

Datasheet: MCA2183

| | |
|----------------------|---------------------|
| Description: | RAT ANTI MOUSE CD13 |
| Specificity: | CD13 |
| Other names: | AMINOPEPTIDASE N |
| Format: | Purified |
| Product Type: | Monoclonal Antibody |
| Clone: | R3-63 |
| Isotype: | IgG2a |
| Quantity: | 0.25 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 | ▪ | | | 1/200 - 1/1000 |
| Immunohistology - Frozen | ▪ | | | |
| Immunohistology - Paraffin (1) | ▪ | | | |
| ELISA | | | ▪ | |
| Immunoprecipitation | | | ▪ | |
| Western Blotting | | | ▪ | |
| Immunofluorescence | ▪ | | | |

Where this product 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 product for use in their own system using appropriate negative/positive controls.

(1) This product requires antigen retrieval using heat treatment prior to staining of paraffin sections. Sodium citrate buffer pH 6.0 is recommended for this purpose. See [Bertilaccio et al.](#) for details.

| | |
|-----------------------|---|
| Target Species | Mouse |
| Product Form | Purified IgG - liquid |
| 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) |
| Carrier Free | Yes |
| Approx. Protein Concentrations | IgG concentration 1.0 mg/ml |
| Immunogen | Mouse intestinal APN |
| External Database Links | <p>UniProt: P97449 Related reagents</p> <p>Entrez Gene: 16790 Anpep Related reagents</p> |
| Synonyms | Lap1, Lap-1 |
| RRID | AB_323691 |
| Fusion Partners | Spleen cells from immunized mice were fused with cells of the IR983F rat myeloma cell line. |
| Specificity | <p>Rat anti Mouse CD13 antibody, clone R3-63 recognizes mouse aminopeptidase N (APN), a cell surface protein homologous with human CD13. In the mouse, CD13 is a non-covalently linked homodimer of approximately 150 kDa subunits expressed by a variety of cells including monocytes, macrophages, dendritic cell and veiled cells.</p> <p>Rat anti Mouse CD13 antibody, clone R3-63 has been reported to block mouse APN enzyme activity (Hansen <i>et al.</i> 1993).</p> |
| Flow Cytometry | Use 10µl of the suggested working dilution to label 10 ⁶ cells in 100µl |
| References | <ol style="list-style-type: none"> 1. Kamoun, W.S. <i>et al.</i> (2009) Edema control by cediranib, a vascular endothelial growth factor receptor-targeted kinase inhibitor, prolongs survival despite persistent brain tumor growth in mice. J Clin Oncol. 27: 2542-52. 2. Hansen, A.S. <i>et al.</i> (1993) A mouse aminopeptidase N is a marker for antigen-presenting cells and appears to be co-expressed with major histocompatibility complex class II molecules. Eur J Immunol. 23 (9): 2358-64. 3. Larsen, S.L. <i>et al.</i> (1996) T cell responses affected by aminopeptidase N (CD13)-mediated trimming of major histocompatibility complex class II-bound peptides. J Exp Med. 184 (1): 183-9. 4. Rangel, R. <i>et al.</i> (2007) Impaired angiogenesis in aminopeptidase N-null mice. Proc Natl Acad Sci U S A. 104: 4588-93. 5. Lahdenranta, J. <i>et al.</i> (2007) Treatment of hypoxia-induced retinopathy with targeted proapoptotic peptidomimetic in a mouse model of disease. FASEB J. 21: 3272-8. |

