SANTA CRUZ BIOTECHNOLOGY, INC.

Arg2 (C-3): sc-374420

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

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

REFERENCES

1. Diez, A., et al. 1994. Immunological identity of the two different molecular mass constitutive subunits of liver arginase. Biol. Chem. Hoppe-Seyler 375: 537-541.
2. Gotoh, T., et al. 1996. Molecular cloning of cDNA for nonhepatic mitochondrial arginase (arginase II) and comparison of its induction with nitric oxide synthase in a murine macrophage-like cell line. FEBS Lett. 395: 119-122.
3. Gotoh, T., et al. 1997. Chromosomal localization of the human arginase II gene and tissue distribution of its mRNA. Biochem. Biophys. Res. Commun. 233: 487-491.
4. Carraway, M.S., et al. 1998. Differential expression of arginase and iNOS in the lung in sepsis. Exp. Lung Res. 24: 253-268.

CHROMOSOMAL LOCATION

Genetic locus: Arg2 (mouse) mapping to 12 C3.

SOURCE

Arg2 (C-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 67-105 within an internal region of Arg2 of mouse origin.

PRODUCT

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

Arg2 (C-3) is available conjugated to agarose (sc-374420 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374420 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374420 PE), fluorescein (sc-374420 FITC), Alexa Fluor® 488 (sc-374420 AF488), Alexa Fluor® 546 (sc-374420 AF546), Alexa Fluor® 594 (sc-374420 AF594) or Alexa Fluor® 647 (sc-374420 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374420 AF680) or Alexa Fluor® 790 (sc-374420 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374420 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Arg2 (C-3) is recommended for detection of Arg2 of mouse and rat 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 Arg2 siRNA (m): sc-29730, Arg2 shRNA Plasmid (m): sc-29730-SH and Arg2 shRNA (m) Lentiviral Particles: sc-29730-V.

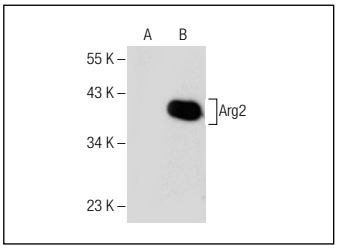
Molecular Weight of Arg2: 40 kDa.

Positive Controls: rat kidney extract: sc-2394.

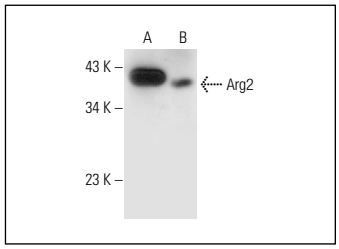
RECOMMENDED SUPPORT REAGENTS

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



Arg2 (C-3): sc-374420. Western blot analysis of Arg2 expression in non-transfected: sc-117752 (**A**) and human Arg2 transfected: sc-114274 (**B**) 293T whole cell lysates.



Arg2 (C-3): sc-374420. Western blot analysis of Arg2 expression in PC-3 whole cell lysate (**A**) and rat kidney tissue extract (**B**).

SELECT PRODUCT CITATIONS

1. Jung, C., et al. 2017. Arginase inhibition reverses monocrotaline-induced pulmonary hypertension. Int. J. Mol. Sci. 18: 1609.
2. Wetzel, M.D., et al. 2020. Selective inhibition of arginase-2 in endothelial cells but not proximal tubules reduces renal fibrosis. JCI Insight 5: e142187.

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.