 647 (sc-393496 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

Blocking peptide available for competition studies, sc-393496 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Arg2 (A-10) is recommended for detection of Arg2 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Arg2 (A-10) is also recommended for detection of Arg2 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for Arg2 siRNA (h): sc-29729, Arg2 siRNA (m): sc-29730, Arg2 shRNA Plasmid (h): sc-29729-SH, Arg2 shRNA Plasmid (m): sc-29730-SH, Arg2 shRNA (h) Lentiviral Particles: sc-29729-V and Arg2 shRNA (m) Lentiviral Particles: sc-29730-V.

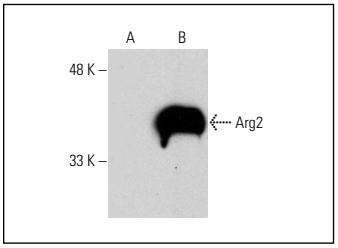
Molecular Weight of Arg2: 40 kDa.

Positive Controls: Arg2 (h): 293T Lysate: sc-114274.

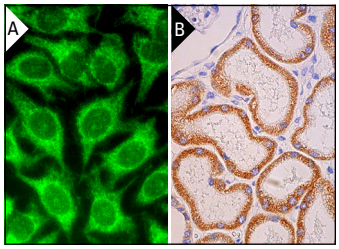
STORAGE

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

DATA



Arg2 (A-10) HRP: sc-393496 HRP. Direct western blot analysis of Arg2 expression in non-transfected: sc-117752 (**A**) and human Arg2 transfected: sc-114274 (**B**) 293T whole cell lysates.



Arg2 (A-10): sc-393496. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (**B**).

SELECT PRODUCT CITATIONS

1. Rubio-Navarro, A., et al. 2016. CD163-macrophages are involved in rhabdomyolysis-induced kidney injury and may be detected by MRI with targeted gold-coated iron oxide nanoparticles. Theranostics 6: 896-914.
2. Yu, Y., et al. 2018. Arginase-II activates mTORC1 through myosin-1b in vascular cell senescence and apoptosis. Cell Death Dis. 9: 313.
3. Yin, Y., et al. 2020. Arginase 2 deficiency promotes neuroinflammation and pain behaviors following nerve injury in mice. J. Clin. Med. 9: 305.
4. Li, L., et al. 2021. PGC1α is required for the renoprotective effect of lncRNA Tug1 *in vivo* and links Tug1 with urea cycle metabolites. Cell Rep. 36: 109510.
5. Akhmedov, A., et al. 2022. TNFα induces endothelial dysfunction in rheumatoid arthritis via LOX-1 and arginase 2: reversal by monoclonal TNFα antibodies. Cardiovasc. Res. 118: 254-266.
6. Kalezic, A., et al. 2022. l-arginine induces white adipose tissue browning—a new pharmaceutical alternative to cold. Pharmaceutics 14: 1368.
7. Alzayadneh, E.M., et al. 2023. Methylglyoxal-modified albumin effects on endothelial arginase enzyme and vascular function. Cells 12: 795.
8. Zou, N.Y., et al. 2024. Age-related secretion of grancalcin by macrophages induces skeletal stem/progenitor cell senescence during fracture healing. Bone Res. 12: 6.
9. Lim, J.H., et al. 2024. Placental growth factor deficiency initiates obesity- and aging-associated metabolic syndrome. Metabolism 161: 156002.

RESEARCH USE

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