Technical Data Sheet

Purified Mouse Anti-Human Granzyme A

Product Information
Material Number: 557449
Size: 0.1 mg
Concentration: 0.5 mg/ml
Clone: CB9
Isotype: Mouse IgG1, κ
Reactivity: QC Testing: Human
Storage Buffer: Aqueous buffered solution containing ≤0.09% sodium azide.

Description
The primary mechanism by which cytotoxic T cells eliminate virally infected cells is by granule exocytosis. The release of cytotoxic granule contents by cytotoxic T lymphocytes (CTL) triggers apoptotic target cell death. CTL granules contain a pore-forming protein, perforin, and a group of serine proteases called granzymes. In the classic model, perforins create holes in the target cell membrane, allowing entrance of the granzymes. Granzyme A and B are the predominant granzymes activated after CTL activation, but each act via an independent apoptotic pathway; granzyme B is activated immediately, while granzyme A acts hours later. Granzyme B has been shown to induce apoptosis and to cleave a number of substrates which are similar in specificity to those of the caspase family of proteinases. Granzyme B can cleave substrates, such as DNA-PKcs, and nuclear mitotic apparatus protein (NuMA). Furthermore, Granzyme B can also cleave substrates such as Bid and DFF45 in a caspase-independent fashion. Studies involving mice which are deficient in both granzyme A and B suggest a model whereby the granzyme B pathway may have evolved as the major apoptotic pathway with the granzyme A pathway acting as a backup. However, further research is needed to delineate the components of these distinct pathways. Clone CB9 recognizes human granzyme A. Purified human granzyme A was used as the immunogen.

This antibody is routinely tested by flow cytometric analysis. Other applications were tested at BD Biosciences Pharmingen during antibody development only or reported in the literature.

Profile of permeabilized peripheral blood lymphocytes analyzed by flow cytometry (BDIS, San Jose, CA). Cells were collected, fixed, and permeabilized using the Cytotox/Cytoperm™ Kit (Cat. No. 554714) for 20 minutes at room temperature (RT), pelleted and washed twice with Perm/Wash Buffer™ (component of Cat. No. 554714). Cells were then stained with purified anti-human granzyme A antibody (Cat. No. 557449, 0.5 µg/ml) or an IgG1 isotype control (Cat. No. 554121, clone MOPC-21) for 20-30 minutes at RT in the dark. Cells were then washed in Perm/Wash Buffer and stained with FITC labeled goat anti-mouse IgG/IgM (Cat. No. 555968, 0.25 µg/ml) for 20-30 minutes at RT in the dark. Cells were washed once in Perm/Wash Buffer™, resuspended in wash buffer and analyzed by flow cytometry.

Preparation and Storage
The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography. Store undiluted at 4° C.

Application Notes

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<tr>
<th>Application</th>
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<td>Flow cytometry</td>
<td>Routinely Tested</td>
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<td>Immunoprecipitation</td>
<td>Reported</td>
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Suggested Companion Products

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<tr>
<th>Catalog Number</th>
<th>Name</th>
<th>Size</th>
<th>Clone</th>
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<tbody>
<tr>
<td>554121</td>
<td>Purified Mouse IgG1 κ Isotype Control</td>
<td>0.1 mg</td>
<td>MOPC-21</td>
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<tr>
<td>555988</td>
<td>FITC Goat Anti-Mouse IgG/IgM</td>
<td>0.5 mg</td>
<td>Polyclonal</td>
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Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.

References


