SANTA CRUZ BIOTECHNOLOGY, INC.

granzyme K (GM6C3): sc-56125

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 (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.

CHROMOSOMAL LOCATION

Genetic locus: GZMK (human) mapping to 5q11.2.

SOURCE

granzyme K (GM6C3) is a mouse monoclonal antibody raised against granzyme K 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.

granzyme K (GM6C3) is available conjugated to agarose (sc-56125 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-56125 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-56125 PE), fluorescein (sc-56125 FITC), Alexa Fluor® 488 (sc-56125 AF488), Alexa Fluor® 546 (sc-56125 AF546), Alexa Fluor® 594 (sc-56125 AF594) or Alexa Fluor® 647 (sc-56125 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-56125 AF680) or Alexa Fluor® 790 (sc-56125 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

granzyme K (GM6C3) is recommended for detection of granzyme K transiently expressed on the cell surface of transfected BOSC cells as well as the native protein in peripheral blood mononuclear cells of human origin by flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for granzyme K siRNA (h): sc-60759, granzyme K shRNA Plasmid (h): sc-60759-SH and granzyme K shRNA (h) Lentiviral Particles: sc-60759-V.

Molecular Weight of granzyme K: 28 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

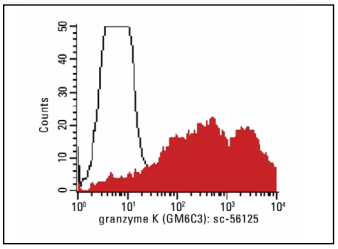
STORAGE

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.

DATA



granzyme K (GM6C3): sc-56125. Indirect FCM analysis of BOCS23 cells stained with granzyme K (GM6C3), followed by PE-conjugated anti-mouse IgG. Black line histogram represents the control transfectant, irrelevant protein.

SELECT PRODUCT CITATIONS

1. Harari, A., et al. 2009. Distinct profiles of cytotoxic granules in memory CD8 T cells correlate with function, differentiation stage, and antigen exposure. J. Virol. 83: 2862-2871.
2. Béziat, V., et al. 2010. NK cell terminal differentiation: correlated stepwise decrease of NKG2A and acquisition of KIRs. PLoS ONE 5: e11966.
3. Béziat, V., et al. 2011. $CD56^{bright}CD16^{+}$ NK cells: a functional intermediate stage of NK cell differentiation. J. Immunol. 186: 6753-6761.
4. Breinig, T., et al. 2012. Human yeast-specific CD8 T lymphocytes show a nonclassical effector molecule profile. Med. Microbiol. Immunol. 201: 127-136.
5. Chiang, S.C., et al. 2013. Comparison of primary human cytotoxic T-cell and natural killer cell responses reveal similar molecular requirements for lytic granule exocytosis but differences in cytokine production. Blood 121: 1345-1356.
6. Achour, A., et al. 2014. Expansion of CMV-mediated $NKG2C^{+}$ NK cells associates with the development of specific de novo malignancies in liver-transplanted patients. J. Immunol. 192: 503-511.
7. Baychelier, F., et al. 2015. Natural killer cell deficiency in patients with non-Hodgkin lymphoma after lung transplantation. J. Heart Lung Transplant. 34: 604-612.
8. Kiniry, B.E., et al. 2018. Differential expression of $CD8^{+}$ T cell cytotoxic effector molecules in blood and gastrointestinal mucosa in HIV-1 infection. J. Immunol. 200: 1876-1888.
9. Bengsch, B., et al. 2018. Deep immune profiling by mass cytometry links human T and NK cell differentiation and cytotoxic molecule expression patterns. J. Immunol. Methods 453: 3-10.

PROTOCOLS

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