

## Datasheet: MCA2184F

<b>Description:</b>	MOUSE ANTI HUMAN CD3:FITC
<b>Specificity:</b>	CD3
<b>Format:</b>	FITC
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	MEM-57
<b>Isotype:</b>	IgG2a
<b>Quantity:</b>	0.1 mg

## 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	▪			1/10

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.

<b>Target Species</b>	Human								
<b>Species Cross Reactivity</b>	Reacts with: Chimpanzee <b>N.B.</b> Antibody reactivity and working conditions may vary between species.								
<b>Product Form</b>	Purified IgG conjugated to Fluorescein Isothiocyanate Isomer 1 (FITC) - liquid								
<b>Max Ex/Em</b>	<table border="1"> <thead> <tr> <th>Fluorophore</th> <th>Excitation Max (nm)</th> <th>Emission Max (nm)</th> </tr> </thead> <tbody> <tr> <td>FITC</td> <td>490</td> <td>525</td> </tr> </tbody> </table>	Fluorophore	Excitation Max (nm)	Emission Max (nm)	FITC	490	525		
Fluorophore	Excitation Max (nm)	Emission Max (nm)							
FITC	490	525							
<b>Preparation</b>	Purified IgG prepared by affinity chromatography on Protein A.								
<b>Buffer Solution</b>	Phosphate buffered saline								
<b>Preservative</b>	0.09% Sodium Azide								
<b>Stabilisers</b>	1% Bovine Serum Albumin								
<b>Approx. Protein Concentrations</b>	IgG concentration 0.1 mg/ml								
<b>External Database Links</b>	<b>UniProt:</b> <a href="#">P04234</a> <a href="#">Related reagents</a> <a href="#">P07766</a> <a href="#">Related reagents</a>								

**Entrez Gene:**

- [915](#)   CD3D   [Related reagents](#)
- [916](#)   CD3E   [Related reagents](#)
- [917](#)   CD3G   [Related reagents](#)

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**Synonyms**      T3D, T3E, T3G

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**Fusion Partners**      Spleen cells from immunised BALB/c mice were fused with cells of the P3/NS1/1-Ag4-1 mouse myeloma cell line.

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**Specificity**      **Mouse anti Human CD3 (MEM-57)** is a monoclonal antibody recognizing an extracellular epitope of the human CD3 complex containing either  $\delta$ - $\epsilon$  or  $\gamma$ - $\epsilon$  subunit complexes ([Dave et al. 1997](#)). Mouse anti Human CD3 (MEM-57) recognizes a conformational CD3 epitope minimally requiring the presence of the CD3 $\epsilon$  subunit ([Transy et al. 1989](#)) as it will recognize murine 3D054.8 hybridoma cells transfected with cDNA to express the human CD $\epsilon$  subunit lacking its cytoplasmic domain. CD3 serves as a pan T cell marker, it is expressed on the surface of over 95% of circulating human peripheral T cells. CD3 is also present on ~60-80% of thymocytes and on Purkinji cells, neurons present in the cerebellar cortex. CD3 is not expressed on B cells or NK cells.

The TCR complex consists of TCR heterodimers, either  $\alpha/\beta$  or  $\gamma/\delta$  expressed in a mutually exclusive manner, analogous that seen in [mice](#) on different T cell lineages. In order for the TCR heterodimer to be expressed on the cell surface it must associate with a minimal CD3 complex. The CD3 complex itself is made up of four subunits,  $\gamma$ ,  $\delta$ ,  $\epsilon$  and  $\zeta$  responsible for effecting signalling upon TCR activation, via a single or multiple, depending on the subunit, immunoreceptor tyrosine-based activation motif (ITAM) present in the CD3 subunit cytoplasmic domain ([Kuhns et al. 2006](#) [Dave et al. 1997](#)).

Mouse anti Human CD3 clone MEM-57 demonstrates a mitogenic effect on peripheral blood T cells and on the lymphoblastoid Jurkat cell line ([Batista et al. 2004](#) [Brdicková et al. 2003](#)). Clone MEM-57 immunoprecipitates proteins of ~22 kDa and more weakly ~28 kDa. from peripheral blood T cell lysates.

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**Flow Cytometry**      Use 10ul of the suggested working dilution to label  $10^6$  cells in 100ul or 100ul whole blood.

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- References**
1. Horejsí, V. *et al.* (1988) Monoclonal antibodies against human leucocyte antigens. II. Antibodies against CD45 (T200), CD3 (T3), CD43, CD10 (CALLA), transferrin receptor (T9), a novel broadly expressed 18-kDa antigen (MEM-43) and a novel antigen of restricted expression (MEM-74). [Folia Biol \(Praha\). 34 \(1\): 23-34.](#)
  2. Dave, V.P. *et al.* (1998) Altered functional responsiveness of thymocyte subsets from CD3delta-deficient mice to TCR-CD3 engagement. [Int Immunol. 10: 1481-90.](#)
  3. Transy, C. *et al.* (1989) Most anti-human CD3 monoclonal antibodies are directed to the CD3 epsilon subunit. [Eur J Immunol. 19: 947-50.](#)
  4. Amlot, P.L. *et al.* (1996) Activation antigen expression on human T cells. I. Analysis by two-colour flow cytometry of umbilical cord blood, adult blood and lymphoid tissue. [Clin Exp Immunol. 105: 176-82.](#)
  5. Gunnlaugsdottir, B. *et al.* (2008) Naive human T-cells become non-responsive towards anti-TNFalpha (infliximab) treatment in vitro if co-stimulated through CD28. [Scand J Immunol. 68: 624-34.](#)
  6. Morris, R.J. *et al.* (2005) A high-efficiency system of natural killer cell cloning. [J Immunol](#)

[Methods. 307: 24-33.](#)

7. Bughani U *et al.* (2017) T cell activation and differentiation is modulated by a CD6 domain 1 antibody Itolizumab. [PLoS One. 12 \(7\): e0180088.](#)

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**Storage**

Store at +4°C or at -20°C if preferred.

This product should be stored undiluted.

Storage in frost-free freezers is not recommended. This product is photosensitive and should be protected from light.

Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.

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**Shelf Life**

18 months from date of despatch.

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**Health And Safety Information**

Material Safety Datasheet documentation #10041 available at: 10041: <https://www.bio-rad-antibodies.com/uploads/MSDS/10041.pdf>

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**Regulatory**

For research purposes only

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## Related Products

### Recommended Negative Controls

[MOUSE IgG2a NEGATIVE CONTROL:FITC \(MCA929F\)](#)

### Recommended Useful Reagents

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

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

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