

## IL-33 Protein, Human (His)

Cat. No.:	HY-P70475
Synonyms:	Interleukin-33; IL-33; Interleukin-1 Family Member 11; IL-1F11; Nuclear Factor From High Endothelial Venules; NF-HEV; IL33; C9orf26; IL1F11; NFHEV
Species:	Human
Source:	E. coli
Accession:	O95760 (S112-T270)
Gene ID:	90865
Molecular Weight:	Approximately 21.0 kDa

### PROPERTIES

AA Sequence	<div> S I T G I S P I T E    Y L A S L S T Y N D    Q S I T F A L E D E    S Y E I Y V E D L K  K D E K K D K V L L    S Y Y E S Q H P S N    E S G D G V D G K M    L M V T L S P T K D  F W L H A N N K E H    S V E L H K C E K P    L P D Q A F F V L H    N M H S N C V S F E  C K T D P G V F I G    V K D N H L A L I K    V D S S E N L C T E    N I L F K L S E T </div>
Biological Activity	Measured in a cell proliferation assay using D10.G4.1 mouse helper T cells. The ED <sub>50</sub> for this effect is 0.4463 ng/mL, corresponding to a specific activity is 2.254×10 <sup>6</sup> units/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, 1 mM DTT, pH 7.4 or 50 mM Tris-HCL, 300 mM NaCl, pH 7.4, 5% trehalose, 5% mannitol and 0.01% Tween 80.
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 <sub>2</sub> 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	IL-33 protein, functioning as a cytokine, binds to and signals through the IL1RL1/ST2 receptor, thereby activating the NF-kappa-B and MAPK signaling pathways in target cells. Its involvement in the maturation of Th2 cells contributes to the secretion of T-helper type 2-associated cytokines. Additionally, IL-33 plays a crucial role in the activation of mast cells, basophils, eosinophils, and natural killer cells. Acting as an enhancer of the polarization of alternatively activated macrophages, it serves as a chemoattractant for Th2 cells and may function as an 'alarmin,' amplifying immune responses
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during tissue injury. IL-33 induces rapid UCP2-dependent mitochondrial rewiring, mitigating the generation of reactive oxygen species and preserving the integrity of the Krebs cycle, which is essential for the persistent production of itaconate and subsequent GATA3-dependent differentiation of inflammation-resolving alternatively activated macrophages. In quiescent endothelia, the uncleaved form of IL-33 is constitutively and abundantly expressed, acting as a chromatin-associated nuclear factor with transcriptional repressor properties, potentially sequestering nuclear NF-kappaB/RELA and thereby lowering the expression of its targets; this form is rapidly lost upon angiogenic or pro-inflammatory activation.

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

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