

## Datasheet: MCA463APCT

<b>Description:</b>	MOUSE ANTI HUMAN CD3:APC
<b>Specificity:</b>	CD3
<b>Format:</b>	APC
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	UCHT1
<b>Isotype:</b>	IgG1
<b>Quantity:</b>	25 TESTS

## Product Details

### Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit [www.bio-rad-antibodies.com/protocols](http://www.bio-rad-antibodies.com/protocols).

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	■			Neat

Where this antibody has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the antibody for use in their own system using appropriate negative/positive controls.

Target Species	Human								
Species Cross Reactivity	Reacts with: Chimpanzee <b>N.B.</b> Antibody reactivity and working conditions may vary between s								
Product Form	Purified IgG conjugated to allophycocyanin (APC) - liquid								
Max Ex/Em	<table><tr><th>Fluorophore</th><th>Excitation Max (nm)</th><th>Emission Max (nm)</th></tr><tr><td>APC</td><td>650</td><td>661</td></tr></table>	Fluorophore	Excitation Max (nm)	Emission Max (nm)	APC	650	661		
Fluorophore	Excitation Max (nm)	Emission Max (nm)							
APC	650	661							
Preparation	Purified IgG prepared by affinity chromatography on Protein G from								
Buffer Solution	Phosphate buffered saline								
Preservative	0.09% Sodium Azide								
Stabilisers	1%    Bovine Serum Albumin 5%    Sucrose								
Immunogen	Human infant thymocytes and lymphocytes from a patient with Seza								
External Database Links	UniProt: <a href="#">P07766</a> <a href="#">Related reagents</a>								

**Entrez Gene:**[916](#) CD3E [Related reagents](#)

<b>Synonyms</b>	T3E
<b>Fusion Partners</b>	Spleen cells from immunised BALB/c mice were fused with cells of the P3/NS1/1-Ag4-1 mouse myeloma cell line.
<b>Specificity</b>	<p><b>Mouse anti Human CD3 antibody, clone UCHT1</b> recognizes the human T-cell surface glycoprotein CD3 epsilon chain, also known as T-cell surface antigen T3/Leu-4 epsilon chain or CD3ε. CD3ε is a 207 amino acid, ~21kDa single pass type 1 transmembrane protein containing a single <a href="#">Ig-like</a> and a single <a href="#">ITAM</a> domain. Mouse anti Human CD3 antibody, clone UCHT1 was originally described as only binding to CD3ε when complexed with either the CD3δ or CD3γ subunits, as indicated by co-transfection immunofluorescence studies on COS cells (<a href="#">Salmerón et al. 1991</a>). Mouse anti Human CD3 antibody, clone UCHT1 binds to a region in the ectodomain of human CD3ε and has been shown to bind to a <a href="#">discontinuous epitope</a> near an acidic region of CD3ε opposite the dimer interface; as shown by crystallographic studies of the CD3ε/δ dimer complexed with a single chain UCHT1 antibody fragment (<a href="#">Arnett et al. 2004</a>).</p> <p>CD3 is expressed by all T lymphocytes and is seen in all lymphoid organs including lymph nodes and spleen. It is involved in thymocyte differentiation (<a href="#">Brodeur et al. 2009</a>). Deficiency of the CD3ε chain contributes to blocking T-cell development and presentation of a severe combined immunodeficiency phenotype (<a href="#">Fischer et al. 2005</a>).</p> <p>Mouse anti Human CD3 antibody, clone UCHT1 has been used successfully for the activation of human peripheral blood lymphocytes by cross linking and subsequently for CD3ε surface expression by flow cytometry (<a href="#">Hirsh and Cohen 2006</a>).</p>
<b>Flow Cytometry</b>	Use 10ul of the suggested working dilution to label 10 <sup>6</sup> cells or 100ul whole blood
<b>References</b>	<ol style="list-style-type: none"><li>1. Beverley, P.C. &amp; Callard, R.E. (1981) Distinctive functional characteristics of human "T" lymphocytes defined by E rosetting or a monoclonal anti-T cell antibody. <a href="#">Eur J Immunol. 11 (4): 329-34.</a></li><li>2. Kung, P. et al. (1979) Monoclonal antibodies defining distinctive human T cell surface antigens. <a href="#">Science. 206: 347-9.</a></li><li>3. Clevers, H. et al. (1988) The transmembrane orientation of the epsilon chain of the TcR/CD3 complex. <a href="#">Eur J Immunol. 18 (5): 705-10.</a></li><li>4. Salmerón, A. et al. (1991) A conformational epitope expressed upon association of CD3-epsilon with either CD3-delta or CD3-gamma is the main target for recognition by anti-CD3 monoclonal antibodies. <a href="#">J Immunol. 147: 3047-52.</a></li><li>5. Hirsh, M.I. and Cohen, V. (2006) Chloroquine prevents T lymphocyte suppression induced by anthrax lethal toxin. <a href="#">J Infect Dis. 194: 1003-7.</a></li><li>6. Mahon, N.G. et al. (2002) Immunohistologic evidence of myocardial disease in apparently healthy relatives of patients with dilated cardiomyopathy. <a href="#">J Am Coll Cardiol. 39: 455-62.</a></li><li>7. Lawson, C.A. et al. (2006) Early rheumatoid arthritis is associated with a deficit in the CD4+CD25high regulatory T cell population in peripheral blood. <a href="#">Rheumatology (Oxford). 45: 1210-7.</a></li><li>8. Campana, D. et al. (1987) The cytoplasmic expression of CD3 antigens in normal and malignant cells of the T lymphoid lineage. <a href="#">J Immunol. 138 (2): 648-55.</a></li><li>9. Battaglia, A. et al. (2003) Lymphocyte populations in human lymph nodes. Alterations in CD4+CD25+ T regulatory cell phenotype and T-cell receptor Vbeta repertoire. <a href="#">Immunology. 110: 304-12.</a></li><li>10. McIntosh, R.S. et al. (1997) Analysis of the T cell receptor V alpha repertoire in Hashimoto's</li></ol>

