

TAK1 ABfinity™ Recombinant Rabbit Monoclonal Antibody - Purified

REF Catalog no. 700113

(See product label for lot information)

Clone/PAD: 28H25L68
Isotype: IgG
Gene ID: 6885
Protein Acc. No.: O43318
Qty: 100 µg
Volume: 200 µl
Concentration: 0.5 mg/ml

Formulation

PBS + 0.09% sodium azide

Immunogen

A recombinant protein corresponding to amino acids 476-606 of O43318.

Immunogen sequence

TRSHPWTPDDSTDTNGSDNSIPMAYLTL
DHQLQPLAPCPNSKESMAVFEQHCKMA
QEYMKVQTEIALLLQRKQELVAELDQDEK
DQQNTSRLVQEHHKLLDENKSLSTYYQQ
CKKQLEVIRSQQQKRQGT

Reactivity

This antibody reacts with Human TAK1. Based on sequence similarity, reactivity to Rhesus monkey, orangutan, chimpanzee, mouse, rat, equine, swine, bovine, chicken, Xenopus, and zebrafish is expected.

Storage

2-8°C for up to 1 mo, -20°C for long term storage. Avoid repeated freezing and thawing.



Expiration Date

Expires one year from date of receipt when stored as instructed.



Validated Applications:

	Species	Test Material	Concentration
Western Blotting	human	HeLa	0.5-2 µg/ml
Immunofluorescence	human	HeLa	4-6 µg/ml
Flow Cytometry	human	Jurkat	1-3 µg/test

Background

TAK1 (also known as MAP3K7) is a versatile protein with many signaling functions. Originally identified as a TGF-β-activated kinase, TAK1 interacts with TGF-β-receptor and TRAF6 to modulate TGF-β activation of JNK and p38 (1). It has additional roles in activation of p38 and JNK through Wnt, BMP, and activin signaling pathways as well in response to thyroid hormone, osmotic stress, endothelin, and ephrine. Through activation of von Hippel-Lindau tumor suppressor expression, TAK1 represses PDGF-B, integrin β1 and integrin β5, promoting proper wound healing (2). TAK1 also plays an essential role in IKK activation in numerous signaling pathways including IL-1, IL-6, IL-18, TNF, CD40, TLR, and RIG-I (1). Activation of the TAK1-IKK pathway requires TAB2/3 and ubiquitination (3). In this process, TAB2/3 binds to the C-terminal region of TAK1 and becomes polyubiquitinated, TAK1 is autophosphorylated at Thr178, Thr184, Thr187 and Ser192, and finally TAK1 phosphorylates IKK-β. Additionally, TAK1 represses human telomerase reverse transcriptase suggesting a role in regulation of cell lifespan (4).

References

- Shinohara, H. and Kurosaki, T. (2009) Comprehending the complex connection between PKCβ, TAK1, and IKK in BCR signaling. *Immunol. Rev.* 232: 300-318.
- Tan, S.H. et al. (2009) Regulation of cell proliferation and migration by TAK1 via transcriptional control of von Hippel-Lindau tumor suppressor. *J. Biol. Chem.* 284: 18047-18058.
- Xia, Z-P. et al. (2009) Direct activation of protein kinases by unanchored polyubiquitin chains. *Nature* 461: 114-119.
- Fujiki, T. et al. (2007) TAK1 represses transcription of the human telomerase reverse transcriptase gene. *Oncogene* 26: 5258-5266.

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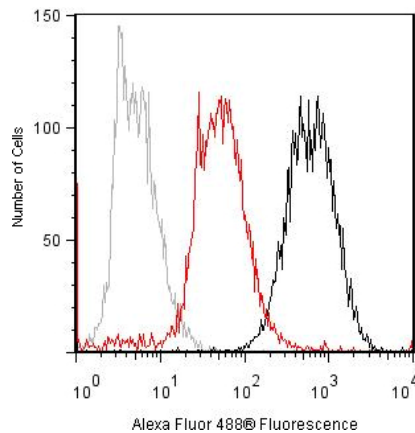
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PI700113 (DCC-09-1998) Rev 12/09

Page 1 of 2

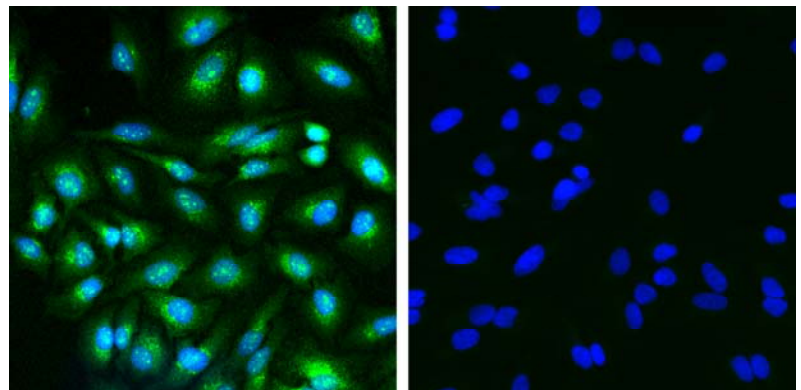
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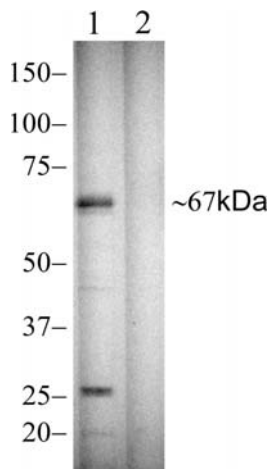
Flow cytometry of Jurkat cells labeled with rabbit anti-TAK1 (Cat. No. 700113).

Jurkat cells were fixed and permeabilized using FIX & PERM® reagents (Cat. No. GAS004). Cells were then stained with 2 µg/test anti-TAK1 in the absence (black trace) or in the presence of immunogenic protein (red trace) followed by Alexa Fluor® 488 goat anti-rabbit Ig [Cat. No. A11008]. The gray trace represents unstained cells.



Immunocytochemistry of HeLa cells labeled with rabbit anti-TAK1 (Cat. No. 700113).

HeLa cells were labeled with rabbit anti-TAK1 (1 µg/ml). Alexa Fluor® 488 goat anti-rabbit (Cat. No. A11008) at 1:1000 was used as secondary antibody. Pre-incubation with immunogen decreased signal (right). Nucleus is stained with Hoescht (blue), AF488 signal (TAK1, green).



Western blot of HeLa lysates labeled with rabbit anti-TAK1 (Cat. No. 700113).

Rabbit anti-TAK1 (1 µg/ml) was used to label TAK1 in HeLa lysates (lane 1). Pre-incubation with the immunogen eliminated the signal (lane 2).

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