

## Ultra-LEAF™ Purified anti-human CD3 Antibody

|                          |   |
|--------------------------|---|
| <b>Catalog# / Size</b>   | 300437 / 100 µg<br>300438 / 1 mg<br>300465 / 5 mg<br>300466 / 25 mg<br>300473 / 50 mg<br>300474 / 100 mg  |
| <b>Clone</b>             | UCHT1   |
| <b>Regulatory Status</b> | RUO   |
| <b>Workshop</b>          | III 471   |
| <b>Other Names</b>       | T3, CD3ε  |
| <b>Isotype</b>           | Mouse IgG1, κ   |
| <b>Description</b>       | CD3ε is a 20 kD chain of the CD3/T-cell receptor (TCR) complex which is composed of two CD3ε, one CD3γ, one CD3δ, one CD3ζ (CD247), and a T-cell receptor (α/β or γ/δ) heterodimer. It is found on all mature T cells, NKT cells, and some thymocytes. CD3, also known as T3, is a member of the immunoglobulin superfamily that plays a role in antigen recognition, signal transduction, and T cell activation. |

### Product Details

|                               |   |
|-------------------------------|---|
| <b>Verified Reactivity</b>    | Human   |
| <b>Reported Reactivity</b>    | Chimpanzee  |
| <b>Antibody Type</b>          | Monoclonal  |
| <b>Host Species</b>           | Mouse   |
| <b>Formulation</b>            | 0.2 µm filtered in phosphate-buffered solution, pH 7.2, containing no preservative. Endotoxin level is <0.01 EU/µg of the protein (<0.001 ng/µg of the protein) as determined by the LAL test.  |
| <b>Preparation</b>            | The Ultra-LEAF™ (Low Endotoxin, Azide-Free) antibody was purified by affinity chromatography.   |
| <b>Concentration</b>          | The antibody is bottled at the concentration indicated on the vial, typically between 2 mg/mL and 3 mg/mL. Older lots may have also been bottled at 1 mg/mL. 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. This Ultra-LEAF™ solution contains no preservative; handle under aseptic conditions.  |
| <b>Application</b>            | <a href="#">FC - Quality tested</a><br><a href="#">CyTOF® - Verified</a><br><a href="#">IHC-F, IP, Activ, WB - Reported in the literature, not verified in house</a>  |
| <b>Recommended Usage</b>      | Each lot of this antibody is quality control tested by <a href="#">immunofluorescent staining with flow cytometric analysis</a> . For flow cytometric staining, the suggested use of this reagent is ≤ 2.0 µg per million cells in 100 µl volume or 100 µl of whole blood. It is recommended that the reagent be titrated for optimal performance for each application.   |
| <b>Application Notes</b>      | Additional reported applications (for the relevant formats) include: immunohistochemical staining of acetone-fixed frozen sections <sup>4,6,7</sup> and formalin-fixed paraffin-embedded sections <sup>11</sup> , immunoprecipitation <sup>1</sup> , activation of T cells <sup>2,3,5</sup> , Western blotting <sup>9</sup> , and spatial biology (IBEX) <sup>16,17</sup> . The LEAF™ purified antibody (Endotoxin < 0.1 EU/µg, Azide-Free, 0.2 µm filtered) is recommended for functional assays (Cat. No. 300413, 300414, and 300432). For highly sensitive assays, we recommend Ultra-LEAF™ purified antibody (Cat. No. 300437, 300438, 300465, 300466, 300473, 300474) with a lower endotoxin limit than standard LEAF™ purified antibodies (Endotoxin < 0.01 EU/µg). |
| <b>Application References</b> | 1. Salmeron A, <i>et al.</i> 1991. <i>J. Immunol.</i> 147:3047. (IP)  |

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#### Product Citations

1. Tocheva AS, *et al.* 2020. *Curr Protoc Immunol.* 130:e103. [PubMed](#)
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12. NULL, *et al.* 2022. *Cell.* 185:916. [PubMed](#)

#### RRID

AB\_11147760 (BioLegend Cat. No. 300437)  
 AB\_11146991 (BioLegend Cat. No. 300438)  
 AB\_2616677 (BioLegend Cat. No. 300465)  
 AB\_2616678 (BioLegend Cat. No. 300466)  
 AB\_2749887 (BioLegend Cat. No. 300473)  
 AB\_2749892 (BioLegend Cat. No. 300474)

