

granzyme K (C-12): sc-49021

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 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

- Hameed, A., Lowrey, D.M., Lichtenheld, M. and Podack, E.R. 1988. Characterization of three serine esterases isolated from human IL-2 activated killer cells. *J. Immunol.* 141: 3142-3147.
- Shi, L., Kam, C.M., Powers, J.C., Aebersold, R. and Greenberg, A.H. 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.
- Przetak, M.M., Yoast, S. and Schmidt, B.F. 1995. Cloning of cDNA for human granzyme 3. *FEBS Lett.* 364: 268-271.
- Sayers, T.J., Lloyd, A.R., McVicar, D.W., O'Connor, M.D., Kelly, J.M., Carter, C.R., Wiltrout, T.A., Wiltrout, R.H. and Smyth, M.J. 1996. Cloning and expression of a second human natural killer cell granule tryptase, HNK-Tryp-2/granzyme 3. *J. Leukoc. Biol.* 59: 763-768.
- Jenne, D.E. 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.
- Wilharm, E., Parry, M.A., Friebel, R., Tschesche, H., Matschiner, G., Sommerhoff, C.P., Hink-Schauer, C., Estebanez-Perpiñá, E., Wilharm, E., Fuentes-Prior, P., Klinkert, W., Bode, W. and Jenne, D.E. 2002. The 2.2-Å crystal structure of human pro-granzyme K reveals a rigid zymogen with unusual features. *J. Biol. Chem.* 277: 50923-50933.
- Haddad, H., Windgassen, D., Ramsborg, C.G., Paredes, C.J. and Papoutsakis, E.T. 2004. Molecular understanding of oxygen-tension and patient-variability effects on *ex vivo* expanded T cells. *Biotechnol. Bioeng.* 87: 437-450.

CHROMOSOMAL LOCATION

Genetic locus: GZMK (human) mapping to 5q11-q12; Gzmk (mouse) mapping to 13 D2.2.

SOURCE

granzyme K (C-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of granzyme K of human 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-49021 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

granzyme K (C-12) is recommended for detection of granzyme K of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 (h): sc-60759, granzyme K siRNA (m): sc-60760, granzyme K shRNA Plasmid (h): sc-60759-SH, granzyme K shRNA Plasmid (m): sc-60760-SH, granzyme K shRNA (h) Lentiviral Particles: sc-60759-V and granzyme K shRNA (m) Lentiviral Particles: sc-60760-V.

Molecular Weight of granzyme K: 28 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.


 MONOS
 Satisfation
 Guaranteed

Try **granzyme K (GM6C3): sc-56125**, our highly recommended monoclonal alternative to granzyme K (C-12).