# Datasheet: MCA773GA

**BATCH NUMBER 0715**

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| **Description:** | MOUSE ANTI RAT CD54 |
| **Specificity:** | CD54 |
| **Other names:** | ICAM-1 |
| **Format:** | Purified |
| **Product Type:** | Monoclonal Antibody |
| **Clone:** | 1A29 |
| **Isotype:** | IgG1 |
| **Quantity:** | 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.

| | Yes | No | Not Determined | Suggested Dilution |
|---|---|---|---|---|
| Flow Cytometry | ▪ | | | 1/25 - 1/50 |
| Immunohistology - Frozen | ▪ | | | |
| Immunohistology - Paraffin (1) | ▪ | | | |
| ELISA | | | ▪ | |
| Immunoprecipitation | ▪ | | | |
| Immunofluorescence | ▪ | | | |

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.

(1)**This clone is suitable for use on paraffin embedded material using target unmasking fluid HIS003B for this purpose.**

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| **Target Species** | Rat |
| **Product Form** | Purified IgG - liquid |
| **Preparation** | Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant |
| **Buffer Solution** | Phosphate buffered saline |

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| **Preservative Stabilisers** | 0.09% Sodium Azide |
| **Carrier Free** | Yes |
| **Approx. Protein Concentrations** | IgG concentration 1.0 mg/ml |
| **Immunogen** | Rat Ax cells (a HEV derived cell line). |
| **External Database Links** | **UniProt:**<br>Q00238 Related reagents<br><br>**Entrez Gene:**<br>25464 Icam1 Related reagents |
| **Synonyms** | Icam-1 |
| **Fusion Partners** | Spleen cells from immunised BALB/c mice were fused with cells from the PAI mouse myeloma cell line. |
| **Specificity** | **Mouse anti Rat CD54 antibody, clone 1A29** recognizes the rat CD54 cell surface antigen, also known as intercellular adhesion molecule-1 (ICAM-1), a ~90 kDa adhesion molecule belonging to the immunoglobulin superfamily.<br><br>CD54 is a cell surface ligand of the lymphocyte integrin, LFA-1 and is known to play an important role in various cell-cell interactions in the immune system. Studies suggest that cross-linking of ICAM-1 using clone 1A29 induces calcium signalling (Etienne *et al.*).<br><br>Functionally Mouse anti Rat CD54 antibody, clone 1A29 inhibits homotypic aggregation of PHA blasts. |
| **Flow Cytometry** | Use 10ul of the suggested working dilution to label $10^6$ cells in 100ul. |
| **References** | 1. Kawai, T. *et al.* (1999) Selective diapedesis of Th1 cells induced by endothelial cell RANTES. J Immunol. 163: 3269-78.<br>2. Sato, N. *et al.* (2000) Roles of ICAM-1 for abnormal leukocyte recruitment in the microcirculation of bleomycin-induced fibrotic lung injury. Am J Respir Crit Care Med. 161: 1681-8.<br>3. Etienne, S. *et al.* (1998) ICAM-1 signaling pathways associated with Rho activation in microvascular brain endothelial cells. J Immunol. 161 (10): 5755-61.<br>4. Etienne-Manneville, S. *et al.* (2000) ICAM-1-coupled cytoskeletal rearrangements and transendothelial lymphocyte migration involve intracellular calcium signaling in brain endothelial cell lines. J Immunol. 165 (6): 3375-83.<br>5. McKechnie, N. M. *et al.* (2002) Antigenic mimicry: Onchocerca volvulus antigen-specific T cells and ocular inflammation. Invest Ophthalmol Vis Sci. 43:411-8.<br>6. Banerjee, S. *et al.* (2003) Development of organised conjunctival leucocyte aggregates after corneal transplantation in rats. Br J Ophthalmol. 2003 Dec;87(12):1515-22. |

