

Datasheet: MCA2184

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| Description: | MOUSE ANTI HUMAN CD3 |
| Specificity: | CD3 |
| Format: | Purified |
| Product Type: | Monoclonal Antibody |
| Clone: | MEM-57 |
| Isotype: | IgG2a |
| Quantity: | 0.2 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.

| | Yes | No | Not Determined | Suggested Dilution |
|----------------------------|-----|----|----------------|--------------------|
| Flow Cytometry | ▪ | | | 1/5 - 1/2 |
| Immunohistology - Frozen | | | ▪ | |
| Immunohistology - Paraffin | | | ▪ | |
| ELISA | | | ▪ | |
| Immunoprecipitation | ▪ | | | |
| Western Blotting | | | ▪ | |

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.

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| Target Species | Human |
| Species Cross Reactivity | Reacts with: Chimpanzee N.B. Antibody reactivity and working conditions may vary between species. |
| Product Form | Purified IgG - liquid |
| Preparation | Purified IgG prepared by affinity chromatography on Protein A. |
| Buffer Solution | Phosphate buffered saline |
| Preservative Stabilisers | 0.09% Sodium Azide (NaN ₃) |
| Approx. Protein Concentrations | IgG concentration 1 mg/ml |
| External Database Links | UniProt: P04234 Related reagents |

[P07766](#) [Related reagents](#)

[P09693](#) [Related reagents](#)

Entrez Gene:

[915](#) CD3D [Related reagents](#)

[916](#) CD3E [Related reagents](#)

[917](#) CD3G [Related reagents](#)

Synonyms

T3D, T3E, T3G

Fusion Partners

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

Specificity

Mouse anti Human CD3 (MEM-57) is a monoclonal antibody recognizing an extracellular epitope of the human CD3 complex containing either δ - ϵ or γ - ϵ subunit complexes ([Dave et al. 1997](#)). Mouse anti Human CD3 (MEM-57) recognizes a conformational CD3 epitope minimally requiring the presence of the CD3 ϵ subunit ([Transy et al. 1989](#)) as it will recognize murine 3D054.8 hybridoma cells transfected with cDNA to express the human CD ϵ 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 α/β or γ/δ 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, γ , δ , ϵ and ζ 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.

Purity

>95% by SDS-PAGE

Flow Cytometry

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

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. Storage in frost-free freezers is not recommended. This product should be stored undiluted. Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use. |
| Shelf Life | 18 months from date of despatch. |
| Health And Safety Information | Material Safety Datasheet documentation #10040 available at: 10040: https://www.bio-rad-antibodies.com/uploads/MSDS/10040.pdf |
| Regulatory | For research purposes only |

Related Products

Recommended Secondary Antibodies

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| Goat Anti Mouse IgG (STAR76...) | RPE |
| Goat Anti Mouse IgG IgA IgM (STAR87...) | Alk. Phos. , HRP |
| Goat Anti Mouse IgG (H/L) (STAR117...) | Alk. Phos. , DyLight@488 , DyLight@549 , DyLight@649 , DyLight@680 , DyLight@800 , FITC , HRP |
| Rabbit Anti Mouse IgG (STAR9...) | FITC |
| Goat Anti Mouse IgG (STAR77...) | HRP |
| Rabbit Anti Mouse IgG (STAR12...) | RPE |
| Goat Anti Mouse IgG (Fc) (STAR120...) | FITC , HRP |
| Rabbit Anti Mouse IgG (STAR8...) | DyLight@800 |
| Goat Anti Mouse IgG (STAR70...) | FITC |
| Human Anti Mouse IgG2a (HCA037...) | FITC , HRP |
| Rabbit Anti Mouse IgG (STAR13...) | HRP |

Recommended Negative Controls

[MOUSE IgG2a NEGATIVE CONTROL \(MCA929\)](#)

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| North & South America | Tel: +1 800 265 7376 Fax: +1 919 878 3751 Email: antibody_sales_us@bio-rad.com | Worldwide | Tel: +44 (0)1865 852 700 Fax: +44 (0)1865 852 739 Email: antibody_sales_uk@bio-rad.com | Europe | Tel: +49 (0) 89 8090 95 21 Fax: +49 (0) 89 8090 95 50 Email: antibody_sales_de@bio-rad.com |
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