

PRODUCT INFORMATION



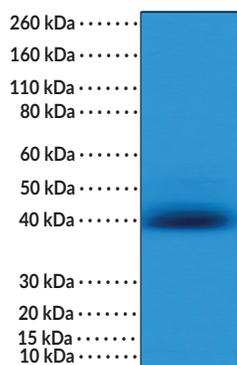
CD28 (C-Term) Rabbit Monoclonal Antibody (RM404)

Item No. 32330

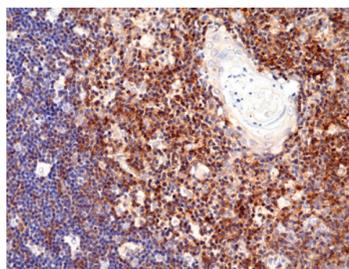
Overview and Properties

Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	T cell-specific Surface Glycoprotein CD28, TP44
Immunogen:	Peptide from the C-terminal region of human CD28
Cross Reactivity:	(+) CD28
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:	RM404
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution 1:100-1:200. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



WB of human T cell lysate using CD28 (C-Term) Rabbit Monoclonal Antibody (RM404) at a dilution of 1:200.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human thymus using CD28 (C-Term) Rabbit Monoclonal Antibody (RM404) at a dilution of 1:200.

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

CD28 is a glycoprotein and member of the CD28/B7 family of co-stimulatory receptors that promotes T cell activation.¹ Alternative splicing of CD28 produces one full-length long isoform, CD28 long, and three short isoforms, CD28a, CD28b, and CD28c.² CD28 long exists as a membrane-bound homodimer and contains a leader peptide, an extracellular immunoglobulin variable (IgV) domain that interacts with the co-stimulatory molecules CD80 (Item No. 32013) or CD86 and a cytoplasmic tail that mediates the association with the signal transduction enzyme PI3K and is critical for T cell activation.^{1,3} CD28a, CD28b, and CD28c contain truncated extracellular or transmembrane domains and exist as soluble monomers (CD28a) or membrane-bound homodimers (CD28b and CD28c).² CD28 is constitutively expressed on the surface of T cells, upregulated by antigen-presenting cells (APCs) displaying MHC-bound antigen, and downregulated after T cell activation.^{4,5} CD28 competes with CTLA-4 (Item No. 32009), an inhibitor of T cell activation also expressed on T cells, for binding to CD80 or CD86, promoting T cell activation by inducing the production of cytokines, such as IL-2 and IFN- γ , and decreasing the T cell receptor activation threshold.⁴ Genetic deletion of *Cd28* abolishes cellular infiltration and bone erosion in the joints and decreases serum levels of anti-collagen-IgG in a mouse model of collagen-induced arthritis.⁶ CD28 levels are decreased on plasma cells isolated from patients with multiple myeloma and this decrease is associated with disease progression and poor prognosis.⁷ CD28 SNPs have been found in individuals with sporadic breast cancer.⁸ Cayman's CD28 (C-Term) Rabbit Monoclonal Antibody (RM404) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. Esensten, J.H., Helou, Y.A., Chopra, G., *et al.* CD28 costimulation: from mechanism to therapy. *Immunity* **44**(5), 973-988 (2016).
2. Magistrelli, G., Jeannin, P., Elson, G., *et al.* Identification of three alternatively spliced variants of human CD28 mRNA. *Biochem. Biophys. Res. Commun.* **259**(1), 34-37 (1999).
3. Stein, P.H., Fraser, J.D., and Weiss, A. The cytoplasmic domain of CD28 is both necessary and sufficient for costimulation of interleukin-2 secretion and association with phosphatidylinositol 3'-kinase. *Mol. Cell Biol.* **14**(5), 3392-3402 (1994).
4. Mak, T.W. and Saunders, M.E. T cell activation. *The Immune Response: Basic and Clinical Principles*. Picknett, T. and Lebedeva, V., editors, Elsevier Academic Press (2006).
5. Vallejo, A.N., Brandes, J.C., Weyand, C.M., *et al.* Modulation of CD28 expression: Distinct regulatory pathways during activation and replicative senescence. *J. Immunol.* **162**(11), 6572-6579 (1999).
6. Tada, Y., Nagasawa, K., Ho, A., *et al.* CD28-deficient mice are highly resistant to collagen-induced arthritis. *J. Immunol.* **162**(1), 203-208 (1999).
7. Nair, J.R., Calson, L.M., Koorella, C., *et al.* CD28 expressed on malignant plasma cells induces a pro-survival and immunosuppressive microenvironment. *J. Immunol.* **187**(3), 1243-1253 (2011).
8. Chen, S., Zhang, Q., Shen, L., *et al.* Investigation of CD28 gene polymorphisms in patients with sporadic breast cancer in a Chinese Han population in northeast China. *PLoS One* **7**(10), (2012).

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