IL-1 beta Protein, Human (CHO)

Cat. No.:	HY-P7205
Synonyms:	rHuIL-1β; Catabolin; IL1F2; IL1B
Species:	Human
Source:	CHO
Accession:	P01584 (A117-S269)
Gene ID:	3553
Molecular Weight:	16-23 kDa

PROPERTIES

AA Sequence	A P V R S L N C T L R D S Q Q K S L V M S G P Y E L K A L H L Q G Q D M E Q Q V V F S M S F V Q G E E S N D K I P V A L G L K E K N L Y L S C V L K D D K P T L Q L E S V D P K N Y P K K K M E K R F V F N K I E I N N K L E F E S A Q F P N W Y I S T S Q A E N M P V F L G G T K G G Q D I T D F T M Q F V S S
Biological Activity	1.The ED_{50} is <10 pg/mL as measured by D10S cells, corresponding to a specific activity of >1.0 × 10^8 units/mg. 2.Measured in a cell proliferation assay using CTLL-2 mouse T lymphocyte. The ED_{50} this effect is 2.877 pg/mL, corresponding to a specific activity is 3.47×10^5 units/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized after extensive dialysis against PBS or 20 mM PB, 150 mM NaCl, pH 7.4.
Endotoxin Level	<0.2 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
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	Interleukin-1β (IL-1β) is one of the pro-inflammatory cytokines and is produced and secreted by a variety of cell types although the vast majority of studies have focussed on its production within cells of the innate immune system, such as monocytes and macrophages[1][2]. IL-1β is produced as inactive pro-IL-1β (encoded by pro-Il-1b) in response to inflammatory stimuli, including both microbial

products and endogenous danger-associated molecules. IL-1β gene expression and synthesis of pro-IL-1β occurs after activation of pattern recognition receptors (PRRs). Inflammatory stimuli also drive activation of cytosolic CARD and PYHIN domain-containing PRRs that recruit ASC and caspase-1 (Casp-1) to assemble into the multiprotein complex inflammasome. Pro-Casp-1 (encoded by pro-Casp-1), activated by the inflammasome, cleaves pro-IL-1β into the bioactive IL-1β. IL-1β acts in an autocrine/paracrine manner via the type I IL-1 receptor (IL-1R1)[1][2][3].

IL-1β could regulate the inflammatory response, and is involved in a variety of cellular activities, including cell proliferation, differentiation, and apoptosis. IL-1β also plays a significant regulator of reproduction in females[1][2][3].

REFERENCES

[1]. Jan Petrasek, et al. IL-1 receptor antagonist ameliorates inflammasome-dependent alcoholic steatohepatitis in mice. J Clin Invest. 2012 Oct;122(10):3476-89.

[2]. Karina Zitta, et al. Interleukin-1beta regulates cell proliferation and activity of extracellular matrix remodelling enzymes in cultured primary pig heart cells. Biochem Biophys Res Commun. 2010 Sep 3;399(4):542-7.

[3]. Kenichi Shimada, et al. Caspase-1 dependent IL-1β secretion is critical for host defense in a mouse model of Chlamydia pneumoniae lung infection. PLoS One. 2011;6(6):e21477.

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