Arginase-1/ARG1 Protein, Human (N-His)

Cat. No.:	HY-P7541A
Synonyms:	rHuArginase-1, His; ARG1; Arginase-1
Species:	Human
Source:	E. coli
Accession:	P05089 (M1-K322)
Gene ID:	383
Molecular Weight:	Approximately 40 kDa

PROPERTIES

AA Sequence	M S A K S R T I G I I G A P F S K G Q P R G G V E E G P T V L R K A G L L E K L K E Q E C D V K D Y G D L P F A D I P N D S P F Q I V K N P R S V G K A S E Q L A G K V A E V K K N G R I S L V L G G D H S L A I G S I S G H A R V H P D L G V I W V D A H T D I N T P L T T T S G N L H G Q P V S F L L K E L K G K I P D V P G F S W V T P C I S A K D I V Y I G L R D V D P G E H Y I L K T L G I K Y F S M T E V D R L G I G K V M E E T L S Y L L G R K K R P I H L S F D V D G L D P S F T P A T G T P V V G G L T Y R E G L Y I T E E I Y K T G L L S G L D I M E V N P S L G K T P E E V T R T V N T A V A I T L A C F G L A R E G N H K P I D Y L N P P K
Biological Activity	Measured by its binding ability in the production of urea during the hydrolysis of arginine. The specific activity is 129570.707 pmol/min/μg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of 50 mM Tris-HCL, 300 mM NaCl, pH 7.4, 5% trehalose, 5% mannitol and 0.01% Tween 80.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	Arginase-1 (ARG1) protein is a crucial component of the urea cycle, facilitating the conversion of L-arginine to urea and L-ornithine. This cycle primarily occurs in the liver and, to a lesser extent, in the kidneys. Beyond its role in nitrogen metabolism, ARG1 plays a pivotal role in L-arginine homeostasis in nonhepatic tissues, where it competes with nitric oxide synthase (NOS) for intracellular arginine, impacting innate and adaptive immune responses. The antimicrobial effector pathway in polymorphonuclear granulocytes involves ARG1, released upon cell death, which depletes arginine in the microenvironment, leading to suppressed T cell and natural killer (NK) cell proliferation and cytokine secretion. In group 2 innate lymphoid cells (ILC2s), ARG1 promotes acute type 2 inflammation in the lung, influencing ILC2 proliferation. However, the precise immunological role of ARG1 in the monocytic/macrophage/dendritic cell lineage in humans remains uncertain.

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