

Perforin 1 (E-5): sc-374346

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 Ca²⁺-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 (E-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 529-554 at the C-terminus of Perforin 1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-374346 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Perforin 1 (E-5) is recommended for detection of Perforin 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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.

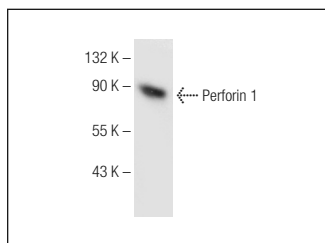
Molecular Weight of Perforin 1: 75 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, CTLL-2 cell lysate: sc-2242 or rat brain extract: sc-2392.

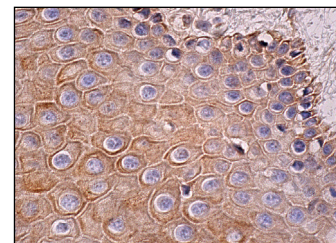
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Perforin 1 (E-5): sc-374346. Western blot analysis of Perforin 1 expression in CTLL-2 whole cell lysate.



Perforin 1 (E-5): sc-374346. Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing cytoplasmic staining of squamous epithelial cells.

SELECT PRODUCT CITATIONS

- Frederick, D.T., et al. 2013. BRAF inhibition is associated with enhanced melanoma antigen expression and a more favorable tumor microenvironment in patients with metastatic melanoma. *Clin. Cancer Res.* 19: 1225-1231.
- Schmitz, E.J., et al. 2017. Sebaceous gland carcinoma of the ocular adnexa-variability in clinical and histological appearance with analysis of immunohistochemical staining patterns. *Graefes Arch. Clin. Exp. Ophthalmol.* 255: 2277-2285.
- Barrientos, G., et al. 2017. Defective trophoblast invasion underlies fetal growth restriction and preeclampsia-like symptoms in the stroke-prone spontaneously hypertensive rat. *Mol. Hum. Reprod.* 23: 509-519.
- Gong, Y.Y., et al. 2022. Na⁺/H⁺-exchanger 1 enhances antitumor activity of engineered NK-92 natural killer cells. *Cancer Res. Commun.* 2: 842-856.

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.