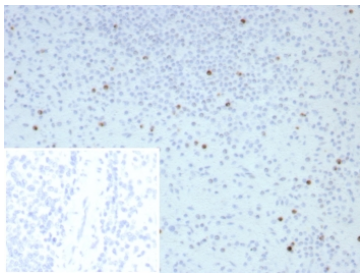
Perforin-1 Antibody / PRF1 [clone PRF1/8662R] (V4102)

Catalog No.	Formulation	Size
V4102-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4102-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4102SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	PRF1/8662R
Purity	Protein A/G affinity
UniProt	P14222
Localization	Cytoplasm
Applications	Immunohistochemistry (FFPE): 1-2ug/ml for 30 minutes at RT
Limitations	This Perforin-1 antibody is available for research use only.



Immunohistochemistry analysis of Perforin-1 antibody in human spleen tissue. Formalin-fixed, paraffin-embedded human spleen stained with Perforin-1 antibody (clone PRF1/8662R) demonstrates discrete cytoplasmic HRP-DAB brown staining in scattered lymphoid cells within the splenic white pulp, consistent with perforin localization in cytotoxic T lymphocytes and natural killer cells. Most surrounding lymphocytes remain negative, highlighting the selective expression pattern of PRF1 in activated cytotoxic populations. The inset image shows the negative control in which PBS was used in place of the primary antibody, confirming absence of non-specific secondary antibody staining. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 9, 10mM Tris with 1mM EDTA for 20 minutes followed by cooling prior to immunostaining.

Description

Perforin-1 antibody recognizes Perforin-1, a pore-forming cytolytic protein encoded by the PRF1 gene. Perforin-1 is a calcium-dependent membrane attack protein primarily expressed in cytotoxic T lymphocytes and natural killer cells, where it localizes to cytoplasmic secretory granules. Upon immune synapse formation, Perforin-1 is released and inserts into target cell membranes, forming transmembrane pores that facilitate entry of granzymes and initiate apoptosis. As a central effector molecule of cell-mediated cytotoxicity, Perforin-1 plays a critical role in antiviral defense, tumor surveillance, and immune regulation.

The PRF1 gene is located on chromosome 10 and encodes a protein that belongs to the membrane attack complex perforin family. Structurally, Perforin-1 contains a membrane attack complex/perforin domain responsible for pore formation, along with calcium-binding regions that regulate membrane insertion. Expression is tightly regulated and is typically enriched in activated CD8-positive T cells and NK cells. Dysregulation or mutation of PRF1 has been associated with immune disorders, including familial hemophagocytic lymphohistiocytosis, underscoring its importance in immune homeostasis.

Perforin-1 antibody is useful for identifying cytotoxic lymphocyte populations in lymphoid tissues and inflammatory lesions. The expected staining pattern is cytoplasmic, reflecting localization within lytic granules of activated immune cells. In tonsil and lymph node, Perforin-1 positive cells are typically scattered within germinal centers and interfollicular regions. A Perforin-1 antibody supports research in tumor immunology, viral infection models, immune-mediated diseases, and studies of cytotoxic effector function.

This Perforin-1 antibody (clone PRF1/8662R) is suitable for detecting PRF1 expression in research applications. Detection of Perforin-1 assists in characterizing cytotoxic immune infiltrates and evaluating functional immune responses in normal and pathological tissues.

Application Notes

Optimal dilution of the Perforin-1 antibody should be determined by the researcher.

Immunogen

A recombinant human Perforin-1 protein fragment (within amino acids 413-552) was used as the immunogen for the Perforin-1 antibody.

Storage

Aliquot the Perforin-1 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

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