# Datasheet: MCA1568SBUV400

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| **Description:** | MOUSE ANTI HUMAN CD14:StarBright UltraViolet 400 |
| **Specificity:** | CD14 |
| **Format:** | StarBright UltraViolet 400 |
| **Product Type:** | Monoclonal Antibody |
| **Clone:** | TÜK4 |
| **Isotype:** | IgG2a |
| **Quantity:** | 100 TESTS/0.5ml |

## 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 |

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.

**Target Species**

Human

**Species Cross Reactivity**

Reacts with: Dog, Goat, Cat, Rabbit, Mink, Bovine, Pig, Sheep, Cynomolgus monkey, Llama

**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 StarBright UltraViolet 400 - liquid

**Max Ex/Em**

| Fluorophore | Excitation Max (nm) | Emission Max (nm) |
|---|---|---|
| StarBright UltraViolet 400 | 347 | 394 |

**Preparation**

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

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| **Buffer Solution** | Phosphate buffered saline |
| **Preservative Stabilisers** | 0.09% Sodium Azide ($NaN_3$)<br>1% Bovine Serum Albumin<br>0.1% Pluronic F68<br>0.1% PEG 3350<br>0.05% Tween 20 |
| **External Database Links** | **UniProt:**<br>P08571 Related reagents<br><br>**Entrez Gene:**<br>929 CD14 Related reagents |
| **Specificity** | **Mouse anti human CD14 antibody, clone TÜK4** recognizes the human CD14 cell surface antigen. CD14 is a ~55 kDa glycoprotein that contains multiple leucine-rich repeats. It is anchored to the cell membrane via a glycosylphosphatidylinositol (GPI) linkage (Simmons *et al.* 1989), a soluble form of CD14 also exists (Bazil *et al.* 1986).<br><br>CD14 is strongly expressed on the surface of monocytes and macrophages but has also been shown to be expressed on the surface of non-myeloid cells (Jersmann 2005). CD14 functions as a pattern recognition receptor (Pugin *et al.* 1994, Dziarski *et al.* 1998) in innate immunity for a variety of ligands, in particular for the LPS (endotoxin) of Gram-negative bacteria.<br><br>Mouse anti human CD14 antibody, clone TÜK4 has been shown to block SDF-induced chemotaxis of U937 cells in a dose –dependent manner (Yang *et al.* 2003). Use of the anti-human CD14 antibody, Low Endotoxin format is recommended for this purpose. |
| **Flow Cytometry** | Use 5ul of the suggested working dilution to label $10^6$ cells in 100ul. Best practices suggest a 5 minutes centrifugation at 6,000g prior to sample application. |
| **References** | 1. Weiss, D.J. (2001) Evaluation of proliferative disorders in canine bone marrow by use of flow cytometric scatter plots and monoclonal antibodies. Vet Pathol. 38: 512-8.<br>2. Gupta, V.K. *et al.* (1996) Identification of the sheep homologue of the monocyte cell surface molecule--CD14. Vet Immunol Immunopathol. 51 (1-2): 89-99.<br>3. Sopp, P. & Howard, C.J. (1997) Cross-reactivity of monoclonal antibodies to defined human leucocyte differentiation antigens with bovine cells. Vet Immunol Immunopathol. 56 (1-2): 11-25.<br>4. Xiong, W. *et al.* (2010) Human Flt3L generates dendritic cells from canine peripheral blood precursors: implications for a dog glioma clinical trial. PLoS One. 5: e11074.<br>5. Werling, D. *et al.* (1998) Analysis of the phenotype and phagocytic activity of monocytes/macrophages from cattle infected with the bovine leukaemia virus. Vet Immunol Immunopathol. 62 (3): 185-95.<br>6. Yang, H. *et al.* (2003) Antibody to CD14 like CXCR4-specific antibody 12G5 could inhibit CXCR4-dependent chemotaxis and HIV Env-mediated cell fusion. Immunol Lett. 88 (1): 27-30. |

