

Perforin 1 (H-315): sc-9105

BACKGROUND

The major defense of the body against virus-infected and tumorigenic cells is cytotoxic T lymphocyte (CTL)-mediated cytotoxicity, which also plays a role in autoimmune diseases and transplant rejection. During CTL-mediated cytotoxicity, CTL granules containing perforin are exocytosed. Perforin is a pore-forming protein that facilitates the entry of cytotoxic serine proteases, such as granzymes, into target cells by forming transmembrane channels in target cell membranes. Perforin is primarily expressed in cytotoxic T lymphocytes (CTL) and natural killer (NK) cells, but has also been observed in an astrocyte population of the human brain. It has been shown that abrogation of perforin function by Ca^{2+} -complexing agents leads to decreased levels of necrosis, demonstrating that both necrosis and apoptosis contribute to CTL-mediated cytotoxicity. Perforin activity has been shown to be induced by IL-2, IL-3, IL-4, IL-6 and to a lesser degree, TNF and IFN- γ .

CHROMOSOMAL LOCATION

Genetic locus: PRF1 (human) mapping to 10q22.1; Prf1 (mouse) mapping to 10 B4.

SOURCE

Perforin 1 (H-315) is a rabbit polyclonal antibody raised against amino acids 241-555 mapping at the C-terminus of Perforin 1 of human origin.

PRODUCT

Each vial contains 200 μg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Perforin 1 (H-315) is recommended for detection of Perforin 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Perforin 1 siRNA (h): sc-42592, Perforin 1 siRNA (m): sc-42593, Perforin 1 siRNA (r): sc-270073, Perforin 1 shRNA Plasmid (h): sc-42592-SH, Perforin 1 shRNA Plasmid (m): sc-42593-SH, Perforin 1 shRNA Plasmid (r): sc-270073-SH, Perforin 1 shRNA (h) Lentiviral Particles: sc-42592-V, Perforin 1 shRNA (m) Lentiviral Particles: sc-42593-V and Perforin 1 shRNA (r) Lentiviral Particles: sc-270073-V.

Molecular Weight of Perforin 1: 75 kDa.

Positive Controls: Mouse brain extract: sc-2253, Jurkat whole cell lysate: sc-2204 or rat brain extract: sc-2392.

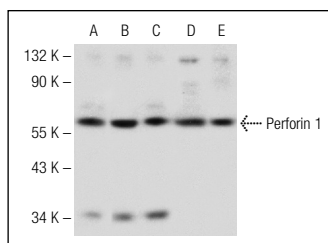
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

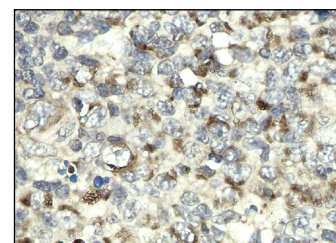
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



Perforin 1 (H-315): sc-9105. Western blot analysis of Perforin 1 expression in Jurkat (A), NK-92 (B) and SUP-T1 (C) whole cell lysates and rat brain (D) and mouse brain (E) tissue extracts.



Perforin 1 (H-315): sc-9105. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Liu, K., et al. 2002. IL-15 mimics T cell receptor crosslinking in the induction of cellular proliferation, gene expression, and cytotoxicity in CD8⁺ memory T cells. *Proc. Natl. Acad. Sci. USA* 99: 6192-6197.
2. Risma, K.A., et al. 2006. Aberrant maturation of mutant perforin underlies the clinical diversity of hemophagocytic lymphohistiocytosis. *J. Clin. Invest.* 116: 182-192.
3. Lu, Y., et al. 2007. Immunological protection against HPV16 E7-expressing human esophageal cancer cell challenge by a novel HPV16-E6/E7 fusion protein based-vaccine in a Hu-PBL-SCID mouse model. *Biol. Pharm. Bull.* 30: 150-156.
4. Fowler, K.T., et al. 2007. Expression and function of Synaptotagmin VII in CTLs. *J. Immunol.* 178: 1498-1504.
5. Deschaumes, C., et al. 2007. CD95 ligand-dependant endothelial cell death initiates oral mucosa damage in a murine model of acute graft versus host disease. *Lab. Invest.* 87: 417-429.
6. Krogerus, L., et al. 2008. CMV increases tubular apoptosis through the TNF- α -TNF-R1 pathway in a rat model of chronic renal allograft rejection. *Transpl. Immunol.* 18: 232-236.
7. Engelmann, D., et al. 2009. Transcriptome analysis in mouse tumors induced by Ret-MEN2/FMTC mutations reveals subtype-specific role in survival and interference with immune surveillance. *Endocr. Relat. Cancer* 16: 211-224.
8. Costa, N.L., et al. 2011. Distinct expression of perforin and granzyme B in lip and oral cavity squamous cell carcinoma. *J. Oral Pathol. Med.* 40: 380-384.

MONOS
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Try **Perforin 1 (F-1): sc-136994** or **Perforin 1 (E-5): sc-374346**, our highly recommended monoclonal alternatives to Perforin 1 (H-315).