Animal-Free IL-33 Protein, Human (His)

Cat. No.:	HY-P70475AF
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 18.93 kDa

PROPERTIES

AA Sequence	M 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
Biological Activity	1.Measure by its ability to bind with recombinant ST2L (IL-33 receptor). The ED_{50} for this effect is <54 ng/mL. 2.Measure by its ability to induce proliferation in D10.G4.1 cells. The $ED_{50}$for this effect is <0.1 ng/mL. The specific activity of recombinant human IL-33 is approximately >4 x10^7 IU/ mg
Appearance	Lyophilized powder.
Formulation	Lyophilized from a solution containing 1X PBS, pH 7.4.
Endotoxin Level	<0.1 EU per 1 μg of the protein by the LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
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

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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