

## Alexa Fluor® 647 anti-human Granzyme A Antibody

<b>Catalog# / Size</b>	507214 / 100 tests
<b>Clone</b>	CB9
<b>Regulatory Status</b>	RUO
<b>Other Names</b>	Granzyme 1, Hanukah factor serine protease (HFSP), Cytotoxic T-lymphocyte-associated serine esterase 3 (CTLA-3)
<b>Isotype</b>	Mouse IgG1, κ
<b>Description</b>	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

<b>Verified Reactivity</b>	Human
<b>Antibody Type</b>	Monoclonal
<b>Host Species</b>	Mouse
<b>Immunogen</b>	Purified human Granzyme A
<b>Formulation</b>	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and BSA (origin USA)
<b>Preparation</b>	The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 647 under optimal conditions.
<b>Concentration</b>	Lot-specific (to obtain lot-specific concentration, please enter the lot number in our <a href="#">Concentration and Expiration Lookup</a> or <a href="#">Certificate of Analysis</a> online tools.)
<b>Storage &amp; Handling</b>	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. <b>Do not freeze.</b>
<b>Application</b>	<a href="#">ICFC - Quality tested</a>
<b>Recommended Usage</b>	Each lot of this antibody is quality control tested by <a href="#">intracellular immunofluorescent staining with flow cytometric analysis</a> . For flow cytometric staining, the suggested use of this reagent is 5 µl per million cells in 100 µl staining volume or 5 µl per 100 µl of whole blood.  * Alexa Fluor® 647 has a maximum emission of 668 nm when it is excited at 633nm / 635nm.  Alexa Fluor® and Pacific Blue™ are trademarks of Life Technologies Corporation.  <a href="#">View full statement regarding label licenses</a>
<b>Excitation Laser</b>	Red Laser (633 nm)
<b>Application Notes</b>	Additional reported applications (for the relevant formats) include: immunohistochemical staining <sup>3</sup> of formalin-fixed paraffin-embedded tissue sections, and immunoprecipitation <sup>2</sup> .
<b>Application References</b>	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.
<b>(PubMed link indicates BioLegend citation)</b>	
<b>Product Citations</b>	1. Kiniry B, <i>et al.</i> 2016. <i>Mucosal Immunol.</i> 10.1038/mi.2016.100. <a href="#">PubMed</a> 2. Kiniry BE, <i>et al.</i> 2018. <i>J Immunol.</i> 200:1876. <a href="#">PubMed</a>

## Antigen Details

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<b>Structure</b>	Serine protease; disulfide-linked homodimer; 28 kD (Mammalian)
<b>Ligand/Receptor</b>	Assisted by perforin
<b>Bioactivity</b>	Induction of caspase-independent cell death by apoptosis; release of NM23-H1 for single-strand DNA nicking
<b>Cell Sources</b>	Cytotoxic T cells, NK cells
<b>Cell Targets</b>	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
<b>Receptors</b>	Assisted by perforin
<b>Cell Type</b>	Tregs
<b>Biology Area</b>	Cell Biology, Immunology, Innate Immunity, Neuroscience
<b>Molecular Family</b>	Enzymes and Regulators, Proteases
<b>Antigen References</b>	<ol style="list-style-type: none"><li>1. Brune J, <i>et al.</i> 1986. <i>Nature</i> 322:268.</li><li>2. Fan Z, <i>et al.</i> 2003. <i>Nature Immunol.</i> 4:145.</li><li>3. Fan Z, <i>et al.</i> 2003. <i>Cell</i> 112:659.</li><li>4. Masson D, <i>et al.</i> 1987. <i>Cell</i> 49:679.</li></ol>
<b>Gene ID</b>	<a href="#">3001</a>

## Related Protocols

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[Intracellular Cytokine Staining Protocol - Video](#)

[Intracellular Flow Cytometry Staining Protocol](#)

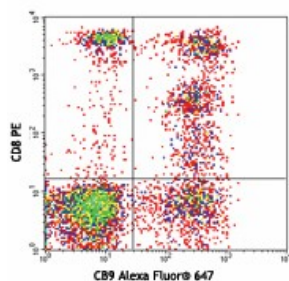
## Other Formats

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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

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Human peripheral blood lymphocytes surface stained with CD8 PE, then intracellularly stained with CB9 Alexa Fluor® 647

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