

IL-1 beta Protein, Cynomolgus (His)

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| Cat. No.: | HY-P78585 |
| Synonyms: | IL1B; IL-1BETA; IL1F2; IL-1 β |
| Species: | Cynomolgus |
| Source: | E. coli |
| Accession: | P79182-1 (A117-S268) |
| Gene ID: | 102119749 |
| Molecular Weight: | Approximately 18 kDa |

PROPERTIES

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| AA Sequence | <p>A P V R S L H C T L R D A Q L K S L V M S G P Y E L K A L H L Q G Q D L E Q Q V</p> <p>V F S M S F V Q G E E S N D K I P V A L G L K A K N L Y L S C V L K D D K P T L</p> <p>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</p> <p>Y I S T S Q A E S M P V F L G G T R G G Q D I T D F T M Q F V S</p> |
| Biological Activity | Measured in a proliferation assay using CTLL-2 Mouse Embryonic Fibroblasts Cells. The ED ₅₀ for this effect is 1.942 pg/mL, corresponding to a specific activity is 5.15×10 ⁸ units/mg. |
| Appearance | Lyophilized powder. |
| Formulation | Lyophilized a 0.22 μ m filtered solution of PBS, pH 7.4. Normally trehalose is added as protectant 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. 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

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| 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</p> |
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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-1 β into the bioactive IL-1 β . IL-1 β acts in an autocrine/paracrine manner via the type I IL-1 receptor (IL-1R1)^{[1][2][3]}. IL-1 β could regulate the inflammatory response, and is involved in a variety of cellular activities, including cell proliferation, differentiation, and apoptosis. IL-1 β 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-1 β secretion is critical for host defense in a mouse model of Chlamydia pneumoniae lung infection. *PLoS One*. 2011;6(6):e21477.
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