

Arginase-1/ARG1 Protein, Mouse (P.pastoris, His)

Cat. No.:	HY-P71833
Synonyms:	Arg1Arginase-1; EC 3.5.3.1; Liver-type arginase; Type I arginase
Species:	Mouse
Source:	P. pastoris
Accession:	Q61176 (M1-K323)
Gene ID:	11846
Molecular Weight:	Approximately 36.8 kDa

PROPERTIES

AA Sequence

```

M S S K P K S L E I   I G A P F S K G Q P   R G G V E K G P A A   L R K A G L L E K L
K E T E Y D V R D H   G D L A F V D V P N   D S S F Q I V K N P   R S V G K A N E E L
A G V V A E V Q K N   G R V S V V L G G D   H S L A V G S I S G   H A R V H P D L C V
I W V D A H T D I N   T P L T T S S G N L   H G Q P V S F L L K   E L K G K F 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 I   K T L G I K Y F S M
T E V D K L G I G K   V M E E T F S Y L L   G R K K R P I H L S   F D V D G L D P A F
T P A T G T P V L G   G L S 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
T L G K T A E E V K   S T V N T A V A L T   L A C F G T Q R E G   N H K P G T D Y L K
P P K
  
```

Biological Activity The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.

Appearance Lyophilized powder.

Formulation Lyophilized after extensive dialysis against solution in PBS, 6% Trehalose, pH 7.4.

Endotoxin Level <1 EU/μg, determined by LAL method.

Reconstitution It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH₂O.

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) stands as a central component of the urea cycle, crucial for the conversion of L-arginine to urea and L-ornithine, the latter serving as a precursor for metabolites vital in collagen synthesis and bioenergetic pathways that fuel

cell proliferation. Primarily active in the liver and, to a lesser extent, in the kidneys, the urea cycle plays a pivotal role in maintaining L-arginine homeostasis, particularly in tissues where nitric oxide synthase (NOS) and arginase engage in a competitive relationship for intracellular arginine. Beyond its metabolic functions, ARG1 emerges as a critical regulator of innate and adaptive immune responses, participating in antimicrobial effector pathways in polymorphonuclear granulocytes (PMN). Upon PMN cell death, ARG1 is released, depleting arginine in the microenvironment and dampening T cell and natural killer (NK) cell proliferation as well as cytokine secretion. Notably, in group 2 innate lymphoid cells (ILC2s), ARG1 contributes to acute type 2 inflammation in the lung, influencing optimal ILC2 proliferation. Moreover, ARG1 plays a multifaceted role in the immune responses of alternatively activated or M2 macrophages, impacting processes such as wound healing, tissue regeneration, defense against multicellular pathogens, and immune suppression with outcomes varying by organ. In tumor-infiltrating dendritic cells (DCs) and myeloid-derived suppressor cells (MDSCs), ARG1 contributes to the suppression of T cell-mediated antitumor immunity, highlighting its diverse and context-dependent immunoregulatory functions.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA