CD8 (RPA-T8)

**DESCRIPTION**

**Specificity**

The CD8 antibody recognizes the 32-kilodalton (kDa) α-subunit of a disulfide-linked bimolecular complex.\(^1,2\) The majority of peripheral blood CD8\(^+\) T lymphocytes express an α/β heterodimer (30 kDa), while CD8\(^+\)CD16\(^+\) natural killer (NK) lymphocytes and CD8\(^+\) T-cell receptor (TCR)-γδ\(^+\) T lymphocytes express an α/α homodimer (30 kDa). CD8\(^+\)TCR-α/β\(^+\) T lymphocytes can express either an α/α homodimer or an α/β heterodimer.\(^1,2\) The CD8 antigenic determinant binds to major histocompatibility (MHC) class I molecules, resulting in increased adhesion between the CD8\(^+\) T lymphocytes and target cells.\(^3-5\) Binding of the CD8 antigen to MHC class I molecules enhances the activation of resting T lymphocytes.\(^3-6\) The CD8 antigen is coupled to a protein tyrosine kinase, p56\(^\text{ck}\). The CD8:p56\(^\text{ck}\) complex can play a role in T-lymphocyte activation through mediation of the interactions between the CD8 antigen and the CD3/TCR complex.\(^5,6\)

**Antigen distribution**

The CD8 antigen is present on the human suppressor/cytotoxic T-lymphocyte subset\(^7-12\) as well as on a subset of NK lymphocytes.\(^13\) The CD8 antigen is expressed on 19%–48% of normal peripheral blood lymphocytes\(^14\) and 60%–85% of normal thymocytes.\(^9,11\) The CD8\(^+\) T- and NK-lymphocyte subsets can be further subdivided into the following groups: CD16\(^+\) NK lymphocytes that can express the CD8 antigen in low density;\(^13\) CD57\(^+\) T lymphocytes that express the CD8 antigen at high density;\(^13\) and CD8\(^+\)CD62L\(^+\) lymphocytes that collaborate with CD8\(^+\)CD62L\(^+\) lymphocytes to generate suppression of B-lymphocyte function.\(^15\) CD8 cross-reacts with lymphocytes of some nonhuman primate species.\(^16\)

**Clone**

The CD8 antibody, clone RPA-T8,\(^1\) is derived from the hybridization of NS-1 mouse myeloma cells immunized with phytohemagglutinin (PHA)–stimulated peripheral blood mononuclear cells (PBMCs).

**Composition**

The CD8 antibody is composed of mouse IgG\(_1\) heavy chains and kappa light chains.

**Product configuration**

The following is 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)(^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>V450(^b)</td>
<td>100</td>
<td>5</td>
<td>25</td>
<td>0.5</td>
<td>50</td>
<td>Protein stabilizer</td>
<td>0.09% Sodium azide</td>
</tr>
</tbody>
</table>

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

\(^b\) BD Horizon™ V450

**Analyte Specific Reagent. Analytical and performance characteristics are not established.**
**CAUTION** Prolonged exposure of cells to paraformaldehyde can lead to increased autofluorescence in the violet channels. For overnight storage of stained cells, wash and resuspend in buffer without paraformaldehyde after 1 hour of fixation.

**Purity**

V450: ≤20% free fluorophore at bottling, as measured by size-exclusion chromatography (SEC)

**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 infection\(^{17,18}\) 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.

**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.

THE PRODUCTS SOLD HEREUNDER ARE WARRANTED ONLY TO CONFORM TO THE QUANTITY AND CONTENTS STATED ON THE LABEL OR IN THE PRODUCT LABELING AT THE TIME OF DELIVERY TO THE CUSTOMER. BD DISCLAIMS HEREBY ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE AND NONINFRINGEMENT. BD'S SOLE LIABILITY IS LIMITED TO EITHER REPLACEMENT OF THE PRODUCTS OR REFUND OF THE PURCHASE PRICE. BD IS NOT LIABLE FOR PROPERTY DAMAGE OR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING PERSONAL INJURY, OR ECONOMIC LOSS, CAUSED BY THE PRODUCT.

**REFERENCES**


5. Gallagher PF, Fazekas de St Groth B, Miller JF. CD4 and CD8 molecules can physically associate with the same T-cell receptor. *Proc Natl Acad Sci USA.* 1989;86:10044-10048.