## Antigen Details

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| <b>Structure</b>          | Ig superfamily, with the subunits of CD3 $\gamma$ , CD3 $\delta$ , CD3 $\zeta$ (CD247) and TCR ( $\alpha/\beta$ or $\gamma/\delta$ ) forms CD3/TCR complex, 20 kD   |
| <b>Distribution</b>       | Mature T and NK T cells, thymocyte differentiation  |
| <b>Function</b>           | Antigen recognition, signal transduction, T cell activation   |
| <b>Ligand/Receptor</b>    | Peptide antigen bound to MHC  |
| <b>Cell Type</b>          | NKT cells, T cells, Thymocytes, Tregs   |
| <b>Biology Area</b>       | Immunology, Innate Immunity   |
| <b>Molecular Family</b>   | CD Molecules, TCRs  |
| <b>Antigen References</b> | <ol style="list-style-type: none"> <li>1. Barclay N, <i>et al.</i> 1993. <i>The Leucocyte FactsBook.</i> Academic Press. San Diego.</li> <li>2. Beverly P, <i>et al.</i> 1981. <i>Eur. J. Immunol.</i> 11:329.</li> <li>3. Lanier L, <i>et al.</i> 1986. <i>J. Immunol.</i> 137:2501-2507.</li> </ol> |
| <b>Gene ID</b>            | <a href="#">916</a>   |

## Related Protocols

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[Cell Surface Flow Cytometry Staining Protocol](#)

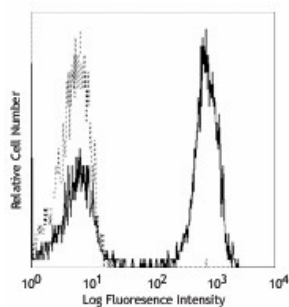
[T Cell Activation with anti-CD3 Antibodies Protocol - Human](#)

[T Cell Activation with anti-CD3 Antibodies Protocol - Mouse](#)

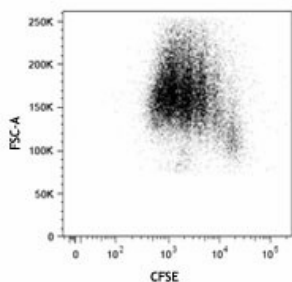
## Other Formats

APC anti-human CD3, Biotin anti-human CD3, FITC anti-human CD3, PE anti-human CD3, PE/Cyanine5 anti-human CD3, Purified anti-human CD3, Alexa Fluor® 647 anti-human CD3, Alexa Fluor® 488 anti-human CD3, Pacific Blue™ anti-human CD3, PE/Cyanine7 anti-human CD3, Alexa Fluor® 700 anti-human CD3, APC/Cyanine7 anti-human CD3, PerCP anti-human CD3, PerCP/Cyanine5.5 anti-human CD3, Brilliant Violet 421™ anti-human CD3, Brilliant Violet 570™ anti-human CD3, Ultra-LEAF™ Purified anti-human CD3, Purified anti-human CD3 (Maxpar® Ready), Alexa Fluor® 594 anti-human CD3, PE/Dazzle™ 594 anti-human CD3, Brilliant Violet 510™ anti-human CD3, Brilliant Violet 605™ anti-human CD3, Brilliant Violet 711™ anti-human CD3, Brilliant Violet 650™ anti-human CD3, APC/Fire™ 750 anti-human CD3, Brilliant Violet 785™ anti-human CD3, TotalSeq™-A0034 anti-human CD3, TotalSeq™-B0034 anti-human CD3, TotalSeq™-C0034 anti-human CD3, KIRAVIA Blue 520™ anti-human CD3, Spark Violet™ 538 anti-human CD3 Antibody, TotalSeq™-D0034 anti-human CD3, Spark Blue™ 574 anti-human CD3 Antibody, GMP Pacific Blue™ anti-human CD3, GMP PE anti-human CD3, GMP PE/Dazzle™ 594 anti-human CD3

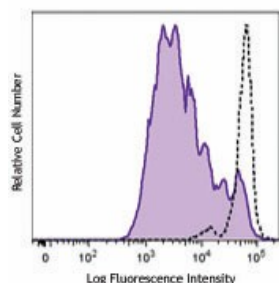
## Product Data



Human peripheral blood lymphocytes stained with LEAF™ purified UCHT1 and then detected with anti-mouse IgGs FITC



Human peripheral blood lymphocytes stained with LEAF™ purified UCHT1 and then detected with anti-mouse IgGs FITC



Human peripheral blood mononuclear cells were stained with CFSE on day 0, and then stimulated with (filled histogram) or without (open histogram) immobilized LEAF™ Purified CD3 (clone UCHT1) and LEAF™ purified CD28 (clone CD28.2) for 3 days. On day 4, cells were harvested and stained with CD4 Brilliant Violet 711™. Dot plot (above) was analyzed on live cells. Histogram data (below) was analyzed by gating on CD4 positive cells (above).

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