7. Yoshino, N. *et al.* (2000) Upgrading of flow cytometric analysis for absolute counts, cytokines and other antigenic molecules of cynomolgus monkeys (*Macaca fascicularis*) by using anti-human cross-reactive antibodies. Exp Anim. 49 (2): 97-110.
8. Jacobsen, C.N. *et al.* (1993) Reactivities of 20 anti-human monoclonal antibodies with leucocytes from ten different animal species. Vet Immunol Immunopathol. 39 (4): 461-6.
9. Martel, C.J. & Aasted, B. (2009) Characterization of antibodies against ferret immunoglobulins, cytokines and CD markers. Vet Immunol Immunopathol. 132:109-15.
10. Dalli J *et al.* (2008) Annexin 1 mediates the rapid anti-inflammatory effects of neutrophil-derived microparticles. Blood. 112 (6): 2512-9.
11. Lybeck, K.R. *et al.* (2009) Neutralization of interleukin-10 from CD14(+) monocytes enhances gamma interferon production in peripheral blood mononuclear cells from *Mycobacterium avium* subsp. *paratuberculosis*-infected goats. Clin Vaccine Immunol. 16 (7): 1003-11.
12. Ferret-Bernard, S. *et al.* (2010) Cellular and molecular mechanisms underlying the strong neonatal IL-12 response of lamb mesenteric lymph node cells to R-848. PLoS One. 5: e13705.
13. Fulton, B.E. Jr. *et al.* (2006) Dissemination of bovine leukemia virus-infected cells from a newly infected sheep lymph node. J Virol. 80: 7873-84.
14. Willett, B.J. *et al.* (2007) Probing the interaction between feline immunodeficiency virus and CD134 by using the novel monoclonal antibody 7D6 and the CD134 (Ox40) ligand. J Virol. 81: 9665-79.
15. Kallapur, S.G. *et al.* (2011) Pulmonary and systemic inflammatory responses to intra-amniotic IL-1α in fetal sheep. Am J Physiol Lung Cell Mol Physiol. 301 (3): L285-95.
16. Lund, H. *et al.* (2016) Transient Migration of Large Numbers of CD14(++) CD16(+) Monocytes to the Draining Lymph Node after Onset of Inflammation. Front Immunol. 7: 322.
17. Krueger, L.A. *et al.* (2016) Gamma delta T cells are early responders to Mycobacterium avium ssp. paratuberculosis in colostrum-replete Holstein calves. J Dairy Sci. 99 (11): 9040-50.
18. Gelain, M.E. *et al.* (2014) CD44 in canine leukemia: analysis of mRNA and protein expression in peripheral blood. Vet Immunol Immunopathol. 159 (1-2): 91-6.
19. Schaut, R.G. *et al.* (2015) Bovine viral diarrhea virus type 2 *in vivo* infection modulates TLR4 responsiveness in differentiated myeloid cells which is associated with decreased MyD88 expression. Virus Res. 208: 44-55.
20. Westover, A.J. *et al.* (2016) An Immunomodulatory Device Improves Insulin Resistance in Obese Porcine Model of Metabolic Syndrome. J Diabetes Res. 2016: 3486727.
21. Pomeroy, B. *et al.* (2017) Counts of bovine monocyte subsets prior to calving are predictive for postpartum occurrence of mastitis and metritis. Vet Res. 48 (1): 13.
22. Gibson, A.J. *et al.* (2016) Differential macrophage function in Brown Swiss and Holstein Friesian cattle. Vet Immunol Immunopathol. 181: 15-23.
23. Martini, V. *et al.* (2018) Flow cytometry for feline lymphoma: a retrospective study regarding pre-analytical factors possibly affecting the quality of samples. J Feline Med Surg. 20 (6): 494-501.
24. Novacco, M. *et al.* (2016) Prognostic factors in canine acute leukaemias: a retrospective study. Vet Comp Oncol. 14 (4): 409-16.
25. Feng, P.H. *et al.* (2018) S100A9$^{+}$ MDSC and TAM-mediated EGFR-TKI resistance in

