

Datasheet: MCA6117APC

BATCH NUMBER 169981

Description:	MOUSE ANTI HUMAN CD137:APC
Specificity:	CD137
Other names:	TNFRSF9
Format:	APC
Product Type:	Monoclonal Antibody
Clone:	4B4-1
Isotype:	IgG1
Quantity:	100 TESTS/1ml

Product Details

Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	▪			Neat

Where this product has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the product for use in their own system using appropriate negative/positive controls.

Target Species	Human		
Species Cross Reactivity	Reacts with: Primate N.B. Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information.		
Product Form	Purified IgG conjugated to Allophycocyanin (APC) - liquid		
Max Ex/Em	Fluorophore	Excitation Max (nm)	Emission Max (nm)
	APC	650	661
Preparation	Purified IgG prepared by affinity chromatography on Protein A from tissue culture supernatant		

Buffer Solution	Phosphate buffered saline
Preservative	<0.1% Sodium Azide (NaN ₃)
Stabilisers	0.2% Bovine Serum Albumin
Immunogen	Recombinant human CD137 ectodomain
External Database Links	UniProt: Q07011 Related reagents Entrez Gene: 3604 TNFRSF9 Related reagents
Synonyms	CD137, ILA
Specificity	Mouse anti Human CD137, clone 4B4-1 recognizes CD137. CD137 (also known as 4-1BB ligand receptor or TNFRSF9) is a type I transmembrane glycoprotein of the Tumor Necrosis Factor receptor family that is expressed on activated T and NK cells, dendritic cells, myeloid cells and at the surface of some non-lymphoid cells under specific conditions (Schwarz et al. 1995). CD137 acts as a receptor for 4-1BB ligand, expressed on activated macrophages, activated B cells, hematopoietic stem cells and myeloid progenitor cells (Pollock et al. 1994) and for some proteins of the extracellular matrix (Chalupny et al. 1992). The interaction between CD137 and 4-1BBL acts as a co-stimulatory signal for the activation, expansion and survival of T cells (Wen et al. 2002). CD137 signaling is involved in the generation of CD8+ T cells and enhance their cytotoxic activity (Shuford et al. 1997). Because of its ability to promote the anti-tumorigenic activity of cytotoxic T cells, CD137 is the target of several cancer immune therapies, such as the agonist anti-CD137 Urelumab (Segal et al. 2017) and Utomilumab (Chester et al. 2018). CD137 also binds to the adaptor proteins TRAF1, 2 and 3 to promote NF-kappaB activation (Jang et al. 1998). Mouse anti-human CD137, clone 4B4-1 has been reported to immunoprecipitate a homodimeric protein of 32kDa under reducing conditions and 85kDa under non-reducing conditions (Garni-Wagner et al. 1996).
Purity	>95% by SDS PAGE
Flow Cytometry	Use 10ul of the undiluted reagent to label 1x10 ⁶ cells in 100ul
Further Reading	- Chalupny, N.J. <i>et al.</i> (1992) T-cell activation molecule 4-1BB binds to extracellular matrix proteins. Proc Natl Acad Sci U S A. 89 (21): 10360-4. - Pollok, K.E. <i>et al.</i> (1994) 4-1BB T-cell antigen binds to mature B cells and macrophages, and costimulates anti-mu-primed splenic B cells. Eur J Immunol. 24 (2): 367-74. - Schwarz, H. <i>et al.</i> (1995) ILA, the human 4-1BB homologue, is inducible in lymphoid

and other cell lineages. [Blood. 85 \(4\): 1043-52.](#)

4. Garni-wagner, B.A. *et al.* (1996) 4-1BB is expressed on CD45RAhiROhi transitional T cell in humans. [Cell Immunol. 169 \(1\): 91-8.](#)

5. Shuford, W.W. *et al.* (1997) 4-1BB costimulatory signals preferentially induce CD8+ T cell proliferation and lead to the amplification in vivo of cytotoxic T cell responses. [J Exp Med. 186 \(1\): 47-55.](#)

6. Wen, T. *et al.* (2002) 4-1BB ligand-mediated costimulation of human T cells induces CD4 and CD8 T cell expansion, cytokine production, and the development of cytolytic effector function. [J Immunol. 168 \(10\): 4897-906.](#)

7. Segal, N.H. *et al.* (2017) Results from an Integrated Safety Analysis of Urelumab, an Agonist Anti-CD137 Monoclonal Antibody. [Clin Cancer Res. 23 \(8\): 1929-1936.](#)

8. Chester, C. *et al.* (2018) Immunotherapy targeting 4-1BB: mechanistic rationale, clinical results, and future strategies. [Blood. 131 \(1\): 49-57.](#)

Storage	Store at +4°C. DO NOT FREEZE. This product should be stored undiluted. This product is photosensitive and should be protected from light.
Guarantee	Guaranteed for 12 months from the date of despatch or until the date of expiry, whichever comes first. Please see label for expiry date.
Health And Safety Information	Material Safety Datasheet documentation #10041 available at: https://www.bio-rad-antibodies.com/SDS/MCA6117APC
Regulatory	For research purposes only

Related Products

Recommended Negative Controls

[MOUSE IgG1 NEGATIVE CONTROL:APC \(MCA928APC\)](#)

Product inquiries: www.bio-rad-antibodies.com/technical-support

To find a batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets

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