

Alexa Fluor® 594 anti-human Granzyme A Antibody

Catalog# / Size	507218 / 100 µg
Clone	CB9
Regulatory Status	RUO
Other Names	Granzyme 1, Hanukah factor serine protease (HFSP), Cytotoxic T-lymphocyte-associated serine esterase 3 (CTLA-3)
Isotype	Mouse IgG1, κ
Description	Granzyme A is a 28 kD disulfide-linked homodimeric protein and the most abundant of the proteases occurring in CTL granules. It is homologous to other serine esterases, including other granzymes, mast cell proteases, and neutrophil cathepsins. Granzyme B is thought to be a rapidly-acting apoptotic enzyme, while Granzyme A is slow acting. The CB9 monoclonal antibody recognizes human Granzyme A and has been shown to be useful for flow cytometry, immunoprecipitation, and immunohistochemistry (paraffin-embedded sections).

Product Details

Verified Reactivity	Human
Antibody Type	Monoclonal
Host Species	Mouse
Immunogen	Purified human Granzyme A
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 594 under optimal conditions.
Concentration	0.5 mg/ml
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Application	ICC - Quality tested ICFC - Verified
Recommended Usage	<p>Each lot of this antibody is quality control tested by immunocytochemistry. For immunocytochemistry, a concentration range of 1.0 - 5.0 µg/ml is recommended. For flow cytometric staining, the suggested use of this reagent is ≤ 0.5 µg per million cells in 100 µl volume. It is recommended that the reagent be titrated for optimal performance for each application.</p> <p>* Alexa Fluor® 594 has an excitation maximum of 590 nm, and a maximum emission of 617 nm.</p> <p>Alexa Fluor® and Pacific Blue™ are trademarks of Life Technologies Corporation.</p> <p>View full statement regarding label licenses</p>
Application Notes	Additional reported applications (for the relevant formats) include: immunohistochemical staining ³ of formalin-fixed paraffin-embedded tissue sections, and immunoprecipitation ² .
Application References	<ol style="list-style-type: none">1. Trimble L, <i>et al.</i> 1998. <i>Blood</i> 91:585.2. Beresford P, <i>et al.</i> 1997. <i>P. Natl. Acad. Sci. USA</i> 94:9285.3. Raqib R, <i>et al.</i> 2002. <i>Infect. Immun.</i> 70:3199.4. Chen H, <i>et al.</i> 2005. <i>J. Immunol.</i> 175:591.
(PubMed link indicates BioLegend citation)	
RRID	AB_2563964 (BioLegend Cat. No. 507218)

Antigen Details

Structure	Serine protease; disulfide-linked homodimer; 28 kD (Mammalian)
Bioactivity	Induction of caspase-independent cell death by apoptosis; release of NM23-H1 for single-strand DNA nicking
Cell Sources	Cytotoxic T cells, NK cells
Cell Targets	Intracellular targets lamins A, B cells, C, nucleosome assembly protein (NAP) SET cells, HMG2, Ape1/Ref-1, histones; cleaves SET:NM23-H1 complex to release NM23-H1
Receptors	Assisted by perforin
Cell Type	Tregs
Biology Area	Cell Biology, Immunology, Innate Immunity, Neuroscience
Molecular Family	Enzymes and Regulators, Proteases
Antigen References	<ol style="list-style-type: none">1. Brune J, <i>et al.</i> 1986. <i>Nature</i> 322:268.2. Fan Z, <i>et al.</i> 2003. <i>Nature Immunol.</i> 4:145.3. Fan Z, <i>et al.</i> 2003. <i>Cell</i> 112:659.4. Masson D, <i>et al.</i> 1987. <i>Cell</i> 49:679.
Gene ID	3001

Related Protocols

[Intracellular Cytokine Staining Protocol - Video](#)

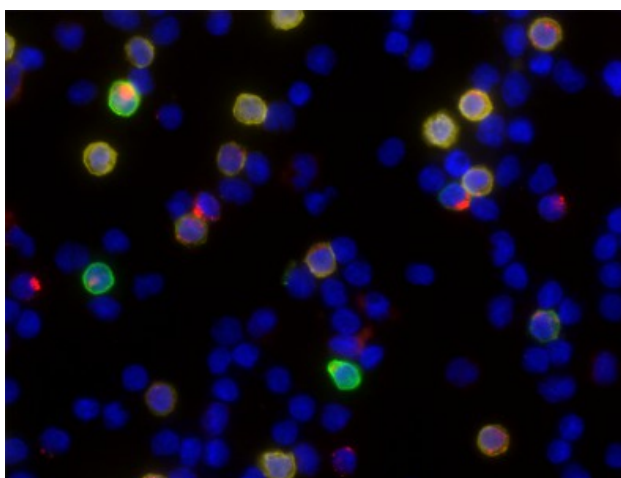
[Immunocytochemistry Staining Protocol](#)

[Intracellular Flow Cytometry Staining Protocol](#)

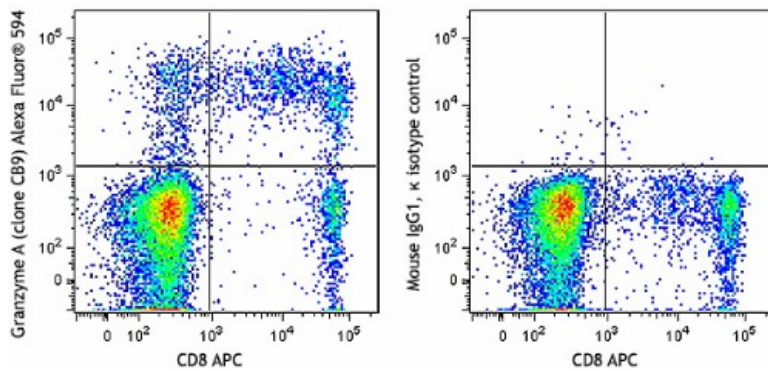
Other Formats

FITC anti-human Granzyme A, PE anti-human Granzyme A, Purified anti-human Granzyme A, Pacific Blue™ anti-human Granzyme A, Alexa Fluor® 700 anti-human Granzyme A, Alexa Fluor® 488 anti-human Granzyme A, Alexa Fluor® 647 anti-human Granzyme A, PerCP/Cyanine5.5 anti-human Granzyme A, Alexa Fluor® 594 anti-human Granzyme A, APC anti-human Granzyme A, PE/Cyanine7 anti-human Granzyme A

Product Data



Human PBMCs were fixed with 2% PFA for 10 min, permeabilized with 0.5% Triton X-100 for 10 min, and blocked with 5% FBS plus 5% mouse serum for 30 min at room temperature (RT). Then, cells were stained with 5 µg/ml Granzyme A (clone CB9) Alexa Fluor® 594 (red) 30 min, followed by two washes and co-stained with 10 µg/ml CD8 (clone HIT8a) Alexa Fluor® 488 (yellow) and 10 µg/ml CD56 (clone HCD56) Alexa Fluor® 647 (green) for 15 min at RT. Nuclei were counterstained with DAPI (blue). The image was captured with a 60X objective.



Human peripheral blood mononuclear cells were stained with CD8 APC and then intracellularly stained with Granzyme A (clone CB9) Alexa Fluor® 594 (left) or mouse IgG1, κ Alexa Fluor® 594 isotype control (right). The data was acquired by BD LSRFortessa™ cell analyzer equipped with Yellow-Green Laser (561 nm).

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