SANTA CRUZ BIOTECHNOLOGY, INC.

granzyme M (P-15): sc-51100

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 and, thereby, mediate 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 natural killer cells and cytotoxic T lymphocytes. Granzyme M, also designated natural killer 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 (natural killer 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 (mouse) mapping to 10 C.

SOURCE

granzyme M (P-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of granzyme M of rat origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-51100 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

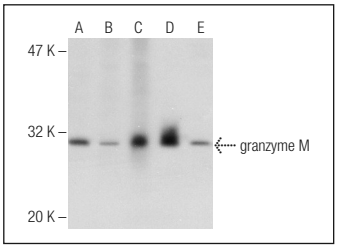
granzyme M (P-15) is recommended for detection of granzyme M of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for granzyme M siRNA (m): sc-60762, granzyme M shRNA Plasmid (m): sc-60762-SH and granzyme M shRNA (m) Lentiviral Particles: sc-60762-V.

Molecular Weight of granzyme M: 33 kDa.

Positive Controls: CTLL-2 cell lysate: sc-2242, RAW 264.7 whole cell lysate: sc-2211 or rat PBL whole cell lysate.

DATA



granzyme M (P-15): sc-51100. Western blot analysis of granzyme M expression in RAW 264.7 (**A**), mouse PBL (**B**), rat PBL (**C**), RBL-1 (**D**) and M1 (**E**) 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.

PROTOCOLS

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