SANTA CRUZ BIOTECHNO

# Perforin 1 (δG9): sc-33655

## 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.

## REFERENCES


1. Liu, C.C., et al. 1990. Induction of Perforin and serine esterases in a murine cytotoxic T lymphocyte clone. J. Immunol. 144: 1196-1201.
2. Podack, E.R., et al. 1991. A central role of Perforin in cytolysis? Annu. Rev. Immunol. 9: 129-157.


## CHROMOSOMAL LOCATION

Genetic locus: PRF1 (human) mapping to 10q22.1.

## SOURCE

Perforin 1 (δG9) is a mouse monoclonal antibody raised against purified granules from the lymphoma line YT of human origin.

## PRODUCT

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

Perforin 1 (δG9) is available conjugated to either phycoerythrin (sc-33655 PE) or fluorescein (sc-33655 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

## APPLICATIONS

Perforin 1 (δG9) is recommended for detection of Perforin 1 of human and rat 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) and flow cytometry (1 µg per 1 x $10^6$ cells); non cross-reactive with mouse Perforin 1.

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

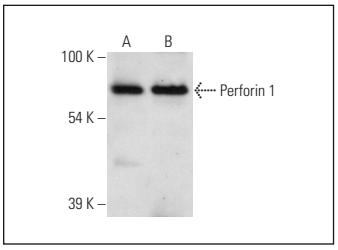
Molecular Weight of Perforin 1: 75 kDa.

Positive Controls: NK-92 whole cell lysate, Jurkat whole cell lysate: sc-2204 or rat brain extract: sc-2392.

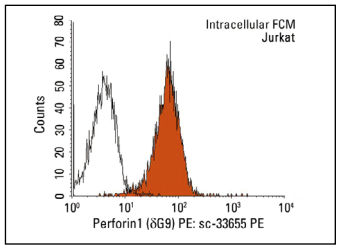
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA




Western blot analysis of Perforin 1 expression in Jurkat whole cell lysate (**A**) and rat brain tissue extract (**B**) immunoprecipitated with Perforin 1 (δG9): sc-33655 and detected with Perforin 1 (H-315): sc-9105.




Perforin1 (δG9) PE: sc-33655 PE. Intracellular FCM analysis of fixed and permeabilized Jurkat cells. Black line histogram represents the isotype control, normal mouse $IgG_{2b}$-PE: sc-2868.

## SELECT PRODUCT CITATIONS


1. Jha, S.S., et al. 2015. Knockdown of T-bet expression in Mart-$1_{27-35}$-specific T-cell-receptor-engineered human $CD4^+$ $CD25^-$ and $CD8^+$ T cells attenuates effector function. Immunology 145: 124-135.
2. Genbler, S., et al. 2016. Dual targeting of glioblastoma with chimeric antigen receptor-engineered natural killer cells overcomes heterogeneity of target antigen expression and enhances antitumor activity and survival. Oncoimmunology 5: e1119354.
3. Babaer, D., et al. 2019. Oligodeoxynucleotides ODN 2006 and M362 exert potent adjuvant effect through TLR-9/-6 synergy to exaggerate mammaglobin-A peptide specific cytotoxic $CD8^+$ T lymphocyte responses against breast cancer cells. Cancers 11: 672.


## 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.

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.