

#34594 Store at -20°C

4-1BB/CD137/TNFRSF9 (D2Z4Y) Rabbit mAb



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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP, IHC-P, IF-IC, FC-FP, FC-L	H	Endogenous	32, 40	Rabbit IgG	#Q07011	3604

Product Usage Information	Application	Dilution
	Western Blotting	1:1000
	Immunoprecipitation	1:50
	Immunohistochemistry (Paraffin)	1:50 - 1:200
	Immunofluorescence (Immunocytochemistry)	1:250 - 1:1000
	Flow Cytometry (Fixed/Permeabilized)	1:400 - 1:1600
	Flow Cytometry (Live)	1:400 - 1:1600
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. <i>Do not aliquot the antibody.</i>	
	For a carrier free (BSA and azide free) version of this product see product #58350.	
Specificity / Sensitivity	4-1BB/CD137/TNFRSF9 (D2Z4Y) Rabbit mAb recognizes endogenous levels of total 4-1BB/CD137/TNFRSF9 protein.	
Source / Purification	Monoclonal antibody is produced by immunizing animals with a recombinant protein specific to the extracellular domain of human 4-1BB/CD137/TNFRSF9 protein.	
Background	TNFRSF9 is a member of the tumor necrosis factor receptor superfamily (1,2). It is also called 4-1BB or CD137 (1, 2). 4-1BB/CD137/TNFRSF9 is expressed in activated CD4+ and CD8+ T cells, natural killer cells and dendritic cells (2-5). The ligand 4-1BBL/CD137L/TNFSF9 on antigen presenting cells binds to 4-1BB/CD137/TNFRSF9 and costimulates the activation of T cells (5). The binding of agonistic antibodies to 4-1BB/CD137/TNFRSF9 also leads to costimulation for T cell activation (5). Studies have shown the effectiveness of targeting 4-1BB/CD137/TNFRSF9 by its agonistic antibodies in cancer immunotherapy (6).	
Background References	<ol style="list-style-type: none"> Sun, Y. et al. (2002) <i>Nat Med</i> 8, 1405-13. Wilcox, R.A. et al. (2002) <i>J Clin Invest</i> 109, 651-9. Lin, W. et al. (2008) <i>Blood</i> 112, 699-707. Wilcox, R.A. et al. (2002) <i>J Immunol</i> 168, 4262-7. Melero, I. et al. (1997) <i>Nat Med</i> 3, 682-5. Yonezawa, A. et al. (2015) <i>Clin Cancer Res</i> 21, 3113-20. 	

Species Reactivity	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
Western Blot Buffer	IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.
Applications Key	WB: Western Blotting IP: Immunoprecipitation IHC-P: Immunohistochemistry (Paraffin) IF-IC: Immunofluorescence (Immunocytochemistry) FC-FP: Flow Cytometry (Fixed/Permeabilized) FC-L: Flow Cytometry (Live)
Cross-Reactivity Key	H: human M: mouse R: rat Hm: hamster Mk: monkey Vir: virus Mi: mink C: chicken Dm: D. melanogaster X: Xenopus Z: zebrafish B: bovine Dg: dog Pg: pig Sc: S. cerevisiae Ce: C. elegans Hr: horse GP: Guinea Pig Rab: rabbit All: all species expected
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