Monoclonal Antibodies
Detecting Human Antigens

RESEARCH APPLICATIONS
Research applications include studies of:
• T lymphocytes in inflammatory lung diseases\textsuperscript{1,2}
• Hairy cell leukemia\textsuperscript{3-8}

DESCRIPTION

Specificity
The CD103 antibody recognizes the \( \alpha \text{E} \) subunit of integrin \( \alpha \text{E}\beta7 \), an integrin also known as the human mucosal lymphocyte (HML) antigen\textsuperscript{1,6,9} but not \( \alpha \text{4} \), another member of the \( \beta7 \) integrin subfamily.\textsuperscript{9} Integrin \( \alpha \text{E}\beta7 \) is a trimeric protein complex of three components, 105 kilodaltons (kDa) (\( \beta7 \)), 150 kDa, and 25 kDa. The CD103 antibody recognizes an epitope localized on the 150-kDa chain.\textsuperscript{7}

Antigen distribution
The CD103 antigen is preferentially expressed on human intestinal intraepithelial lymphocytes (IELs).\textsuperscript{4,5,10} The CD103 antibody also reacts with most T cells present in the oral and bronchial mucosa.\textsuperscript{1,2} Most cases of hairy cell leukemia were found to be \( \text{CD}103^+ \).\textsuperscript{4,5,8} The majority of the \( \text{CD}103^+ \) cells found in fresh blood, splenic cells, and in vitro–activated T cells co-expressed CD8.\textsuperscript{11} A subset of cytolytic T lymphocytes (CTLs) with phenotype of \( \text{CD}8^+\text{CD}103^+ \) was found to be responsible for the destruction of graft epithelium and, therefore, organ allograft rejection.\textsuperscript{12}

Clone
The CD103 antibody, clone Ber-ACT8, is derived using standard cell hybridization procedures using spleen cells from BALB/c mice immunized with the HTLV-1–positive T-cell line, MAPS16.\textsuperscript{7}

Composition
The CD103 antibody is composed of mouse IgG\textsubscript{1} heavy chains and kappa light chains.

Product configuration
The following are supplied in phosphate buffered saline (PBS) containing a stabilizer and a preservative.

<table>
<thead>
<tr>
<th>Form</th>
<th>Number of tests</th>
<th>Volume per test (µL)\textsuperscript{a}</th>
<th>Amount provided (µg)</th>
<th>Total volume (mL)</th>
<th>Concentration (µg/mL)</th>
<th>Stabilizer</th>
<th>Preservative</th>
</tr>
</thead>
<tbody>
<tr>
<td>FITC</td>
<td>50</td>
<td>20</td>
<td>25</td>
<td>1.0</td>
<td>25</td>
<td>Gelatin</td>
<td>0.1% Sodium azide</td>
</tr>
<tr>
<td>PE</td>
<td>50</td>
<td>20</td>
<td>25</td>
<td>1.0</td>
<td>25</td>
<td>Gelatin</td>
<td>0.1% Sodium azide</td>
</tr>
<tr>
<td>APC-H7</td>
<td>100</td>
<td>5</td>
<td>25</td>
<td>0.5</td>
<td>50</td>
<td>Gelatin</td>
<td>0.1% Sodium azide</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Volume required to stain \( 10^6 \) cells.

\textbf{CAUTION} Some APC-H7 conjugates show changes in their emission spectra with prolonged exposure to paraformaldehyde or light. For overnight storage of stained cells, wash and resuspend in buffer without paraformaldehyde after 1 hour of fixation.

\textbf{For Research Use Only. Not for use in diagnostic or therapeutic procedures.}
PROCEDURE
Visit our website (bdbiosciences.com) or contact your local BD representative for the
lyse/wash protocol for direct immunofluorescence.

REPRESENTATIVE DATA
Performed on a sample of peripheral blood with hairy cell leukemia cells. Laser
excitation is at 488 nm or 635 nm.

Figure 1  Representative data analyzed with a BD FACSTM brand flow cytometer

HANDLING AND
STORAGE
Store vials at 2°C–8°C. Conjugated forms should not be frozen. Protect from exposure
to light. Each reagent is stable until the expiration date shown on the bottle label when
stored as directed.

WARNING
All biological specimens and materials coming in contact with them are considered
biohazards. Handle as if capable of transmitting infection13,14 and dispose of with
proper precautions in accordance with federal, state, and local regulations. Never
pipette by mouth. Wear suitable protective clothing, eyewear, and gloves.

CHARACTERIZATION
To ensure consistently high-quality reagents, each lot of antibody is tested for
conformance with characteristics of a standard reagent. Representative flow cytometric
data is included in this data sheet.

WARRANTY
Unless otherwise indicated in any applicable BD general conditions of sale for non-US
customers, the following warranty applies to the purchase of these products.

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OR ECONOMIC LOSS, CAUSED BY THE PRODUCT.

REFERENCES
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