Datasheet: MCA2558F

BATCH NUMBER 150834

Description:	MOUSE ANTI DOG CD107b:FITC
Specificity:	CD107b
Other names:	LAMP-2
Format:	FITC
Product Type:	Monoclonal Antibody
Clone:	AC17
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)	▪			Neat

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)**Membrane permeabilisation is required for this application. Bio-Rad recommends the use of Leucoperm™ (Product Code BUF09) for this purpose.**

Target Species

Dog

Species Cross Reactivity

Reacts with: Mink, Human

Does not react with:Mouse, Rat

N.B. Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information.

Product Form

Purified IgG conjugated to Fluorescein Isothiocyanate Isomer 1 (FITC) - liquid

Max Ex/Em

Fluorophore	Excitation Max (nm)	Emission Max (nm)
FITC	490	525

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 Concentrations	IgG concentration 0.1mg/ml
Immunogen	MDCK (Madin-Darby Canine Kidney) cells
RRID	AB_999246
Fusion Partners	Spleen cells from immunised Balb/c mice were fused with cells of the NS1 myeloma cell line

Specificity

Mouse anti Dog CD107b antibody, clone AC17 recognizes canine CD107b, otherwise known as lysosome-associated membrane protein 2 or LAMP-2. Immunofluorescence staining of MDCK cells with mouse anti dog CD107b, clone AC17 demonstrates staining patterns consistent with localization to lysozomes. This is supported by coincident staining of an exogenous lysozomal glycoprotein, avian LEP100 transfected into MDCK cells and detected using the anti LEP100 antibody clone CV24 (Nabi *et al.*1991).

Mouse anti Dog CD107b antibody, clone AC17 immunoprecipitates a protein of ~95 kDa in MDCK cells which, following Endo F digestion to remove N-linked oligosaccharides, yields a core protein product of 40 kDa, indicating the heavily glycosylated nature of CD107b. The molecular weight of canine CD107b is typical of many lysozome-associated membrane proteins. While most (97%) CD107b resides in the lysozomal environment in adherent MDCK cells *in vitro*, early studies (Nabi *et al.*1991) indicated that a small percentage of total cellular CD107b, as revealed by radioimmune assay with clone AC17, is found associated with the cell membrane.

Lysosomes are membrane-bound organelles found within the cytoplasm of most cells, they contain hydrolytic enzymes and act as the major compartment for heterophagic and autophagic digestion. Members of the lysosomal-associated membrane protein family (LAMPS) are believed to play an important role in protecting the lysosomal membrane from protease degradation and are involved in lectin-mediated cell adhesion. CD107b has been shown to share high N-terminal amino acid sequence homology with human, mouse and rat CD107b (Nabi *et al.*1993).

Transfection of a mink type II lung epithelial cell line with beta1-6-N-acetylglucosaminyl transferase V demonstrates the formation of large lysozomal vacuoles, termed multilamellar bodies (MLBs), having a very distinct phenotype with expression of CD107b, as indicated by immunofluorescent staining with clone AC17. These MLBs require lysozomal degradation via an autophagic pathway for their formation and may have implications for lysozomal storage diseases (Hariri *et al.*2000). Evidence shows that

CD107b is involved in the lysosomal uptake of cytosolic proteins and the endocytic pathway. Human studies have revealed a correlation between the level of surface expression of CD107b on tumor cells and their metastatic potential (Saitoh *et al.* 1992).

Mouse anti Dog CD107b antibody, clone AC17 has been shown as suitable for use in electron microscopy (Nabi *et al.*1991).

Flow Cytometry

Use 10ul of the suggested working dilution to label 1x10^6 cells in 100ul.

References

1. Nabi, I.R. *et al.* (1991) An endogenous MDCK lysosomal membrane glycoprotein is targeted basolaterally before delivery to lysosomes. J Cell Biol. 115 (6): 1573-84.
2. Nabi, I.R. & Rodriguez-Boulan, E. (1993) Increased LAMP-2 polylactosamine glycosylation is associated with its slower Golgi transit during establishment of a polarized MDCK epithelial monolayer. Mol Biol Cell. 4 (6): 627-35.
3. Jou, T.S. *et al.* (2000) Selective alterations in biosynthetic and endocytic protein traffic in Madin-Darby canine kidney epithelial cells expressing mutants of the small GTPase Rac1. Mol Biol Cell. 11 (1): 287-304.
4. Ihrke, G. *et al.* (2001) Competing sorting signals guide endolyn along a novel route to lysosomes in MDCK cells. EMBO J. 20 (22): 6256-64.
5. Pluhar, G.E. *et al.* (2010) Anti-tumor immune response correlates with neurological symptoms in a dog with spontaneous astrocytoma treated by gene and vaccine therapy. Vaccine 28 (19): 3371-8.
6. Cliffe, S.T. *et al.* (2009) SLC29A3 gene is mutated in pigmented hypertrichosis with insulin-dependent diabetes mellitus syndrome and interacts with the insulin signaling pathway. Hum Mol Genet. 18: 2257-65.
7. Bai, Y. *et al.* (2011) Intracellular neutralization of viral infection in polarized epithelial cells by neonatal Fc receptor (FcRn)-mediated IgG transport. Proc Natl Acad Sci U S A. 108 (45): 18406-11.
8. Nagahama, M. *et al.* (2011) Cellular vacuolation induced by *Clostridium perfringens* epsilon-toxin. FEBS J. 278: 3395-407.
9. Nagahama, M. *et al.* (2012) Intracellular trafficking of *Clostridium perfringens* iota-toxin b. Infect Immun. 80: 3410-6.
10. Hariri, M. *et al.* (2000) Biogenesis of multilamellar bodies via autophagy. Mol Biol Cell. 11: 255-68.

Further Reading

1. Fukuda, M. (1991) Lysosomal membrane glycoproteins. Structure, biosynthesis, and intracellular trafficking. J Biol Chem. 266 (32): 21327-30.

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. 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.

Guarantee

12 months from date of despatch

Health And Safety

Material Safety Datasheet documentation #10041 available at:

Information	https://www.bio-rad-antibodies.com/SDS/MCA2558F 10041
Regulatory	For research purposes only

Related Products

Recommended Negative Controls

MOUSE IgG1 NEGATIVE CONTROL:FITC (MCA928F)

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

'M367173:200529'

Printed on 18 Jan 2024