

PRODUCT INFORMATION



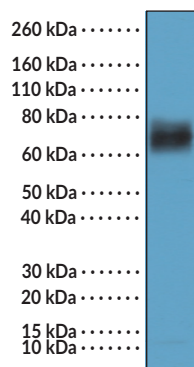
CD33 (C-Term) Rabbit Monoclonal Antibody (RM398)

Item No. 32317

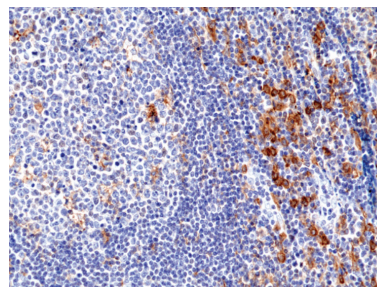
Overview and Properties

Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	Cluster of Differentiation 33, Myeloid Cell Surface Antigen CD33, Sialic Acid-binding Ig-like Lectin 3, Siglec-3
Immunogen:	Peptide from the C-terminal region of CD33
Cross Reactivity:	(+) CD33
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM398
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:100-1:200 for IHC and WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



WB of HL-60 cell lysate using CD33 (C-Term) Rabbit Monoclonal Antibody (RM398) at a dilution of 1:100.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human tonsil tissue using CD33 (C-Term) Rabbit Monoclonal Antibody (RM398) at a dilution of 1:100.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

CD33 is a transmembrane receptor and member of the sialic acid-binding immunoglobulin-type (Ig-type) lectin (SIGLEC) family.¹ It is composed of N-terminal extracellular Ig-like variable (IgV) and Ig-like constant 2 (IgC2) domains, as well as intracellular immunoreceptor tyrosine-based inhibitory motif (ITIM) and ITIM-like (ITL) domains. CD33 has two isoforms formed *via* alternative splicing, a full-length form and CD33m, which lacks the IgV-like domain.² The full-length form is expressed on myeloid progenitor cells and in microglia while CD33m is found in myeloid cells and lymphocytes.^{1,2} CD33 is an inhibitory receptor activated by binding of sialic acid-containing molecules, such as glycolipids and glycoproteins, to the IgV domain, which stimulates phosphorylation of tyrosine in the ITIM domain, leading to recruitment of Src homology 2 domain-containing phosphatases (SHPs) and internalization of the CD33-ligand complex.³ Signaling downstream of CD33 inhibits phagocytosis and cytokine release from immune cells, as well as regulates immune cell growth and survival. CD33 protein is found on patient-derived acute myeloid leukemia (AML) progenitor cells but not non-cancerous stem cells.⁴ A SNP in CD33 is associated with, and considered a risk factor for, Alzheimer's disease.¹ Cayman's CD33 (C-Term) Rabbit Monoclonal Antibody (RM398) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. Estus, S., Shaw, B.C., Devanney, N., *et al.* Evaluation of CD33 as a genetic risk factor for Alzheimer's disease. *Acta Neuropathol.* **138(2)**, 187-199 (2019).
2. Pérez-Oliva, A.B., Martínez-Esparza, M., Vicente-Fernández, J.J., *et al.* Epitope mapping, expression and post-translational modifications of two isoforms of CD33 (CD33M and CD33m) on lymphoid and myeloid human cells. *Glycobiology* **21(6)**, 757-770 (2011).
3. Zhao, L. CD33 in Alzheimer's disease - biology, pathogenesis, and therapeutics: A mini-review. *Gerontology* **65(4)**, 323-331 (2109).
4. Laszlo, G.S., Estey, E.H., and Walter, R.B. The past and future of CD33 as therapeutic target in acute myeloid leukemia. *Blood Rev.* **28(4)**, 143-153 (2014).

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