

## Recombinant Human Interleukin-33 (Human IL-33)

### Product Information

Product Name	Cat#	Size
	90123ES10	10 µg
Recombinant Human Interleukin-33 (Human IL-33)	90123ES60	100 µg
	90123ES76	500 µg

### Product Description

IL-33, also known as NF-HEV and DVS 27, is a 30 kDa proinflammatory protein that may also regulate gene transcription. DVS 27 was identified as a gene that is upregulated in vasospastic cerebral arteries. NF-HEV was described as a nuclear factor that is preferentially expressed in the endothelial cells of high endothelial venules relative to endothelial cells from other tissues. IL-33 was identified based on sequence and structural homology with IL-1 family cytokines. DVS 27, NF-HEV, and IL-33 share 100% amino acid sequence identity. IL-33 is constitutively expressed in smooth muscle and airway epithelia. It is up-regulated in arterial smooth muscle, dermal fibroblasts, and keratinocytes following IL-1 alpha or IL-1 beta stimulation. Similar to IL-1, IL-33 can be cleaved *in vitro* by caspase-1, generating an N-terminal fragment that is slightly shorter than the C-terminal fragment. The N-terminal portion of full length IL-33 contains a predicted bipartite nuclear localization sequence and a homeodomain-like helix-turn-helix DNA binding domain. By immunofluorescence, full length IL-33 localizes to the nucleus in HUVECs and transfectants. The C-terminal fragment, corresponding to mature IL-33, binds and triggers signaling through mast cell IL-1 R4/ST2L, a longtime orphan receptor involved in the augmentation of Th2 cell responses. A ternary signaling complex is formed by the subsequent association of IL-33 and ST2L with IL-1R ACP. Stimulation of Th2 polarized lymphocytes with mature IL-33 *in vitro* induces IL-5 and IL-13 secretion. *In vivo* administration of mature IL-33 promotes increased production of IL-5, IL-13, IgE, and IgA, as well as splenomegaly and inflammatory infiltration of mucosal tissues. Full length and mature human IL-33 share 52-58% aa sequence identity with mouse and rat IL-33. Human IL-33 shares less than 20% aa sequence identity with other IL-1 family proteins.

### Product Properties

<b>Synonyms</b>	IL-1F11, NF-HEV, DVS 27
<b>Accession</b>	O95760
<b>GeneID</b>	90865
<b>Source</b>	E.coli-derived human IL-33 protein, Ser112-Thr270.
<b>Molecular Weight</b>	Approximately 17.9 kDa.
<b>AA Sequence</b>	SITGISPITE YLASLSTYND QSITFALEDE SYEIVVEDLK KDEKKDKVLL SYYESQHPSN ESGDGVDGKM LMVTLSPKTD FWLHANNKEH SVELHKCEKP LPDQAFFVLH NMHSNCVSFE CKTDPGVFIG VKDNHLALIK VDSSENLCCTE NILFKLSET
<b>Tag</b>	None
<b>Physical Appearance</b>	Sterile Filtered White lyophilized (freeze-dried) powder.
<b>Purity</b>	> 97% by SDS-PAGE and HPLC analyses.
<b>Biological Activity</b>	Fully biologically active when compared to standard. The ED <sub>50</sub> as determined by a cell proliferation assay using murine D10S cells is less than 0.05 ng/mL of corresponding to a specific activity of > 2.0 × 10 <sup>7</sup> IU/mg.

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<b>Endotoxin</b>	< 1.0 EU per 1µg of the protein by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered concentrated solution in 20 mM PB, 150 mM NaCl, 1 mM EDTA, pH7.4. We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom.
<b>Reconstitution</b>	Reconstitute in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at $\leq -20^{\circ}\text{C}$ . Further dilutions should be made in appropriate buffered solutions.

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### Shipping and Storage

The products are shipped with ice pack and can be stored at  $-20^{\circ}\text{C}$  to  $-80^{\circ}\text{C}$  for 1 year.

Recommend to aliquot the protein into smaller quantities when first used and avoid repeated freeze-thaw cycles.

### Cautions

1. Avoid repeated freeze-thaw cycles.
2. For your safety and health, please wear lab coats and disposable gloves for operation.
3. For research use only.