Revision 1

CD28 (CD28.2) Mouse mAb (PE Conjugate)

Store at +4C

#27826

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
FC-L	H	Endogenous	Mouse IgG1 kappa	#P10747	940

Product Usage Information

Application	Dilution
Flow Cytometry (Live)	1:20

Storage

Supplied in 10 mM NaH2PO4, 150 mM NaCl, 0.09% NaN3, 0.1% gelatin, pH 7.2. This product is stable for 12 months when stored at 4ºC. Do not aliquot the antibody. Protect from light. Do not freeze.

Specificity/Sensitivity

CD28/CD28.2 Mouse mAb (PE Conjugate) recognizes endogenous levels of total CD28 protein. This antibody detects an epitope within the extracellular domain.

Source / Purification

This monoclonal antibody was purified from tissue culture supernatant via affinity chromatography. The purified antibody was conjugated under optimal conditions, with unreacted dye removed from the preparation.

Description

This Cell Signaling Technology antibody is conjugated to PE and tested in-house for direct flow cytometry analysis in human cells.

Background

CD28 is a transmembrane glycoprotein expressed by T cells as well as some other hematopoietic cells (1, 2). T cell activation requires T cell receptor (TCR) recognition of antigen presented in the context of MHC molecules. CD28 acts as a T cell costimulatory receptor, and interaction of CD28 with its ligands CD80 or CD86 provides the second signal required for naïve T cell activation (3-5). Activation of naïve T cells in the absence of CD28 stimulation can result in a state of T cell anergy, or unresponsiveness (3). CD28 signals through cytoplasmic phospho-tyrosine motifs that bind several SH2 or SH3 domain-containing proteins involved in T cell activation (2). Recently, CD28 was demonstrated to be a preferred target of PD-1-mediated dephosphorylation. Consistently, CD28 expression was required for T cell proliferation following PD-1 blockade and CD28 stimulation was required for effective anti-PD-1 cancer immunotherapy in mice (6, 7). Several CD28 isoforms are produced by alternative splicing (8).

Background References

1. Aruffo, A. and Seed, B. (1987) *Proc Natl Acad Sci U S A* 84, 8573-7.
2. Esensten, J.H. et al. (2016) *Immunity* 44, 973-88.
3. Harding, F.A. et al. (1992) *Nature* 356, 607-9.
4. Azuma, M. et al. (1993) *Nature* 366, 76-9.
5. Linsley, P.S. et al. (1990) *Proc Natl Acad Sci U S A* 87, 5031-5.
6. Hui, E. et al. (2017) *Science* 355, 1428-1433.
7. Kamphorst, A.O. et al. (2017) *Science* 355, 1423-1427.
8. Magistrelli, G. et al. (1999) *Biochem Biophys Res Commun* 259, 34-7.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Applications Key

FC-L: Flow Cytometry (Live)

Cross-Reactivity Key

H: Human

Trademarks and Patents

Limited Uses

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