7. Kielian, T. *et al.* (2000) Proinflammatory cytokine, chemokine, and cellular adhesion molecule expression during the acute phase of experimental brain abscess development. Am J Pathol. 157: 647-58.
8. Trinh, L. *et al.* (2008) The corneal endothelium in an endotoxin-induced uveitis model: correlation between *in vivo* confocal microscopy and immunohistochemistry. Mol Vis. 14: 1149-56.
9. Adamson, P. *et al.* (1999) Lymphocyte migration through brain endothelial cell monolayers involves signaling through endothelial ICAM-1 via a rho-dependent pathway. J Immunol. 162: 2964-73.
10. Arsenović-Ranin, N. *et al.* (2000) A monoclonal antibody to the rat Crry/p65 antigen, a complement regulatory membrane protein, stimulates adhesion and proliferation of thymocytes. Immunology. 100: 334-44.
11. Beck-Schimmer, B. *et al.* (2001) Hypoxia mediates increased neutrophil and macrophage adhesiveness to alveolar epithelial cells. Am J Respir Cell Mol Biol. 25: 780-7.
12. Couty, J.P. (2007) PECAM-1 engagement counteracts ICAM-1-induced signaling in brain vascular endothelial cells. J Neurochem. 103: 793-801.
13. Deng, H. *et al.* (2003) Mild hypothermia inhibits inflammation after experimental stroke and brain inflammation. Stroke. 34: 2495-501.
14. Ikezumi, Y. *et al.* (2004) Macrophage-mediated renal injury is dependent on signaling via the JNK pathway. J Am Soc Nephrol. 15: 1775-84.
15. Kanellis, J. *et al.* (2010) JNK signalling in human and experimental renal ischaemia/reperfusion injury. Nephrol Dial Transplant. 25: 2898-908.
16. Westermann, D. *et al.* (2007) Cardioprotective and anti-inflammatory effects of interleukin converting enzyme inhibition in experimental diabetic cardiomyopathy. Diabetes. 56: 1834-41.
17. Zhu, X. *et al.* (2003) Matrine protects sinusoidal endothelial cells from cold ischemia and reperfusion injury in rat orthotopic liver transplantation. Ann Clin Lab Sci. 33: 216-25.
18. Choi, J.S. *et al.* (2011) Mild Hypothermia Attenuates Intercellular Adhesion Molecule-1 Induction via Activation of Extracellular Signal-Regulated Kinase-1/2 in a Focal Cerebral Ischemia Model. Stroke Res Treat. 2011: 846716.
19. Azcutia V *et al.* (2010) Inflammation determines the pro-adhesive properties of high extracellular d-glucose in human endothelial cells *in vitro* and rat microvessels *in vivo*. PLoS One. 5 (4): e10091.
20. Li, W. & Klein, S.L. (2012) Seoul virus-infected rat lung endothelial cells and alveolar macrophages differ in their ability to support virus replication and induce regulatory T cell phenotypes. J Virol. 86 (21): 11845-55.
21. Gates, D. *et al.* (2012) Apo J/clusterin expression and secretion: evidence for 15-deoxy-Δ(12,14)-PGJ(2)-dependent mechanism. Biochim Biophys Acta. 1821 (2): 335-42.
22. Li, Z. *et al.* (2015) Three-dimensional graphene foams loaded with bone marrow derived mesenchymal stem cells promote skin wound healing with reduced scarring. Mater Sci Eng C Mater Biol Appl. 57: 181-8.
23. Gautier, S. *et al.* (2015) PPAR-Alpha Agonist Used at the Acute Phase of Experimental Ischemic Stroke Reduces Occurrence of Thrombolysis-Induced Hemorrhage in Rats. PPAR Research. 2015: 1-6.
24. Liu, Y.C. *et al.* (2013) A biodegradable, sustained-released, prednisolone acetate

microfilm drug delivery system effectively prolongs corneal allograft survival in the rat keratoplasty model. PLoS One. 8 (8): e70419.
25. Ichihara, Y. *et al.* (2018) Self-assembling peptide hydrogel enables instant epicardial coating of the heart with mesenchymal stromal cells for the treatment of heart failure. Biomaterials. 154: 12-23.

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| **Storage** | Store at +4°C or at -20°C if preferred.<br><br>This product should be stored undiluted.<br>Storage in frost-free freezers is not recommended. Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use. |
| **Guarantee** | 18 months from date of despatch. |
| **Health And Safety Information** | Material Safety Datasheet documentation #10040 available at:<br>https://www.bio-rad-antibodies.com/SDS/MCA773GA<br>10040 |
| **Regulatory** | For research purposes only |

## Related Products

### Recommended Secondary Antibodies

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| Rabbit Anti Mouse IgG (STAR12...) | RPE |
| Human Anti Mouse IgG1 (HCA036...) | HRP |
| Goat Anti Mouse IgG IgA IgM (STAR87...) | Alk. Phos., HRP |
| Goat Anti Mouse IgG (STAR76...) | RPE |
| Rabbit Anti Mouse IgG (STAR13...) | HRP |
| Goat Anti Mouse IgG (STAR70...) | FITC |
| Goat Anti Mouse IgG (H/L) (STAR117...) | Alk. Phos., DyLight®488, DyLight®800, FITC, HRP |
| Rabbit Anti Mouse IgG (STAR9...) | FITC |
| Goat Anti Mouse IgG (Fc) (STAR120...) | FITC, HRP |

### Recommended Negative Controls

MOUSE IgG1 NEGATIVE CONTROL (MCA1209)

**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

To find a batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets
'M319827:180726'

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