Anti-Granzyme B

Cat #: HM1166
Mouse monoclonal IgG
0.2 μg/μl, store at 4 °C

For research use only

BACKGROUND
Granzymes (A and B) are serine proteases that mediate apoptotic signaling in cytotoxic T lymphocytes (CTL) and natural killer (NK) cells. They induce apoptosis by two distinct pathways. Granzyme A mediates the activation of apoptosis by inducing single-strand DNA breaks, membrane perturbation and nuclear condensations in a pathway that is independent from caspase activation. Granzyme B proteolytically cleaves and activates members of the caspase family of cysteine proteases, including caspase-3, caspase-6, caspase-7 and caspase-9. When cleaved, these caspases assemble into activate holoenzymes that then mediate apoptosis through a defined proteolytic cascade involving nuclear lamins and PARP (poly ADP ribose polymerase).

SPECIFICITY
This antibody reacts with granzyme B of mouse, rat and human origin by Western blotting, immunoprecipitation and immunohistochemistry.

Recommended dilution for Western blotting: 1:1000. Molecular weight of Granzyme B: 26-32 kDa.

IMMUNOGEN
Full length human granzyme B recombinant protein.

STORAGE
This antibody is stable for 12 months when stored at 2-8°C.

REFERENCES
1. Trapani, J.A., Browne, K.A., Smyth, M.J., and Jans, D.A. 1996. A putative role in the mechanism of cytotoxic lymphocytemediated apoptosis. Localization of granzyme B in the nucleus. J. Biol. Chem. 271: 4127-4133.
2. Shresta, S., MacIvor, D.M., Heusel, J.W., Russell, J.H., and Ley, T.J. 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.
3. Pham, C.T. and Ley, T.J. 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.
4. Trapani, J.A., Jans, D.A., Jans, P.J., Smyth, M.J., Browne, K.A., and Sutton, V.R. 1998. Efficient nuclear targeting of granzyme B and the nuclear consequences of apoptosis induced by granzyme B and perforin are caspase-dependent, but cell death is caspaseindependent. J. Biol. Chem. 273: 27934-27938.
5. Atkinson, E.A., Barry, M., Darmon, A.J., Shostak, I., Turner, P.C., Moyer, R.W., and Bleackley, R.C. 1998. Cytotoxic T lymphocyte-assisted suicide. Caspase 3 activation is primarily the result of the direct action of granzyme B. J. Biol. Chem. 273: 21261-21266.
6. Shresta, S., Graubert, T.A., Thomas, D.A., Raptis, S.Z., and Ley, T.J. 1999. Granzyme A initiates an alternative pathway for granule-mediated apoptosis. Immunity. 10: 595-605.
7. Beresford, P.J., Xia, Z., Greenberg, A.H., and Lieberman, J. 1999. Granzyme A loading induces rapid cytolysis and a novel form of DNA damage independently of caspase activation. Immunity 10: 585-594.
8. Goping,I.S., Barry,M., Liston,P., Sawchuk,T., Constantinescu,G., Michalak,K.M., Shostak,I., Roberts,D.L., Hunter,A.M., Korneluk,R. and Bleackley,R.C. (2003) Granzyme B-induced apoptosis requires both direct caspase activation and relief of caspase inhibition. Immunity 18, 355-365.
9. Han,J., Goldstein,L.A., Gastman,B.R., Froelich,C.J., Yin,X.M. and Rabinowich,H. (2004) Degradation of Mcl-1 by granzyme B: implications for Bim-mediated mitochondrial apoptotic events. J. Biol. Chem. 279, 22020-22029.

PRODUCT FROM HYPROMATRIX, INC.

A. AntibodyArray™s:
1. Signal Transduction AntibodyArray™
   Catalog Number HM3000
2. Apoptosis AntibodyArray™
   Catalog Number HM4000
3. Cell Cycle AntibodyArray™
   Catalog Number HM5000

B. Staining AntibodyArray™s
1. Staining AntibodyArray™ I
   Catalog Number HM8100
2. AntibodyArray Staining Apparatus
   Catalog Number HM8000

C. Antibodies
1. HRP-conjugated antibodies
- anti-phosphotyrosine
  Catalog Number HM2040
- anti-phosphoserine
  Catalog Number HM2070
- anti-phosphothreonine
  Catalog Number HM2090

and more…

2. Primary antibodies
Hypromatrix offers a variety of high quality antibodies. For a complete list of antibodies and their specificities, please visit our web site at www.hypromatrix.com.

CONTACT

Hypromatrix, Inc.
100 Barber Avenue
Worcester, MA 01606
USA

Tel: 508-856-7900
Fax: 508-302-0748
Email: contact@hypromatrix.com
Web: www.hypromatrix.com