SANTA CRUZ BIOTECHNOLOGY, INC.

arginase II (P-20): sc-18360

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.
5. Mora, A., et al. 2000. Implications of the S-shaped domain in the quaternary structure of human arginase. Biochim. Biophys. Acta 1476: 181-190.

CHROMOSOMAL LOCATION

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

SOURCE

arginase II (P-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of arginase II of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-18360 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

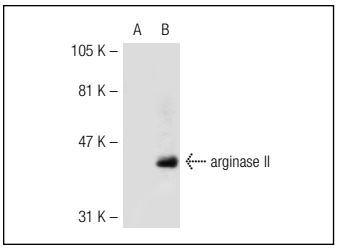
arginase II (P-20) is recommended for detection of arginase II of mouse, rat and, to a lesser extent, human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting 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).

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

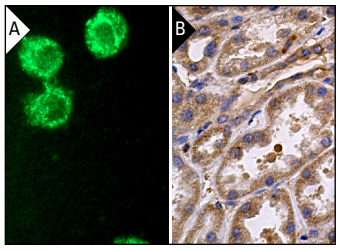
Molecular Weight of arginase II: 40 kDa.

Positive Controls: arginase II (h): 293T Lysate: sc-114274, T84 whole cell lysate: sc-364797 or rat kidney extract: sc-2394.

DATA



arginase II (P-20): sc-18360. Western blot analysis of arginase II expression in non-transfected: sc-117752 (**A**) and human arginase II transfected: sc-114274 (**B**) 293T whole cell lysates.



arginase II (P-20): sc-18360. Immunofluorescence staining of methanol-fixed RAW 264.7 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. Tadie, J.M., et al. 2008. Role of nitric oxide synthase/arginase balance in bronchial reactivity in patients with chronic obstructive pulmonary disease. Am. J. Physiol. Lung Cell. Mol. Physiol. 294: 489-497.
2. Watts, J.A., et al. 2011. Up-regulation of arginase II contributes to pulmonary vascular endothelial cell dysfunction during experimental pulmonary embolism. Pulm. Pharmacol. Ther. 24: 407-413.

RESEARCH USE

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