

# granzyme H (T-21): sc-133636

## 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, also designated cytotoxic T-lymphocyte proteinase, cathepsin G-like 2 (CTSG2) or cytotoxic serine protease C (CSP-C), contains one peptidase S1 domain. Granzyme H localizes to cytoplasmic granules of cytolytic T-lymphocytes and is important for target cell lysis in cell-mediated immune responses.

## REFERENCES

- Shresta, S., et al. 1995. Natural killer and lymphokine-activated killer cells require granzyme B for the rapid induction of apoptosis in susceptible target cells. *Proc. Natl. Acad. Sci. USA* 92: 5679-5683.
- Trapani, J.A., et al. 1996. A putative role in the mechanism of cytotoxic lymphocyte-mediated apoptosis. Localization of granzyme B in the nucleus. *J. Biol. Chem.* 271: 4127-4133.
- Pham, C.T., et al. 1999. Dipeptidyl peptidase I is required for the processing and activation of granzymes A and B *in vivo*. *Proc. Natl. Acad. Sci. USA* 96: 8627-8632.
- Shresta, S., et al. 1999. Granzyme A initiates an alternative pathway for granule-mediated apoptosis. *Immunity* 10: 595-605.
- Edwards, K.M., et al. 1999. The human cytotoxic T cell granule serine protease granzyme H has chymotrypsin-like (chymase) activity and is taken up into cytoplasmic vesicles reminiscent of granzyme B-containing endosomes. *J. Biol. Chem.* 274: 30468-30473.
- Sedelies, K.A., et al. 2004. Discordant regulation of granzyme H and granzyme B expression in human lymphocytes. *J. Biol. Chem.* 279: 26581-26587.

## CHROMOSOMAL LOCATION

Genetic locus: GZMH (human) mapping to 14q12.

## SOURCE

granzyme H (T-21) is a Protein A purified rabbit polyclonal antibody raised against synthetic granzyme H peptide of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

granzyme H (T-21) is recommended for detection of granzyme H of human 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), immunohistochemistry (including paraffin-embedded sections) (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 H siRNA (h): sc-60757, granzyme H shRNA Plasmid (h): sc-60757-SH and granzyme H shRNA (h) Lentiviral Particles: sc-60757-V.

Molecular Weight (predicted) of granzyme H: 27 kDa.

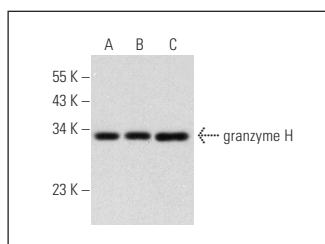
Molecular Weight (observed) of granzyme H: 36 kDa.

Positive Controls: NK-92 whole cell lysate: sc-364788, K-562 whole cell lysate: sc-2203 or Raji whole cell lysate: sc-364236.

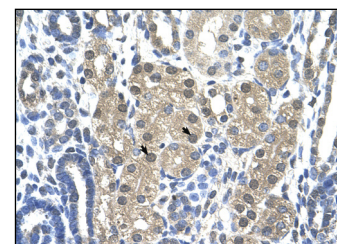
## RECOMMENDED SECONDARY REAGENTS

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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



granzyme H (T-21): sc-133636. Western blot analysis of granzyme H expression in NK-92 (A), K-562 (B) and Raji (C) whole cell lysates.



granzyme H (T-21): sc-133636. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human kidney tissue showing nuclear and cytoplasmic localization.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.