SANTA CRUZ BIOTECHNOLOGY, INC.

Tak1 (H-5): sc-166562

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 TGFβ stimulation.

CHROMOSOMAL LOCATION

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

SOURCE

Tak1 (H-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 552-579 at the C-terminus of Tak1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_3 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166562 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Tak1 (H-5) is recommended for detection of Tak1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (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 (H-5) is also recommended for detection of Tak1 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for Tak1 siRNA (h): sc-36606, Tak1 siRNA (m): sc-36607, Tak1 siRNA (r): sc-155991, Tak1 shRNA Plasmid (h): sc-36606-SH, Tak1 shRNA Plasmid (m): sc-36607-SH, Tak1 shRNA Plasmid (r): sc-155991-SH, Tak1 shRNA (h) Lentiviral Particles: sc-36606-V, Tak1 shRNA (m) Lentiviral Particles: sc-36607-V and Tak1 shRNA (r) Lentiviral Particles: sc-155991-V.

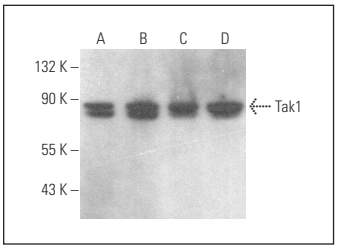
Molecular Weight of Tak1: 70 kDa.

Positive Controls: L6 whole cell lysate: sc-364196, HeLa whole cell lysate: sc-2200 or A-431 whole cell lysate: sc-2201.

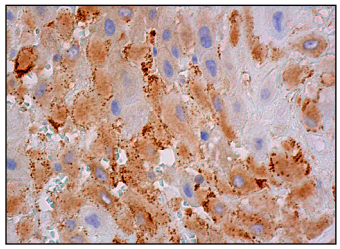
STORAGE

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

DATA



Tak1 (H-5): sc-166562. Western blot analysis of Tak1 expression in NIH/3T3 (**A**), L6 (**B**), HeLa (**C**) and A-431 (**D**) whole cell lysates.



Tak1 (H-5): sc-166562. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of decidual cells.

SELECT PRODUCT CITATIONS

1. Lakshmanan, A.P., et al. 2011. Curcumin attenuates hyperglycaemia-mediated AMPK activation and oxidative stress in cerebrum of streptozotocin-induced diabetic rat. Free Radic. Res. 45: 788-795.
2. Zhang, H., et al. 2015. γ-glutamyl cysteine and γ-glutamyl valine inhibit TNF-α signaling in intestinal epithelial cells and reduce inflammation in a mouse model of colitis via allosteric activation of the calcium-sensing receptor. Biochim. Biophys. Acta 1852: 792-804.
3. Ren, S., et al. 2016. Hepatitis B virus stimulated fibronectin facilitates viral maintenance and replication through two distinct mechanisms. PLoS ONE 11: e0152721.
4. Lu, L., et al. 2017. Central administration of 5Z-7-oxozeaenol protects experimental autoimmune encephalomyelitis mice by inhibiting microglia activation. Front. Pharmacol. 8: 789.
5. Xu, D., et al. 2018. TBK1 suppresses RIPK1-driven apoptosis and inflammation during development and in aging. Cell 174: 1477-1491.e19.
6. Cibi, D.M., et al. 2019. Neural crest-specific deletion of Rbfox2 in mice leads to craniofacial abnormalities including cleft palate. Elife 8: e45418.
7. Osuka, K., et al. 2020. Expression of high mobility group B1 and Toll-like receptor-nuclear factor κB signaling pathway in chronic subdural hematomas. PLoS ONE 15: e0233643.
8. Wang, H., et al. 2021. Microglial TLR4-induced TAK1 phosphorylation and NLRP3 activation mediates neuroinflammation and contributes to chronic morphine-induced antinociceptive tolerance. Pharmacol. Res. 165: 105482.

RESEARCH USE

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

CONJUGATES

See **Tak1 (C-9): sc-7967** for Tak1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.