

# 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  $Ca^{2+}$ -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- $\gamma$ .

## 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  $\mu$ g IgG<sub>2b</sub> 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  $\mu$ 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  $\mu$ g per 100-500  $\mu$ 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.

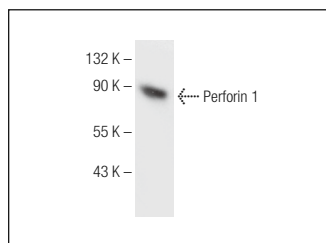
Molecular Weight of Perforin 1: 75 kDa.

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

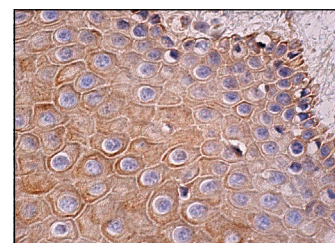
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 $\kappa$  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<sup>+</sup>/H<sup>+</sup>-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.