### DESCRIPTION

**Source**  
E. coli-derived human IL-33 protein  
Ser112-Thr270  
Accession # O95760

**N-terminal Sequence Analysis**  
Ser112

**Predicted Molecular Mass**  
18 kDa

### SPECIFICATIONS

**Activity**  
The ED₅₀ for this effect is 0.06-0.24 ng/mL.  
Optimal dilutions should be determined by each laboratory for each application.

**Endotoxin Level**  
<0.01 EU per 1 μg of the protein by the LAL method.

**Purity**  
>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie Blue Staining.

**Formulation**  
Lyophilized from a 0.2 μm filtered solution in PBS, EDTA and DTT. See Certificate of Analysis for details.

### PREPARATION AND STORAGE

**Reconstitution**  
Reconstitute at 100 μg/mL in sterile PBS.

**Shipping**  
The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage**  
Use a manual defrost freezer and avoid repeated freeze-thaw cycles.  
- 12 months from date of receipt, -20 to -70 °C as supplied.  
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.  
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

### DATA

**Bioactivity**  
Recombinant Human IL-33 (Catalog # 3625-IL/CF) stimulates cell proliferation of the D10.G4.1 mouse helper T cell line. The ED₅₀ for this effect is 0.06-0.24 ng/mL.

**SDS-PAGE**  
1 μg lane of Recombinant Human IL-33 was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 19 kDa.

### BACKGROUND

IL-33, also known as NF-HEV and DVS 27, is a 30 kDa proinflammatory protein that may also regulate gene transcription (1-3). DVS 27 was identified as a gene that is upregulated in vasospastic cerebral arteries (1). 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 (2). IL-33 was identified based on sequence and structural homology with IL-1 family cytokines (3). 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 arteriolar smooth muscle, dermal fibroblasts, and keratinocytes following IL-1α or IL-1β stimulation (1, 3). 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 (3, 4). 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 (2). The C-terminal fragment, corresponding to mature IL-33, binds and triggers signaling through mast cell IL-1R4/ST2L, a long time orphan receptor involved in the augmentation of Th2 cell responses (3, 5-7). A ternary signaling complex is formed by the subsequent association of IL-33 and ST2L with IL-1R AcP (8). Stimulation of Th2 polarized lymphocytes with mature IL-33 in vitro induces IL-5 and IL-13 secretion (3). 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 (3). Full length and mature human IL-33 share 52-58% as sequence identity with mouse and rat IL-33. Human IL-33 shares less than 20% as sequence identity with other IL-1 family proteins.

**References:**


Rev. 5/9/2018 Page 1 of 1