6. Li, P. *et al.* (2010) Use of adenoviral vectors to target chemotherapy to tumor vascular endothelial cells suppresses growth of breast cancer and melanoma. [Mol Ther. 18: 921-8.](#)
7. van Deventer, H.W. *et al.* (2008) C-C chemokine receptor 5 on pulmonary fibrocytes facilitates migration and promotes metastasis via matrix metalloproteinase 9. [Am J Pathol. 173: 253-64.](#)
8. Gabrilovac, J. *et al.* (2011) Expression, regulation and functional activities of aminopeptidase N (EC 3.4.11.2; APN; CD13) on murine macrophage J774 cell line. [Immunobiology. 216: 132-44.](#)
9. Ozawa, M.G. *et al.* (2008) Beyond receptor expression levels: the relevance of target accessibility in ligand-directed pharmacodelivery systems. [Trends Cardiovasc Med. 18: 126-32.](#)
10. Bertilaccio, M.T. *et al.* (2008) Vasculature-targeted tumor necrosis factor-alpha increases the therapeutic index of doxorubicin against prostate cancer. [Prostate. 68: 1105-15.](#)
11. Boström, M. *et al.* (2014) The hippocampal neurovascular niche during normal development and after irradiation to the juvenile mouse brain. [Int J Radiat Biol. 90: 778-89.](#)
12. Mayer-Barber, K.D. *et al.* (2011) Innate and adaptive interferons suppress IL-1 α and IL-1 β production by distinct pulmonary myeloid subsets during *Mycobacterium tuberculosis* infection. [Immunity. 35: 1023-34.](#)
13. Winnicka, B. *et al.* (2010) CD13 is dispensable for normal hematopoiesis and myeloid cell functions in the mouse. [J Leukoc Biol. 88: 347-59.](#)
14. Ridder, D.A. *et al.* (2015) Brain endothelial TAK1 and NEMO safeguard the neurovascular unit. [J Exp Med. 212 \(10\): 1529-49.](#)
15. Vanlandewijck, M. *et al.* (2015) Functional Characterization of Germline Mutations in PDGFB and PDGFRB in Primary Familial Brain Calcification. [PLoS One. 10 \(11\): e0143407.](#)
16. Körbelin J *et al.* (2016) A brain microvasculature endothelial cell-specific viral vector with the potential to treat neurovascular and neurological diseases. [EMBO Mol Med. 8 \(6\): 609-25.](#)
17. Zotz, J.S. *et al.* (2016) CD13/aminopeptidase N is a negative regulator of mast cell activation. [FASEB J. 30 \(6\): 2225-35.](#)
18. Sung, S.J. *et al.* (2017) Proximal Tubule CD73 Is Critical in Renal Ischemia-Reperfusion Injury Protection. [J Am Soc Nephrol. 28 \(3\): 888-902.](#)
19. Yanagida, K. *et al.* (2017) Size-selective opening of the blood-brain barrier by targeting endothelial sphingosine 1-phosphate receptor 1. [Proc Natl Acad Sci U S A. 114 \(17\): 4531-6.](#)
20. Elabi, O. *et al.* (2021) Human α -synuclein overexpression in a mouse model of Parkinson's disease leads to vascular pathology, blood brain barrier leakage and pericyte activation. [Sci Rep. 11 \(1\): 1120.](#)
21. Kato, T. *et al.* (2020) Excessive Production of Transforming Growth Factor β 1 Causes Mural Cell Depletion From Cerebral Small Vessels. [Front Aging Neurosci. 12: 151.](#)
22. Chen, X. *et al.* (2023) Functional gene delivery to and across brain vasculature of systemic AAVs with endothelial-specific tropism in rodents and broad tropism in primates. [Nat Commun. 14 \(1\): 3345.](#)

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.

| | |
|------------------|---------------------------------|
| Guarantee | 12 months from date of despatch |
|------------------|---------------------------------|

| | |
|--------------------------------------|--|
| Health And Safety Information | Material Safety Datasheet documentation #10040 available at: https://www.bio-rad-antibodies.com/SDS/MCA2183 10040 |
|--------------------------------------|--|

| | |
|-------------------|----------------------------|
| Regulatory | For research purposes only |
|-------------------|----------------------------|

Related Products

Recommended Secondary Antibodies

| | |
|--|---|
| Rabbit Anti Rat IgG (STAR16...) | DyLight@800 |
| Rabbit Anti Rat IgG (STAR17...) | FITC |
| Goat Anti Rat IgG (STAR72...) | HRP |
| Goat Anti Rat IgG (STAR69...) | FITC |
| Goat Anti Rat IgG (STAR73...) | RPE |
| Rabbit Anti Rat IgG (STAR21...) | HRP |
| Goat Anti Rat IgG (MOUSE ADSORBED) (STAR71...) | DyLight@550 , DyLight@650 , DyLight@800 |
| Goat Anti Rat IgG (STAR131...) | Alk. Phos. , Biotin |

Recommended Negative Controls

[RAT IgG2a NEGATIVE CONTROL \(MCA1212\)](#)

| | | | | | |
|----------------------------------|---|------------------|---|---------------|---|
| 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
'M413197:221120'

Printed on 19 Jan 2024