# granzyme N (G-12): sc-103535



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. Granzyme H localizes to cytoplasmic granules of CTLs and is important for target cell lysis in cell-mediated immune responses. Granzyme K is a serine protease localizing to the granules of NK cells and CTLs. Granzyme M is a trypsin-fold serine protease that localizes to granules of NK cells and cleaves peptide substrates after leucine, norleucine or methionine. Granzyme G is a serine protease expressed on mature CTLs. Granzyme N, also known as GrN or Gzmn, is a 248 amino acid secretory and N-glycosylated protein that is expressed in spermatocytes and spermatids. Existing as two isoforms as a result of alternative splicing events, Granzyme N may be involved in spermatogenesis.

# **REFERENCES**

- Jenne, D.E., Masson, D., Zimmer, M., Haefliger, J.A., Li, W.H. and Tschopp, J. 1989. Isolation and complete structure of the lymphocyte serine protease granzyme G, a novel member of the granzyme multigene family in murine cytolytic T lymphocytes. Evolutionary origin of lymphocyte proteases. Biochemistry 28: 7953-7961.
- Woodard, S.L., Fraser, S.A., Winkler, U., Jackson, D.S., Kam, C.M., Powers, J.C. and Hudig, D. 1998. Purification and characterization of lymphocyte chymase I, a granzyme implicated in perforin-mediated lysis. J. Immunol. 160: 4988-4993.
- Takano, N., Matusi, H. and Takahashi, T. 2004. Granzyme N, a novel granzyme, is expressed in spermatocytes and spermatids of the mouse testis. Biol. Reprod. 71: 1785-1795.
- Revell, P.A., Grossman, W.J., Thomas, D.A., Cao, X., Behl, R., Ratner, J.A., Lu, Z.H. and Ley, T.J. 2005. Granzyme B and the downstream granzymes C and/or F are important for cytotoxic lymphocyte functions. J. Immunol. 174: 2124-2131.
- Sutton, V.R., Waterhouse, N.J., Browne, K.A., Sedelies, K., Ciccone, A., Anthony, D., Koskinen, A., Mullbacher, A. and Trapani, J.A. 2007. Residual active granzyme B in cathepsin C-null lymphocytes is sufficient for perforindependent target cell apoptosis. J. Cell Biol. 176: 425-433.
- Rosenblum, M.G. and Barth, S. 2009. Development of novel, highly cytotoxic fusion constructs containing granzyme B: unique mechanisms and functions. Curr. Pharm. Des. 15: 2676-2692.
- 7. Wu, L., Wang, L., Hua, G., Liu, K., Yang, X., Zhai, Y., Bartlam, M., Sun, F. and Fan, Z. 2009. Structural basis for proteolytic specificity of the human apoptosis-inducing granzyme M. J. Immunol. 183: 421-429.

## CHROMOSOMAL LOCATION

Genetic locus: Gzmn (mouse) mapping to 14 C3.

# SOURCE

granzyme N (G-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of granzyme N of mouse origin.

#### **PRODUCT**

Each vial contains 200  $\mu g$  IgG in 1.0 ml of PBS with <0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-103535 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## **APPLICATIONS**

granzyme N (G-12) is recommended for detection of granzyme N of mouse and rat 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); non cross-reactive with other granzyme family members.

Suitable for use as control antibody for granzyme N siRNA (m): sc-105415, granzyme N shRNA Plasmid (m): sc-105415-SH and granzyme N shRNA (m) Lentiviral Particles: sc-105415-V.

Molecular Weight of granzyme N: 31 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.

Santa Cruz Biotechnology, Inc. 1.800.457.3801 831.457.3801 fax 831.457.3801 Europe +00800 4573 8000 49 6221 4503 0 www.scbt.com