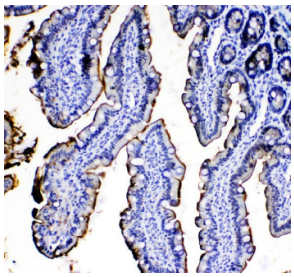
IL-33 Antibody / Interleukin 33 (R32820)

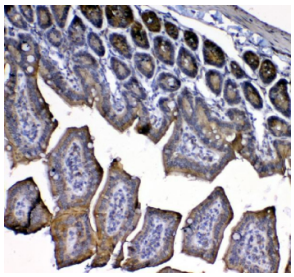
Catalog No.	Formulation	Size
R32820	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

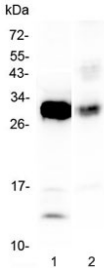
Availability	1-3 business days
Species Reactivity	Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q8BVZ5
Localization	Nuclear, cytoplasmic
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml ELISA (Capture; Recombinant Mouse Protein) : 0.1-0.5ug/ml (BSA-free formulation available)
Limitations	This IL-33 antibody is available for research use only.



Immunohistochemical staining of IL-33 in mouse colon tissue using Il-33 antibody, HRP-conjugated secondary antibody and DAB substrate. Nuclear and cytoplasmic staining is observed in epithelial cells. HIER: steam section in pH8 EDTA buffer for 20 min.



Immunohistochemical staining of mouse colon tissue using IL-33 antibody. Staining was performed with an HRP-conjugated secondary antibody and DAB substrate, with hematoxylin counterstaining. Staining is observed in epithelial and stromal regions. HIER: steam section in pH8 EDTA buffer for 20 min.



Western blot testing of 1) mouse spleen and 2) rat NRK cell lysate with IL-33 antibody at 0.5ug/ml. Predicted molecular weight ~31 kDa.

Description

IL-33 antibody targets Interleukin 33, encoded by the IL33 gene. Interleukin 33 is a member of the IL-1 cytokine family and functions as both a nuclear-associated protein and a secreted cytokine. Unlike many classical cytokines, IL-33 is constitutively expressed in the nuclei of structural cells, including epithelial cells, endothelial cells, and fibroblasts, where it associates with chromatin. Upon cellular stress, damage, or necrosis, IL-33 is released into the extracellular environment, where it acts as an alarmin to alert the immune system to tissue injury.

Functionally, Interleukin 33 plays a central role in initiating and amplifying type 2 immune responses. Extracellular IL-33 signals through the ST2 receptor, a member of the IL-1 receptor family, in combination with the IL-1 receptor accessory protein. This signaling axis activates downstream pathways that promote the production of type 2 cytokines and chemokines. IL-33 strongly influences the activity of innate lymphoid cells type 2, mast cells, eosinophils, basophils, and Th2 lymphocytes, positioning it as a key regulator of immune responses at barrier tissues. An IL-33 antibody supports studies focused on cytokine signaling and innate immune activation.

IL33 expression is highest in tissues exposed to environmental stress, including lung, skin, gastrointestinal tract, and vascular endothelium. In these tissues, IL-33 serves as a sentinel molecule that is rapidly released following mechanical injury, infection, or inflammatory insult. Nuclear localization of IL-33 under homeostatic conditions is thought to limit inappropriate immune activation, while its extracellular release provides a rapid mechanism for immune alert and amplification during tissue damage. This dual localization distinguishes IL-33 from many other cytokines and is central to its biological function.

From a disease-relevance perspective, Interleukin 33 has been extensively implicated in allergic and inflammatory diseases. Elevated IL-33 signaling has been associated with asthma, allergic rhinitis, atopic dermatitis, and other type 2 immune-mediated disorders. IL-33 has also been studied in the context of autoimmune disease, cardiovascular inflammation, fibrosis, and metabolic disorders, reflecting its broad influence on immune and stromal cell interactions. Its role as an alarmin links tissue injury to downstream immune activation, making IL-33 a major focus of inflammation and barrier immunity research.

At the molecular level, Interleukin 33 is synthesized as a full-length protein of approximately 30 to 33 kDa. Unlike IL-1 beta, IL-33 does not require caspase-1 processing for activation, and full-length IL-33 is biologically active. Proteolytic processing by inflammatory proteases can generate shorter, more potent forms with enhanced activity. IL-33 lacks a classical secretion signal peptide, consistent with its release during cell damage rather than conventional secretion pathways. An IL-33 antibody supports research applications focused on inflammation, immune regulation, and tissue homeostasis, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Optimal dilution of the IL-33 antibody should be determined by the researcher.

Immunogen

A recombinant mouse protein corresponding to amino acids A102-I266 was used as the immunogen for the IL-33 antibody.

Storage

After reconstitution, the IL-33 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.