

IL-1 beta Protein, Canine

Cat. No.:	HY-P73146
Synonyms:	Interleukin-1 beta; IL-1 β ; IL1F2; IL-1 beta; IL1B
Species:	Canine
Source:	E. coli
Accession:	Q28292 (A115-S266)
Gene ID:	403974
Molecular Weight:	Approximately 17 kDa

PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μ m filtered solution of 20 mM PB, 0.3M NaCl, pH 6.5. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/ μ g, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μ g/mL in ddH ₂ O.
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	<p>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]}.</p> <p>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]}.</p> <p>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]}.</p>
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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-1 β secretion is critical for host defense in a mouse model of Chlamydia pneumoniae lung infection. PLoS One. 2011;6(6):e21477.

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

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