PRODUCT INFORMATION

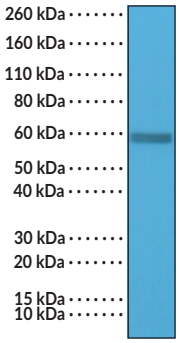
CD5 (C-Term) Rabbit Monoclonal Antibody (Clone RM314)

Item No. 32256

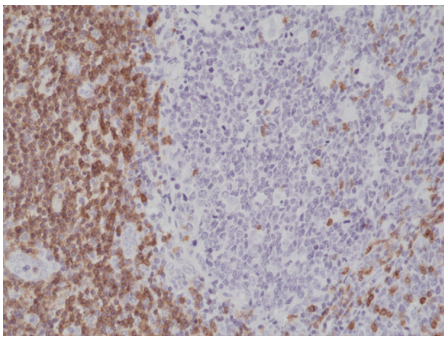
Overview and Properties

Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	Cluster of Differentiation 5, Leu-1, Ly-1 Antigen, Lyt-1
Immunogen:	Peptide from the C-terminal region of human CD5
Cross Reactivity:	(+) CD5
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:	RM314
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:500-1:1,000 for IHC and 1:1,000-1:2,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



WB of Jurkat cell lysates using CD5 (C-Term) Rabbit Monoclonal Antibody (Clone RM314) at a dilution of 1:1,000.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human tonsil tissue using CD5 (C-Term) Rabbit Monoclonal Antibody (Clone RM314) at a dilution of 1:1,000.

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Description

CD5 is a type I transmembrane glycoprotein receptor and member of the scavenger receptor cysteine-rich (SRCR) superfamily.[1] It is composed of three extracellular cysteine-rich domains, a transmembrane region, and a cytoplasmic tail containing an imperfect immunoreceptor tyrosine-based activating motif (ITAM). CD5 is expressed at differing levels on mature $CD4^+$ and $CD8^+$ T cells and thymocytes, and at lower levels on B1a cells and B cell chronic lymphocytic leukemia (B-CLL) cells.[2] It acts a negative regulator of T cell signaling, despite the presence of an ITAM, and has a role in promoting the survival of thymocytes and mature T cells. $CD5^+$ B cells are at their highest levels during development, lowest during early adulthood, and increase in middle-to-late adulthood, a change that correlates with an increased incidence of B-CLL and mantle cell lymphoma (MCL).[3] $CD5^+$ B cells primarily have a follicular mantle phenotype and produce low affinity polyreactive antibodies. CD5 expression on T cells protects against experimental autoimmune encephalomyelitis (EAE) in mice, but the levels of $CD5^+$ B cells are increased in patients with systemic lupus erythematosus (SLE).[4,5] CD5 has a complex role in cancer, with high levels of CD5 on tumor-infiltrating T cells (TILs) protecting TILs from apoptosis, but reduced CD5 levels on TILs enhancing $CD8^+$ T cell-mediated lysis of malignant cells.[4] CD5 has commonly been used as a marker of T cells, B1a cells, and B-CLL cells.[2] Cayman's CD5 (C-Term) Rabbit Monoclonal Antibody (Clone RM314) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. Perez-Villar, J.J., Whitney, G.S., Bowen, M.A., *et al.* CD5 negatively regulates the T-cell antigen receptor signal transduction pathway: Involvement of SH2-containing phosphotyrosine phosphatase SHP-1. *Mol. Cell. Biol.* **19(4)**, 2903-2912 (1999).
2. Burgueño-Bucio, E., Mier-Aguilar, C.A., and Soldevila, G. The multiple faces of CD5. *J. Leukoc. Biol.* **105(5)**, 891-904 (2019).
3. Dono, M., Cerruti, G., and Zupo, S. The CD5+ B-cell. *Int. J. Biochem. Cell Biol.* **36(11)**, 2105-2111 (2004).
4. Dalloul, A. CD5: A safeguard against autoimmunity and a shield for cancer cells. *Autoimmun. Rev.* **8(4)**, 349-353 (2009).
5. Pers, J.-O., Jamin, C., Predine-Hug, F., *et al.* The role of CD5-expressing B cells in health and disease (review). *Int. J. Mol. Med.* **3(3)**, 239-245 (1999).

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