SANTA CRUZ BIOTECHNOLOGY, INC.

granzyme M (C-12): sc-393155

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The granzyme family of proteins belong to the larger peptidase S1 family. Granzyme A and granzyme B are serine proteases that facilitate apoptotic signaling in cytotoxic T lymphocytes (CTL) and natural killer (NK) cells. Within the granules of activated CTLs, granzyme A and granzyme B are processed and converted to their active forms by the lysosomal cysteine protease cathepsin C. Once cleaved, these active proteases target distinct substrates for proteolysis, thereby mediating apoptosis through two different pathways. Granzyme H localizes to cytoplasmic granules of cytolytic T lymphocytes and is important for target cell lysis in cell-mediated immune responses. Granzyme K is a serine protease localizing to the granules of NK cells and cytotoxic T lymphocytes. Granzyme M (also designated NK cell granular protease, HU-Met-1 or met-1 serine protease) contains one peptidase S1 domain. Granzyme M is a Trypsin-fold serine protease that localizes to granules of large granular lymphocytes (NK cells) and cleaves peptide substrates after leucine, norleucine or methionine. This enzyme may play a role in target cell death induction by cytotoxic lymphocytes.

REFERENCES

1. Mahrus, S., et al. 2004. Granzyme M is a regulatory protease that inactivates proteinase inhibitor 9, an endogenous inhibitor of granzyme B. J. Biol. Chem. 279: 54275-54282.
2. Bade, B., et al. 2005. Differential expression of the granzymes A, K and M and perforin in human blood lymphocytes. Int. Immunol. 17: 1419-1428.
3. Pao, L.I., et al. 2005. Functional analysis of granzyme M and its role in immunity to infection. J. Immunol. 175: 3235-3243.
4. Suck, G., et al. 2005. KHYG-1, a model for the study of enhanced natural killer cell cytotoxicity. Exp. Hematol. 33: 1160-1171.
5. Bots, M., et al. 2005. SPI-CI and SPI-6 cooperate in the protection from effector cell-mediated cytotoxicity. Blood 105: 1153-1161.
6. Bots, M., et al. 2006. Serpins prevent granzyme-induced death in a species-specific manner. Immunol. Cell Biol. 84: 79-86.

CHROMOSOMAL LOCATION

Genetic locus: GZMM (human) mapping to 19p13.3.

SOURCE

granzyme M (C-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 89-126 within an internal region of granzyme M 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.

Blocking peptide available for competition studies, sc-393155 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

granzyme M (C-12) is recommended for detection of granzyme M of human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for granzyme M siRNA (h): sc-60761, granzyme M shRNA Plasmid (h): sc-60761-SH and granzyme M shRNA (h) Lentiviral Particles: sc-60761-V.

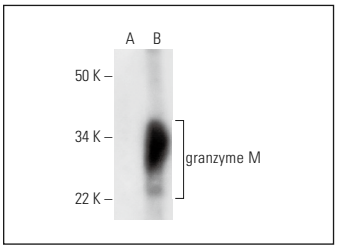
Molecular Weight of granzyme M: 33 kDa.

Positive Controls: granzyme M (h): 293T Lysate: sc-114142.

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



granzyme M (C-12): sc-393155. Western blot analysis of granzyme M expression in non-transfected: sc-117752 (**A**) and human granzyme M transfected: sc-114142 (**B**) 293T whole cell lysates.

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.