

## Animal-Free IL-1 alpha/IL-1F1 Protein, Pig (His)

<b>Cat. No.:</b>	HY-P700242AF
<b>Synonyms:</b>	Interleukin-1 alpha; IL1A; IL-1 alpha; Interleukin 1 alpha
<b>Species:</b>	Pig
<b>Source:</b>	E. coli
<b>Accession:</b>	P18430 (S113-S270)
<b>Gene ID:</b>	397094
<b>Molecular Weight:</b>	Approximately 19.02 kDa

### PROPERTIES

<b>AA Sequence</b>	<pre> M S A T Y S F 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 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 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 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           </pre>
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a solution containing 1X PBS, pH 7.4.
<b>Endotoxin Level</b>	<0.1 EU per 1 µg of the protein by the LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

<b>Background</b>	<p>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 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</p>
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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.

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

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