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## Further Reading

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2. Arnett, K.L. *et al.* (2004) Crystal structure of a human CD3-epsilon/delta dimer in complex with a UCHT1 single-chain antibody fragment. [Proc Natl Acad Sci U S A. 101: 16268-73.](#)

<b>Storage</b>	Store at +4°C. DO NOT FREEZE. This product should be stored undiluted. This product is photosensitive and should be protected from light. Should this product contain a precipitate we recommend microcentrifugation before use.
<b>Shelf Life</b>	12 months from date of reconstitution.
<b>Health And Safety Information</b>	Material Safety Datasheet documentation #10306 available at: 10306: <a href="https://www.bio-rad-antibodies.com/uploads/MSDS/10306.pdf">https://www.bio-rad-antibodies.com/uploads/MSDS/10306.pdf</a>
<b>Regulatory</b>	For research purposes only

## Related Products

### Recommended Negative Controls

[MOUSE IgG1 NEGATIVE CONTROL:APC \(MCA928APC\)](#)

### Recommended Useful Reagents

[HUMAN SEROBLOCK \(BUF070A\)](#)

[HUMAN SEROBLOCK \(BUF070B\)](#)

<b>North &amp; South America</b>	Tel: +1 800 265 7376 Fax: +1 919 878 3751 Email: <a href="mailto:antibody_sales_us@bio-rad.com">antibody_sales_us@bio-rad.com</a>	<b>Worldwide</b>	Tel: +44 (0)1865 852 700 Fax: +44 (0)1865 852 739 Email: <a href="mailto:antibody_sales_uk@bio-rad.com">antibody_sales_uk@bio-rad.com</a>	<b>Europe</b>	Tel: +49 (0) 89 8090 95 21 Fax: +49 (0) 89 8090 95 50 Email: <a href="mailto:antibody_sales_de@bio-rad.com">antibody_sales_de@bio-rad.com</a>
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