lung adenocarcinoma: the role of *RELB*. Oncotarget. 9 (7): 7631-43.
26. Higgins, J.L. *et al.* (2018) Cell mediated immune response in goats after experimental challenge with the virulent Brucella melitensis strain 16M and the reduced virulence strain Rev. 1. Vet Immunol Immunopathol. 202: 74-84.
27. Penadés, M. *et al.* (2020) Early deviations in performance, metabolic and immunological indicators affect stayability in rabbit females. Animal. 14 (4): 780-9.
28. Schwarz, E.R. *et al.* (2020) Experimental Infection of Mid-Gestation Pregnant Female and Intact Male Sheep with Zika Virus. Viruses. 12 (3)Mar 07 [Epub ahead of print].
29. Mas, A. *et al.* (2020) A further investigation of the leishmaniosis outbreak in Madrid (Spain): low-infectivity phenotype of the *Leishmania infantum* BOS1FL1 isolate to establish infection in canine cells. Vet Immunol Immunopathol. 230: 110148.
30. Tuohy, J.L. *et al.* (2020) Immune dysregulation and osteosarcoma: *Staphylococcus aureus.* downregulates TGF-β and heightens the inflammatory signature in human and canine macrophages suppressed by osteosarcoma. Vet Comp Oncol. 18 (1): 64-75.
31. Sipka, A.S. *et al.* (2020) The effect of *ex vivo.* lipopolysaccharide stimulation and nutrient availability on transition cow innate immune cell AKT/mTOR pathway responsiveness. J Dairy Sci. 103 (2): 1956-1968.
32. Lessard, M. *et al.* (2018) Piglet weight gain during the first two weeks of lactation influences the immune system development. Vet Immunol Immunopathol. 206: 25-34.
33. Moncada-Saucedo, N.K. *et al.* (2019) A Bioactive Cartilage Graft of IGF1-Transduced Adipose Mesenchymal Stem Cells Embedded in an Alginate/Bovine Cartilage Matrix Tridimensional Scaffold. Stem Cells Int. 2019: 9792369.
34. Muñoz-Silvestre, A. *et al.* (2020) Pathogenesis of Intradermal Staphylococcal Infections: Rabbit Experimental Approach to Natural *Staphylococcus aureus* Skin Infections. Am J Pathol. 190 (6): 1188-210.
35. Park, D.S. *et al.* (2021) Dynamic changes in blood immune cell composition and function in Holstein and Jersey steers in response to heat stress. Cell Stress Chaperones. 26 (4): 705-20.
36. Grudzien, M. *et al.* (2021) A newly established canine NK-type cell line and its cytotoxic properties. Vet Comp Oncol. 19 (3): 567-77.
37. Risalde, M.A. *et al.* (2020) BVDV permissiveness and lack of expression of co-stimulatory molecules on PBMCs from calves pre-infected with BVDV. Comp Immunol Microbiol Infect Dis. 68: 101388.

**Further Reading**

1. Simmons, D. L. *et al.* (1989) Monocyte antigen CD14 is a phospholipid anchored membrane protein. Blood. 73:284-9.
2. Bazil, V. *et al.* (1986) Biochemical characterization of a soluble form of the 53-kDa monocyte surface antigen. Eur J Immunol. 16:1583-9.
3. Jersmann, H.P. (2005) Time to abandon dogma: CD14 is expressed by non-myeloid lineage cells. Immunol Cell Biol. 83:462-7.
4. Pugin, J. *et al.* (1994) CD14 is a pattern recognition receptor. Immunity.1:509-16.
5. Dziarski, R. *et al.* (1998) Binding of bacterial peptidoglycan to CD14. J Biol Chem. 273:8680-90.
6. Piriou-Guzylack, L. (2008) Membrane markers of the immune cells in swine: an update. Vet Res. 39: 54.

**Storage**

Store at +4°C. DO NOT FREEZE.

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| | This product should be stored undiluted. |
| **Guarantee** | 12 months from date of despatch |
| **Acknowledgements** | This product is covered by U.S. Patent No. 10,150,841 and related U.S. and foreign counterparts |
| **Health And Safety Information** | Material Safety Datasheet documentation #20471 available at:<br>20471: https://www.bio-rad-antibodies.com/uploads/MSDS/20471.pdf |
| **Regulatory** | For research purposes only |

## Related Products

### Recommended Useful Reagents

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HUMAN SEROBLOCK (BUF070B)


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