

Arginase 1/ARG1 Protein, Human, Recombinant (His)

General Information

Synonyms:	arginase 1;ARG1
Protein Construction:	A DNA sequence encoding the human ARG1 isoform 1 (P05089-1) (Met 1-Lys 322) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Met 1
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P05089-1
Molecular Weight:	36.2 kDa (predicted); 40 kDa (reducing conditions)

QC Testing

Biological Activity:	Measured by the production of urea during the hydrolysis of arginine. The specific activity is >35,000 pmoles/min/ μ g.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ μ g of the protein as determined by the LAL method.
Formulation:	Supplied as sterile 20 mM Tris, 150 mM NaCl, 20% Glycerol, 1 mM DTT, pH 7.4.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C . Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

Arginase is the focal enzyme of the urea cycle hydrolysing L-arginine to urea and L-ornithine. Emerging studies have identified arginase in the vasculature and have implicated this enzyme in the regulation of nitric oxide (NO) synthesis and the development of vascular disease. Arginase also redirects the metabolism of L-arginine to L-ornithine and the formation of polyamines and L-proline, which are essential for smooth muscle cell growth and collagen synthesis. Arginase is encoded by two recently discovered genes (Arginase I and Arginase II). In most mammals, Arginase 1 (ARG1) also known as Arginase, liver, which functions in the urea cycle, and is located primarily in the cytoplasm of the liver. The second isozyme, Arginase II, has been implicated in the regulation of the arginine/ornithine concentrations in the cell. It is located in mitochondria of several tissues in the body, with

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most abundance in the kidney and prostate. It may be found at lower levels in macrophages, lactating mammary glands, and brain.

Reference

Durante W, et al. (2007) Arginase: a critical regulator of nitric oxide synthesis and vascular function. Clin Exp Pharmacol Physiol. 34(9): 906-11.

Waddington SN. (2002) Arginase in glomerulonephritis. Kidney Int. 61(3): 876-81.

Morris SM. (2002). Regulation of enzymes of the urea cycle and arginine metabolism. Annual review of nutrition. 22 (1): 87-105.

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