PRODUCT INFORMATION

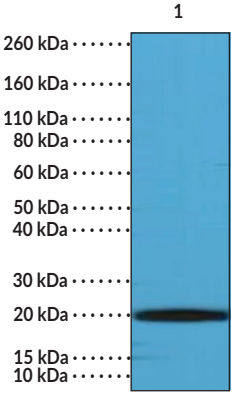
CD3ε (C-Term) Rabbit Monoclonal Antibody (Clone RM344)

Item No. 32277

Overview and Properties

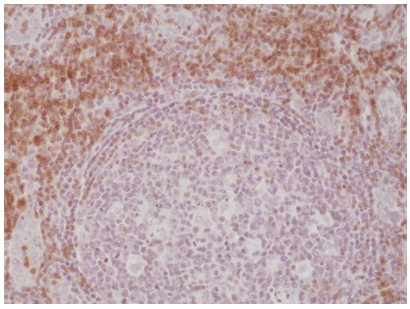
Contents:	This vial contains 100 of µl protein A-affinity purified monoclonal antibody.
Synonyms:	CD3E, Cluster of Differentiation 3E
Immunogen:	Peptide from the C-terminal region of human CD3ε
Cross Reactivity:	(+) CD3ε cytoplasmic domain
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM344
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:100-1:200 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



Lane 1: Jurkat cell lysate

WB of Jurkat cell lysate using CD3ε (C-Term) Rabbit Monoclonal Antibody (RM344) at a dilution of 1:1,000.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human tonsil tissue using CD3ε (C-Term) Rabbit Monoclonal Antibody (Clone RM344) at a 1:200 dilution.

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Description

CD3 is a co-receptor for the T cell receptor (TCR), a cell surface receptor that recognizes antigens presented by MHC molecules and has a key role in the adaptive immune response.[1,2] CD3 exists as a dimer composed of γ, δ, ε, or ζ subunits, which are type I transmembrane proteins encoded by distinct genes that enable TCR signal transduction.[1,3] CD3ε is composed of an extracellular immunoglobulin (Ig) domain that mediates protein-protein interactions, a short membrane-proximal connecting peptide that is critical for TCR signaling, a transmembrane segment, and an intracellular immunoreceptor tyrosine-based activation motif (ITAM) that is phosphorylated by the tyrosine kinase Lck, resulting in T cell activation, proliferation, and survival.[1,2,4] CD3ε forms heterodimers with CD3γ or CD3δ that interact with CD3ζζ homodimers to generate CD3 hexamers that noncovalently bind the TCR to form the CD3-TCR complex. Formulations containing murine anti-CD3ε IgG2a monoclonal antibodies have been used in the treatment of acute allograft rejection. Cayman's CD3ε (C-Term) Rabbit Monoclonal Antibody (Clone RM344) can be used for immunohistochemistry (IHC) and Western blot (WB) applications. The antibody recognizes the cytoplasmic domain of CD3ε from human samples.

References

1. Dong, D., Zheng, L., Lin, J., *et al*. Structural basis of assembly of the human T cell receptor–CD3 complex. *Nature* **573(7775)**, 546-552 (2019).
2. Birnbaum, M.E., Berry, R., Hsiao, Y.-S., *et al*. Molecular architecture of the αβ T cell receptor–CD3 complex. *Proc. Natl. Acad. Sci. USA* **111(49)**, 17576-17581 (2014).
3. San José, E., Sahuquillo, A.G., Bragado, R., *et al*. Assembly of the TCR/CD3 complex: CD3ε/δ and CD3ε/ɣ dimers associate indistinctly with both TCR α and TCR β chains. Evidence for a double TCR heterodimer model. *Eur. J. Immunol.* **28(1)**, 12-21 (1998).
4. Li, L., Guo, X., Shi, X., *et al*. Ionic CD3–Lck interaction regulates the initiation of T-cell receptor signaling. *Proc. Natl. Acad. Sci. USA* **114(29)**, E5891-E5899 (2017).

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