

IL-1 alpha/IL-1F1 Protein, Porcine

Cat. No.:	HY-P79243
Synonyms:	Interleukin-1 alpha; IL1A; IL-1 alpha; Interleukin 1 alpha
Species:	Porcine
Source:	E. coli
Accession:	P18430 (Q119-S270)
Gene ID:	397094
Molecular Weight:	Approximately 17.5 kDa

PROPERTIES

AA Sequence	<p>Q S N M K Y N F M R V I N H Q C I L N D A R N Q S I I R D P S G Q Y L M A A V L</p> <p>N N L D E A V K F D M A A Y T S N D D S Q L P V T L R I S E T R L F V S A Q N E</p> <p>D E P V L L K E L P E T P K T I K D E T S L L F F W E K H G N M D Y F K S A A H</p> <p>P K L F I A T R Q E K L V H M A P G L P S V T D F Q I L E N Q S</p>
Biological Activity	<p>1. Measured in a cell proliferation assay using D10.G4.1 mouse helper T cells. The ED₅₀ for this effect is 10-60 pg/mL.</p> <p>2. Measured in a cell proliferation assay using CTTL2 cells. The ED₅₀ for this effect is 6.554 pg/mL, corresponding to a specific activity is 1.526×10⁸ units/mg.</p>
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS and DTT with BSA as a carrier protein.
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 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

Background	The cytokine interleukin-1 alpha (IL-1 alpha), constitutively present intracellularly in almost all quiescent non-hematopoietic cells, plays a crucial role in inflammation and serves as a key mediator bridging the innate and adaptive immune systems. Upon binding to its receptor IL1R1, along with its accessory protein IL1RAP, IL-1 alpha forms the high-affinity interleukin-1 receptor complex, initiating signaling cascades involving the recruitment of adapter molecules such as
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MYD88, IRAK1, or IRAK4. This activation leads to the subsequent activation of NF-kappa-B and the three MAPK pathways—p38, p42/p44, and JNK pathways. Intracellularly, IL-1 alpha acts as an alarmin, and its release into the extracellular space upon cell death, following cell membrane disruption, induces inflammation and signals the host response to injury or damage. In addition to its role as a danger signal during cell necrosis, IL-1 alpha directly senses DNA damage, serving as a signal for genotoxic stress without compromising cell integrity. As a monomer, IL-1 alpha interacts with TMED10, facilitating translocation from the cytoplasm into the endoplasmic reticulum-Golgi intermediate compartment (ERGIC) and subsequent secretion. Furthermore, IL-1 alpha interacts with IL1R1 and S100A13, with the latter interaction being the initial step in the export of IL-1 alpha, followed by the direct translocation of this complex across the plasma membrane.

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

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