Revision 3

Store at -20C

#4531

Phospho-TAK1 (Thr184/187) Antibody

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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:
W	H	Endogenous	82	Rabbit	#O43318	6885

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Phospho-TAK1 (Thr184/187) Antibody detects endogenous levels of TAK1 only when phosphorylated at both threonine 184 and threonine 187. This antibody weakly cross-reacts with TAK1 singly phosphorylated at threonine 184.

Species predicted to react based on 100% sequence homology

Mouse, Rat, Chicken, Xenopus, Zebrafish, Bovine

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a phosphopeptide corresponding to residues surrounding Thr184 and Thr187 of human TAK1. Antibodies are purified by protein A and peptide affinity chromatography.

Background

TAK1 is a mitogen-activated protein kinase kinase kinase that can be activated by TGF-β, bone morphogenetic protein, and other cytokines, including IL-1 (1,2). *In vivo* activation of TAK1 requires association with TAK1 binding protein 1 (TAB1), which triggers phosphorylation of TAK1 (3,4). Another adaptor protein, TAB2, links TAK1 with TRAF6 and mediates TAK1 activation upon IL-1 stimulation (5). Once activated, TAK1 phosphorylates MAPK kinases MKK4 and MKK3/6, which activate p38 MAPK and JNK, respectively. In addition, TAK1 activates the NF-κB pathway by interacting with TRAF6 and phosphorylating the NF-κB inducing kinase (NIK) (2).

TAK1 activation requires multiple phosphorylations in its activation loop. Mutations of Thr187 and Thr184, residues located in the activation loop of TAK1, impairs phosphorylation of both TAK1 and TAB1 and reduces the kinase activity of TAK1, suggesting that autophosphorylation of these residues is necessary for TAK1 activation (4).

Background References

1. Yamaguchi, K. et al. (1995) *Science* 270, 2008-11.
2. Ninomiya-Tsuji, J. et al. (1999) *Nature* 398, 252-6.
3. Shibuya, H. et al. (1996) *Science* 272, 1179-82.
4. Sakurai, H. et al. (2000) *FEBS Lett* 474, 141-5.
5. Takaesu, G. et al. (2000) *Mol Cell* 5, 649-58.
6. Onodera, Y. et al. (2015) *FEBS Open Bio* 5, 492-501.

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

W: Western Blotting

Cross-Reactivity Key

H: Human

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