Datasheet: MCA1998S

Description:	MOUSE ANTI DOG CD4
Specificity:	CD4
Format:	S/N
Product Type:	Monoclonal Antibody
Clone:	CA13.1E4
Isotype:	IgG1
Quantity:	2 ml

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
Immunohistology - Frozen	▪			
Immunohistology - Paraffin			▪	
ELISA			▪	
Immunoprecipitation	▪			

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	Dog
Product Form	Tissue Culture Supernatant - liquid
Preservative Stabilisers	0.1% Sodium Azide
Immunogen	Canine Thymocytes
External Database Links	**UniProt:** P33705 Related reagents **Entrez Gene:** 403931 CD4 Related reagents

RRID	AB_2077610
Fusion Partners	Spleen cells from immunised Balb/c mice were fused with cells of the P3X63-Ag.653 mouse myeloma cell line.
Specificity	**Mouse anti Dog CD4 antibody (CA13.1E4)**, a monoclonal antibody specific for canine CD4. CA13.1E4 was clustered at the first Canine Leukocyte Antigen Workshop (Claw) [Cobbold *et al.* 1992] and identifies, by immunoprecipitation a ~60 kDa monomeric protein under both reducing and non-reducing conditions. Canine CD4 is a surface glycoprotein expressed by non CD8 expressing T lymphocytes, with similar developmental and functional characteristics to T helper cells described in other mammalian species. Mouse anti Dog CD4 also recognizes a population of CD8 positive cells in the canine thymus (Moore *et al.* 1992). CD4 expression has also been reported on a population of CD3 positive peripheral blood T lymphocytes which are double positive for CD4 and CD8 (Bismarck *et al.* 2012). Similar reports have been made for cynomolgus monkey (Nam *et al.* 2000), pig (Saalmuller *et al.* 1987 , Pescowitz *et al.* 1990) as well as rat, chicken and human (reviewed Zuckermann 1999). Uniquely amongst mammalian species clone CA13.1E4 also recognizes CD4 expressed on canine neutrophils at a similar density to that expressed on canine T helper cells. The functional significance of this is not understood and remains enigmatic in view of the roles described for CD4 in canine and other mammalian species (Moore *et al.* 1992). Clone CA13.1E4 also demonstrates immunohistological staining of splenic marginal zone macrophages (Moore *et al.* 1992). Other macrophage populations, such as splenic red pulp macrophages and Langerhans cells do not stain with clone CA13.1E4. Canine CD4 positive T cells can be further characterized according to their simultaneous expression of CD45RA as recognized by Rat anti Canine anti CD45RA clone CA4.1D3 in a manner analogous to that seen with human T cells (Moore *et al.* 1992). Clone CA13.1E4 has been used amongst a large panel of anti-canine monoclonal antibodies for the study of various lymphoproliferative diseases. T lymphocytes in large granular lymphocyte (LGL) lymphocytosis are negative for CD4 (McDonough and Moore 2000). Dogs with chronic myelogenous leukemia demonstrate CD4 positive staining on neutrophils (Tarrant *et al.* 2001). CD4 expression varies considerably between various canine leukemias.
Flow Cytometry	Use 25ul of the suggested working dilution to label 10^6 cells or 100ul whole blood.
Histology Positive Control Tissue	Spleen, lymph node
References	1. Moore, P.F. *et al*. (1992) Monoclonal antibodies specific for canine CD4 and CD8 define functional T-lymphocyte subsets and high-density expression of CD4 by canine neutrophils. Tissue Antigens 40(2): 75-85. 2. Cobbold, S. & Metcalfe, S. (1994) Monoclonal antibodies that define canine

homologues of human CD antigens: summary of the First International Canine Leukocyte Antigen Workshop (CLAW). Tissue Antigens. 43 (3): 137-54.
3. Veenhof, E.Z. *et al.* (2011) Characterisation of T cell phenotypes, cytokines and transcription factors in the skin of dogs with cutaneous adverse food reactions. Vet J. 187 (3): 320-4.
4. Izci C *et al.* (2015) Clinical and light microscopic studies of the conjunctival tissues of dogs with bilateral keratoconjunctivitis sicca before and after treatment with topical 2% cyclosporine. Biotech Histochem. 90 (3): 223-30.
5. Ricklin, M.E. *et al.* (2010) Characterization of canine dendritic cells in healthy, atopic, and non-allergic inflamed skin. J Clin Immunol. 30 (6): 845-54.
6. Wijewardana, V. *et al.* (2013) Production of canine soluble CD40 ligand to induce maturation of monocyte derived dendritic cells for cancer immunotherapy. Vet Immunol Immunopathol. 156 (1-2): 121-7.
7. Kamiie, J. *et al.* (2014) Quantitative analysis of CD3ε in a cloned canine lymphoma cell line by selected reaction monitoring assay. Biosci Biotechnol Biochem. 78 (2): 271-5.
8. Heinrich, F. *et al.* (2015) Immunophenotyping of immune cell populations in the raccoon (*Procyon lotor*). Vet Immunol Immunopathol. 168 (3-4): 140-6.
9. Yuasa, K. *et al.* (2007) Injection of a recombinant AAV serotype 2 into canine skeletal muscles evokes strong immune responses against transgene products. Gene Ther. 14 (17): 1249-60.
10. Lin Shiow-Chen *et al.* (2014) Immune Characterization of Peripheral Blood Mononuclear cells of the Dogs Restored from Innoculation of Canine Transmissible Venereal Tumor Cells. Tai Vet J. 40 (04): 181-190.
11. Constantinoiu, C.C. *et al.* (2015) Mucosal tolerance of the hookworm *Ancylostoma caninum* in the gut of naturally infected wild dogs. Parasite Immunol. Jul 27 [Epub ahead of print].
12. Lin, C.S. *et al.* (2018) Activating natural killer (NK) cytotoxicity of canine $CD5^{-}CD21^{-}$ cells requires low surface CD5 density NK cells. Iran J Vet Res. 19 (2): 87-95.

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 #10336 available at: 10336: https://www.bio-rad-antibodies.com/uploads/MSDS/10336.pdf
Regulatory	For research purposes only

Related Products

Recommended Secondary Antibodies

Goat Anti Mouse IgG (STAR77...)	HRP

Rabbit Anti Mouse IgG (STAR12...)	RPE
Rabbit Anti Mouse IgG (STAR8...)	DyLight®800
Goat Anti Mouse IgG (STAR76...)	RPE
Goat Anti Mouse IgG (Fc) (STAR120...)	FITC, HRP
Goat Anti Mouse IgG IgA IgM (STAR87...)	Alk. Phos., HRP
Rabbit Anti Mouse IgG (STAR13...)	HRP
Goat Anti Mouse IgG (STAR70...)	FITC
Rabbit Anti Mouse IgG (STAR9...)	FITC
Goat Anti Mouse IgG (H/L) (STAR117...)	Alk. Phos., DyLight®488, DyLight®550, DyLight®650, DyLight®680, DyLight®800, FITC, HRP

Recommended Negative Controls

MOUSE IgG1 NEGATIVE CONTROL (MCA928)

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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'M383377:210513'

Printed on 17 Sep 2021