Product Data Sheet

anti-human Granzyme B monoclonal antibody

Product information

Catalog Number:	GM-0201
Clone:	GM-4C1
Description:	purified monoclonal mouse antibody
Specificity:	anti-human Granzyme B (GrB, granzyme 2, cytotoxic T-lymphocyte-associated serine esterase 1)
Isotype:	IgG1
Purification:	Protein G
Storage:	short term: 2°C - 8°C; long term: -20°C (avoid repeated freezing and thawing)
Buffer :	phosphate buffered saline, pH 7.2
Immunogen:	genetic immunisation with cDNA encoding human Granzyme B
Selection:	based on recognition of the complete **native protein** expressed on transfected mammalian cells

Working dilutions

Flow cytometry:	1.2 µg/10^6 cells
ELISA:	1:200 - 1:400
CELISA:	1:200 - 1:400

For each application a titration should be performed to determine the optimal concentration.

Specificity testing by flow cytometry

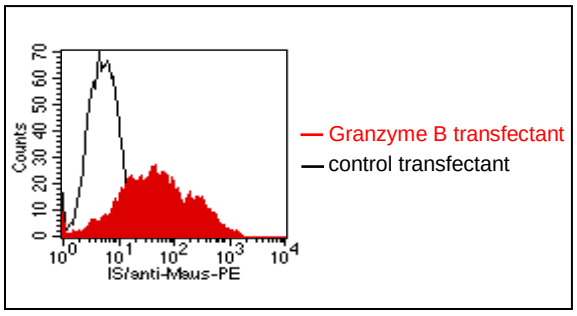

Fig.1: FACS analysis of BOSC23 cells using GM-4C1 Cat.# GM-0201. BOSC23 cells were transiently transfected with an expression vector encoding either Granzyme B (red curve) or an irrelevant protein (control transfectant: black curve). Binding of GM-4C1 was detected with a PE-conjugated secondary antibody. A positive signal was obtained only with Granzyme B transfected cells.

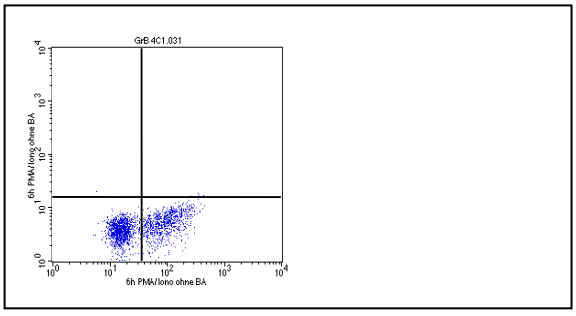

Fig.2: Intracellular detection of granzyme B in human PBMC by FACS analysis using GM-4C1. PBMC were cultivated in the presence of phorbolester and ionomycin subsequently fixed and permeabilised. Binding of GM-4C1 was detected with a FITC-conjugated secondary antibody.

For research use only. Not for diagnostic or therapeutic use.

Antibody cross-reactivity with members of the Granzyme family

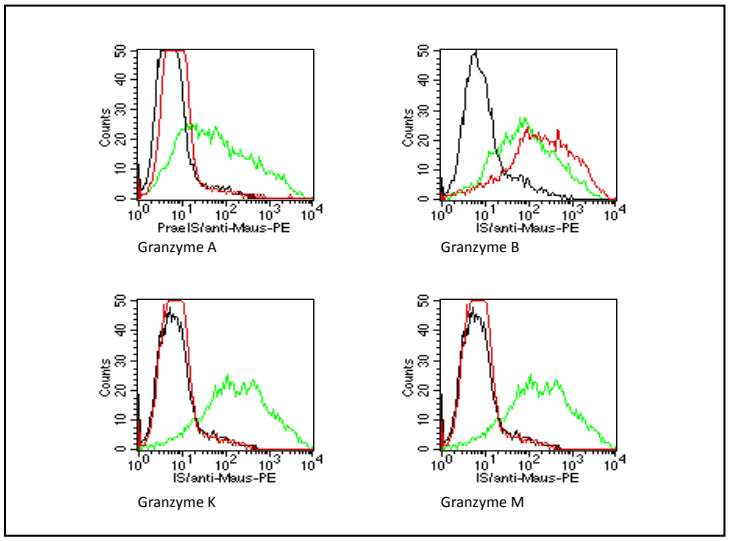

Fig3: BOSC cells were transiently transfected with expression vectors for Granzyme A, B, K, or M. Expression of the constructs was tested with an anti-tag monoclonal antibody (green curves), an irrelevant monoclonal antibody served as negative control (black curves). For specificity testing, purified GM-4C1 was tested on all transfectants. A positive signal was obtained only with Granzyme B transfected cells (red curves).

Background

Granzyme B (GrB) is a 27 kDa caspase-like serine protease that is released by activated cytotoxic T cells and natural killer cells to kill virus-infected and tumor cells (1). The enzymatic activity of granzyme B is considered essential to its ability to induce cell death through the activation of caspases. It has the strongest apoptotic activity of all granzymes, as a result of its caspase-like ability to cleave substrates at key aspartic acid residues (1,2). GrB is involved in several pathologies including viral infections, graft rejection, graft-vs.-host disease (2,3), rheumatoid arthritis and plays an important role in antitumour immune responses (2).

References

1. **Trapani JA (2001).** Granzymes a family of lymphocyte granule serine proteases. *Genome Biol* 2(12):REVIEWS3014.

2. **Trapani JA, Sutton VR (2003).** Granzyme B: pro-apoptotic, antiviral and antitumor functions. *Curr Opin Immunol* 15(5):533-43.

3. **Graubert TA, DiPersio JF, Russell JH and Ley TJ (1997).** Perforin/granzyme-dependent and Independent Mechanisms are Both Important for the Development of Graft-versus-host Disease After Murine Bone Marrow Transplantation. *J Clin Invest* 100(4): 904-911

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