SANTA CRUZ BIOTECHNOLOGY, INC.

granzyme K (M-45): sc-292191

BACKGROUND

The granzyme family of proteins belong to the larger peptidase S_1 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 (GMZK), also designated granzyme 3 or NK-Tryptase-2 (NK-TRYP-2), contains one peptidase S1 domain. Granzyme K is a serine protease localizing to the granules of natural killer cells and cytotoxic T lymphocytes. It is primarily expressed in thymus, lung, spleen and peripheral blood leukocytes.

REFERENCES

1. Hameed, A., et al. 1988. Characterization of three serine esterases isolated from human IL-2 activated killer cells. J. Immunol. 141: 3142-3147.
2. Shi, L., et al. 1993. Purification of three cytotoxic lymphocyte granule serine proteases that induce apoptosis through distinct substrate and target cell interactions. J. Exp. Med. 176: 1521-1529.
3. Przetak, M.M., et al. 1995. Cloning of cDNA for human granzyme 3. FEBS Lett. 364: 268-271.
4. Sayers, T.J., et al. 1996. Cloning and expression of a second human natural killer cell granule tryptase, HNK-Tryp-2/granzyme 3. J. Leukoc. Biol. 59: 763-768.
5. Wilharm, E., et al. 1999. Generation of catalytically active granzyme K from *Escherichia coli* inclusion bodies and identification of efficient granzyme K inhibitors in human plasma. J. Biol. Chem. 274: 27331-27337.
6. Hink-Schauer, C., et al. 2002. The 2.2-A crystal structure of human pro-granzyme K reveals a rigid zymogen with unusual features. J. Biol. Chem. 277: 50923-50933.
7. Haddad, H., et al. 2004. Molecular understanding of oxygen-tension and patient-variability effects on *ex vivo* expanded T cells. Biotechnol. Bioeng. 87: 437-450.
8. Hirata, Y., et al. 2006. Expression of enzymatically active human granzyme 3 in *Escherichia coli* for analysis of its substrate specificity. Arch. Biochem. Biophys. 446: 35-43.

CHROMOSOMAL LOCATION

Genetic locus: Gzmk (mouse) mapping to 13 D2.2.

SOURCE

granzyme K (M-45) is a rabbit polyclonal antibody raised against amino acids 121-165 mapping within an internal region of granzyme K of mouse origin.

PRODUCT

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

APPLICATIONS

granzyme K (M-45) is recommended for detection of granzyme K 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 K siRNA (m): sc-60760, granzyme K shRNA Plasmid (m): sc-60760-SH and granzyme K shRNA (m) Lentiviral Particles: sc-60760-V.

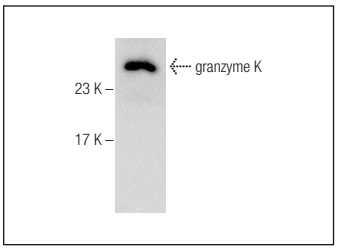
Molecular Weight of granzyme K: 28 kDa.

Positive Controls: Mouse PBL whole cell lysate.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



granzyme K (M-45): sc-292191. Western blot analysis of granzyme K expression in mouse PBL whole cell lysate.

RESEARCH USE

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

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.