# Datasheet: MCA1033A647

## BATCH NUMBER 164218

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| **Description:** | RAT ANTI MOUSE CD71:Alexa Fluor® 647 |
| **Specificity:** | CD71 |
| **Other names:** | TRANSFERRIN RECEPTOR |
| **Format:** | ALEXA FLUOR® 647 |
| **Product Type:** | Monoclonal Antibody |
| **Clone:** | YTA74.4 |
| **Isotype:** | IgG2a |
| **Quantity:** | 100 TESTS/1ml |

## 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 | ▪ | | | Neat - 1/5 |

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**

Mouse

**Product Form**

Purified IgG conjugated to Alexa Fluor 647 - liquid

**Max Ex/Em**

| Fluorophore | Excitation Max (nm) | Emission Max (nm) |
|---|---|---|
| Alexa Fluor®647 | 650 | 665 |

**Preparation**

Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant

**Buffer Solution**

Phosphate buffered saline

**Preservative Stabilisers**

0.09% sodium azide ($NaN_3$)
1% bovine serum albumin

**Approx. Protein**

IgG concentration 0.05 mg/ml

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| **Concentrations** | |
| **Immunogen** | Concanavilin A activated mouse spleen cells. |
| **External Database Links** | **UniProt:**<br>Q62351 Related reagents<br><br>**Entrez Gene:**<br>22042 Tfrc Related reagents |
| **Synonyms** | Trfr |
| **RRID** | AB_324926 |
| **Fusion Partners** | Spleen cells from an immunized DA rat were fused with cells of the Y3/Ag1.2.3 rat myeloma cell line. |
| **Specificity** | **Rat anti Mouse CD71 antibody, clone YTA74.4** recognizes the mouse transferrin receptor protein 1 also known as CD71 or TfR1. CD71 is a 763 amino acid glycoprotein homodimer of ~95 kDa subunits. CD71 is expressed by dividing cells, and functions as a transferrin receptor mediating uptake of iron.<br><br>Rat anti Mouse CD71 antibody, clone YTA74.4 blocks the binding of R17 217.1.3. and R17 208.2 anti-TFR monoclonal antibodies (Trowbridge *et al.* 1982). |
| **Flow Cytometry** | Use 10µl of the suggested working dilution to label $10^6$ cells in 100µl.<br>The Fc region of monoclonal antibodies may bind non-specifically to cells expressing low affinity fc receptors. This may be reduced by using SeroBlock FcR (BUF041A/B). |
| **References** | 1. Millot, S. *et al.* (2010) Erythropoietin stimulates spleen BMP4-dependent stress erythropoiesis and partially corrects anemia in a mouse model of generalized inflammation. Blood. 116: 6072-81.<br>2. Kuo, Y.M. *et al.* (2004) Mislocalisation of hephaestin, a multicopper ferroxidase involved in basolateral intestinal iron transport, in the sex linked anaemia mouse. Gut. 53: 201-6.<br>3. Krysiak, K. *et al.* (2015) Reduced levels of Hspa9 attenuate Stat5 activation in mouse B cells. Exp Hematol. 43 (4): 319-30.e10.<br>4. Byun, M. *et al.* (2007) Cowpox virus exploits the endoplasmic reticulum retention pathway to inhibit MHC class I transport to the cell surface. Cell Host Microbe. 2: 306-15.<br>5. Ripich, T. and Jessberger, R. (2011) SWAP-70 regulates erythropoiesis by controlling α4 integrin. Haematologica. 96: 1743-52.<br>6. Hadziahmetovic, M. *et al.* (2012) Microarray analysis of murine retinal light damage reveals changes in iron regulatory, complement, and antioxidant genes in the neurosensory retina and isolated RPE. Invest Ophthalmol Vis Sci. 53 (9): 5231-41.<br>7. Niewoehner, J. *et al.* (2014) Increased brain penetration and potency of a therapeutic antibody using a monovalent molecular shuttle. Neuron. 81: 49-60.<br>8. Sands, S.A. *et al.* (2015) The habenula and iron metabolism in cerebral mouse models of multiple sclerosis. Neurosci Lett. 606: 204-8. |

9. Baumann, B. *et al.* (2017) Conditional Müller Cell Ablation Leads to Retinal Iron Accumulation. Invest Ophthalmol Vis Sci. 58 (10): 4223-34.
10. Nelvagal, H.R. *et al.* (2020) Comparative proteomic profiling reveals mechanisms for early spinal cord vulnerability in CLN1 disease. Sci Rep. 10 (1): 15157.
11. Hargreaves, A. *et al.* (2021) Tumors modulate fenestrated vascular beds and host endocrine status. J Appl Toxicol. 41 (12): 1952-65.
12. Zhang, K.R. *et al.* (2022) Conditional knockout of hephaestin in the neural retina disrupts retinal iron homeostasis. Exp Eye Res. 218: 109028.
13. Hargreaves, A. *et al.* (2022) Tumours modulate the systemic vascular response to anti-angiogenic therapy. J Appl Toxicol. 42 (8): 1371-84.
14. Hargreaves, A. *et al.* (2021) Tumors modulate fenestrated vascular beds and host endocrine status. J Appl Toxicol. 41 (12): 1952-65.

**Further Reading**

1. Lesley, J. *et al.* (1984) Expression of transferrin receptor on murine hematopoietic progenitors. Cell Immunol. 83 (1): 14-25.
2. Trowbridge, I.S. *et al.* (1982) Murine cell surface transferrin receptor: studies with an anti-receptor monoclonal antibody. J Cell Physiol. 112 (3): 403-10.

**Storage**

This product is shipped at ambient temperature. It is recommended to aliquot and store at -20°C on receipt. When thawed, aliquot the sample as needed. Keep aliquots at 2-8°C for short term use (up to 4 weeks) and store the remaining aliquots at -20°C.

Avoid repeated freezing and thawing as this may denature the antibody. Storage in frost-free freezers is not recommended. This product is photosensitive and should be protected from light.

**Guarantee**

12 months from date of despatch

**Acknowledgements**



**Health And Safety Information**

Material Safety Datasheet documentation #10041 available at:
https://www.bio-rad-antibodies.com/SDS/MCA1033A647
10041

**Regulatory**

For research purposes only

## Related Products

### Recommended Negative Controls

RAT IgG2a NEGATIVE CONTROL:Alexa Fluor® 647 (MCA1212A647)

## Recommended Useful Reagents

MOUSE SEROBLOCK FcR (BUF041A)
MOUSE SEROBLOCK FcR (BUF041B)


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


To find a batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets

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