Revision 1

Store at -20C

#18268

Granzyme H (E4T2E) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Endogenous	25-35	Rabbit IgG	#P20718	2999

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

Specificity/Sensitivity

Granzyme H (E4T2E) Rabbit mAb recognizes endogenous levels of total Granzyme H protein. This antibody does not cross-react with human Granzyme A, B, K, or M proteins.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gln195 of human Granzyme H protein.

Background

Granzymes are a family of serine proteases expressed by cytotoxic T lymphocytes and natural killer (NK) cells and are key components of immune responses to pathogens and transformed cells (1). Granzymes are synthesized as zymogens and are processed into mature enzymes by cleavage of a leader sequence. They are released by exocytosis in lysosome-like granules containing perforin, a membrane pore-forming protein. Granzyme B has the strongest apoptotic activity of all the granzymes as a result of its caspase-like ability to cleave substrates at aspartic acid residues thereby activating procaspases directly and cleaving downstream caspase substrates (2,3).
Granzyme H has chymotrypsin-like thioester activity with a preference for hydrophobic, aromatic amino acid residues, such as phenylalanine, tyrosine, or methionine, at the P1 site (4,5). Granzyme H is predominantly expressed at high levels in NK cells, but not in T lymphocytes, and has also been described in mast cells (6-8). After perforin-mediated entry into a target cell, Granzyme H induces many hallmarks of programmed cell death, such as mitochondrial depolarization, generation of reactive oxygen species, DNA degradation, and chromatin condensation (9,10).

Background References

1. Trapani, J.A. (2001) *Genome Biol.* 2, REVIEWS 3014.
2. Lord, S.J. et al. (2003) *Immunol. Rev.* 193, 31-8.
3. Trapani, J.A. and Sutton, V.R. (2003) *Curr. Opin. Immunol.* 15, 533-43.
4. Edwards, K.M. et al. (1999) *J Biol Chem* 274, 30468-73.
5. Mahrus, S. and Craik, C.S. (2005) *Chem Biol* 12, 567-77.
6. Sedelies, K.A. et al. (2004) *J Biol Chem* 279, 26581-7.
7. Bade, B. et al. (2005) *Int Immunol* 17, 1419-28.
8. Rönnberg, E. et al. (2014) *Int Arch Allergy Immunol* 165, 68-74.
9. Fellows, E. et al. (2007) *Blood* 110, 544-52.
10. Hou, Q. et al. (2008) *Mol Immunol* 45, 1044-55.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human

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