

DESCRIPTION

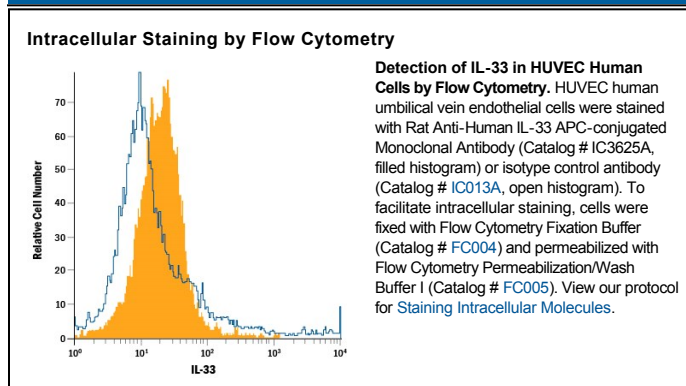
Species Reactivity	Human
Specificity	Detects human IL-33 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant mouse IL-33 is observed.
Source	Monoclonal Rat IgG _{2B} Clone # 390412
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human IL-33 Ser112-Thr270 Accession # O95760
Conjugate	Allophycocyanin Excitation Wavelength: 620-650 nm Emission Wavelength: 660-670 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Intracellular Staining by Flow Cytometry	10 μ L/10 ⁶ cells	See Below

DATA



PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> ● 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

IL-33, also known as NF-HEV and DVS 27, is a 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). IL-33 is constitutively expressed in smooth muscle and airway epithelia. It is upregulated in arterial smooth muscle, dermal fibroblasts, and keratinocytes following IL-1 α or IL-1 β 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 32 kDa 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 18 kDa fragment, corresponding to mature IL-33, binds and triggers signaling through mast cell IL-1 R4/ST2, a 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 ST2 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% 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.

References:

1. Onda, H. *et al.* (1999) *J. Cereb. Blood Flow Metab.* **19**:1279.
2. Baekkevold, E.S. *et al.* (2003) *Am. J. Pathol.* **163**:69.
3. Schmitz, J. *et al.* (2005) *Immunity* **23**:479.
4. Black, R.A. *et al.* (1989) *J. Biol. Chem.* **264**:5323.
5. Xu, D. *et al.* (1998) *J. Exp. Med.* **187**:787.
6. Lohning, M. *et al.* (1998) *Proc. Natl. Acad. Sci. USA* **95**:6930.
7. Dinarello, C.A. (2005) *Immunity* **23**:461.
8. Chackerian, A.A. *et al.* (2007) *J. Immunol.* **179**:2551.