SANTA CRUZ BIOTECHNOLOGY, INC.

Tak1 (M-17): sc-1839

BACKGROUND

Several serine/threonine protein kinases have been implicated as intermediates in signal transduction pathways. These include ERK/MAP kinases, ribosomal S6 kinase (Rsk) and Raf-1. Raf-1 is a protein with intrinsic kinase activity towards serine/threonine residues and that is widely expressed in many tissue types and cell lines. Raf-1 activation is dependent on the small molecular weight GTPase Ras, but the means by which this activation occurs is poorly understood. Two proteins putatively involved in this process are Ksr-1 and Tak1. Ksr-1 (kinase suppressor of Ras) is a novel Raf-related protein kinase whose function is required for Ras signal transduction. Whether Ksr-1 lies directly downstream of Ras or acts in a parallel pathway is not yet known. Tak1 (TGFβ-activated kinase) has been shown to participate in the activation of the MAP kinase family in response to TGFß stimulation.

CHROMOSOMAL LOCATION

Genetic locus: MAP3K7 (human) mapping to 6q15; Map3k7 (mouse) mapping to 4 A5.

SOURCE

Tak1 (M-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Tak1 of mouse origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1839 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Tak1 (M-17) is recommended for detection of Tak1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Tak1 (M-17) is also recommended for detection of Tak1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Tak1 siRNA (h): sc-36606, Tak1 siRNA (m): sc-36607, Tak1 shRNA Plasmid (h): sc-36606-SH, Tak1 shRNA Plasmid (m): sc-36607-SH, Tak1 shRNA (h) Lentiviral Particles: sc-36606-V and Tak1 shRNA (m) Lentiviral Particles: sc-36607-V.

Molecular Weight of Tak1: 70 kDa.

Positive Controls: Tak1 (m): 293T Lysate: sc-126071, HeLa whole cell lysate: sc-2200 or A-431 whole cell lysate: sc-2201.

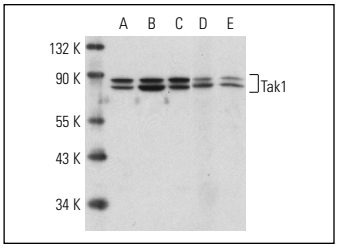
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

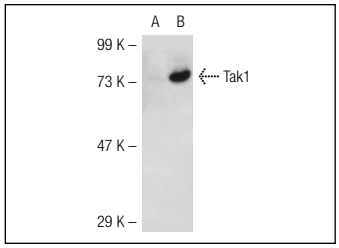
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



Tak1 (M-17): sc-1839. Western blot analysis of Tak1 expression in HeLa (**A**), 3611-RF (**B**) and A-431 (**C**) whole cell lysates and rat thymus (**D**) and mouse thymus (**E**) tissue extracts.



Tak1 (M-17): sc-1839. Western blot analysis of Tak1 expression in non-transfected: sc-117752 (**A**) and mouse Tak1 transfected: sc-126071 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Chen, Y.R., et al. 1998. Inhibition of the c-Jun N-terminal kinase (JNK) signaling pathway by curcumin. Oncogene 17: 173-178.
2. Sakurai, H., et al. 1999. Functional interactions of transforming growth factor β-activated kinase 1 with IκB kinases to stimulate NFκB activation. J. Biol. Chem. 274: 10641-10648.
3. Zhang, D., et al. 2000. Tak1 is activated in the myocardium after pressure overload and is sufficient to provoke heart failure in transgenic mice. Nat. Med. 6: 556-563.
4. Ninomiya-Tsuji, J., et al. 2003. A resorcylic acid lactone, 5Z-7-oxozeaenol, prevents inflammation by inhibiting the catalytic activity of Tak1 MAPK kinase kinase. J. Biol. Chem. 278: 18485-18490.
5. Martin, D., et al. 2009. CXCL8/IL8 stimulates vascular endothelial growth factor (VEGF) expression and the autocrine activation of VEGFR2 in endothelial cells by activating NFκB through the CBM (Carma3/Bcl10/Malt1) complex. J. Biol. Chem. 284: 6038-6042.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.