Technical Data Sheet

# Purified NA/LE Rat Anti-Mouse CD14

## Product Information

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| **Material Number:** | **557896** |
| **Size:** | 0.5 mg |
| **Concentration:** | 1.0 mg/ml |
| **Clone:** | 4C1/CD14 (also known as 4C1) |
| **Immunogen:** | Mouse monocyte/macrophage cell line |
| **Isotype:** | Rat (DA) IgG2b, κ |
| **Reactivity:** | QC Testing: Mouse |
| **Storage Buffer:** | No azide/low endotoxin: Aqueous buffered solution containing no preservative, 0.2μm sterile filtered. Endotoxin level is ≤0.01 EU/μg (≤0.001 ng/μg) of protein as determined by the LAL assay. |

## Description

The 4C1/CD14 antibody reacts with CD14, a ~55-kDa glycosyl phosphatidyl inositol (GPI)-linked cell-surface glycoprotein. Flow cytometric analysis demonstrates that 4C1/CD14 antibody stains CD14 transfectants, the monocyte/macrophage cell line RAW 264.7 peritoneal exudate neutrophils and macrophages, and cultured bone marrow-derived macrophages, but not undifferentiated bone marrow cells, splenocytes, or peripheral blood leukocytes. This staining pattern is similar to that of the alternate anti-mouse CD14 mAb rmC5-3, which recognizes a different CD14 epitope, and differs from that of the human, where CD14 expression is characteristic of circulating monocytes and neutrophils. Therefore, data suggest that CD14 expression by leukocyte populations may differ in mice and humans. CD14 is a receptor for the complex of lipopolysaccharide (LPS or endotoxin, from gram-negative bacteria) with LPS-binding protein (LBP, a plasma protein). After binding to LPS-LPB, CD14 associates with integral membrane proteins (such as TLR4-MD-2) which mediate signal transduction. It is involved in the development of endotoxic shock, innate immunity, inflammatory responses, and LPS-stimulated bone resorption. Unlike mAb rmC5-3, the 4C1/CD14 antibody blocks the binding of LPS to CD14.

## Preparation and Storage

Store undiluted at 4°C.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

This preparation contains no preservatives, thus it should be handled under aseptic conditions.

## Application Notes

**Application**

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| Flow cytometry | Routinely Tested |
| Blocking | Reported |
| Immunoprecipitation | Reported |

## Suggested Companion Products

| Catalog Number | Name | Size | Clone |
|---|---|---|---|
| 553985 | Purified NA/LE Rat IgG2b, κ Isotype Control | 0.5 mg | A95-1 |
| 554016 | FITC Goat Anti-Rat Ig | 0.5 mg | Polyclonal |

## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. An isotype control should be used at the same concentration as the antibody of interest.
3. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

## References

Adachi Y, Satokawa C, Saeki M, et al. Inhibition by a CD14 monoclonal antibody of lipopolysaccharide binding to murine macrophages. *J Endotoxin Res.* 1999; 5(3):139-146. (Immunogen: Blocking, Immunoprecipitation)

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Haziot A, Ferrero E, Kontgen F, et al. Resistance to endotoxin shock and reduced dissemination of gram-negative bacteria in CD14-deficient mice. *Immunity.* 1996; 4(4):407-414. (Biology)

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Le Roy D, Di Padova F, Adachi Y, Glauser MP, Calandra T, Heumann D. Critical role of lipopolysaccharide-binding protein and CD14 in immune responses against gram-negative bacteria. *J Immunol.* 2001; 167(5):2759-2765. (Clone-specific: Blocking)

Matsuura K, Ishida T, Setoguchi M, Higuchi Y, Akizuki S, Yamamoto S. Upregulation of mouse CD14 expression in Kupffer cells by lipopolysaccharide. *J Exp Med.* 1994; 179(5):1671-1676. (Clone-specific: Flow cytometry, Western blot)

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Miyata Y, Takeda H, Kitano S, Hanazawa S. Porphyromonas gingivalis lipopolysaccharide-stimulated bone resorption via CD14 is inhibited by broad-spectrum antibiotics. *Infect Immun.* 1997; 65(9):3513-3519. (Biology)
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Tasaka S, Ishizaka A, Yamada W, et al. Effect of CD14 blockade on endotoxin-induced acute lung injury in mice. *Am J Respir Cell Mol Biol* . 2003; 29(2):252-258. (Clone-specific: Blocking)
Triantafilou M, Triantafilou K. Lipopolysaccharide recognition: CD14, TLRs and the LPS-activation cluster. *Trends Immunol.* 2002; 23(6):301-304. (Biology)
Yang S, Sugawara S, Monodane T, et al. Micrococcus luteus teichuronic acids activate human and murine monocytic cells in a CD14- and toll-like receptor 4-dependent manner. *Infect Immun.* 2001; 69(4):2025-2030. (Clone-specific: Blocking)
Ziegler-Heitbrock HW. Heterogeneity of human blood monocytes: the CD14+ CD16+ subpopulation. *Immunol Today.* 1996; 17(9):424-428. (Biology)

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