

# Tak1 (h): 293 Lysate: sc-113194

## 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 (TGF $\beta$ -activated kinase) has been shown to participate in the activation of the MAP kinase family in response to TGF $\beta$  stimulation.

## REFERENCES

- Huleihel, M., Goldsborough, M., Cleveland, J., Gunnell, M., Bonner, T. and Rapp, U.R. 1986. Characterization of murine A-Raf, a new oncogene related to the v-Raf oncogene. *Mol. Cell. Biol.* 6: 2655-2662.
- Ray, L.B. and Sturgill, T.W. 1988. Insulin-stimulated microtubule-associated protein kinase is phosphorylated on tyrosine and threonine *in vivo*. *Proc. Natl. Acad. Sci. USA* 85: 3753-3757.
- Morrison, D.K., Kaplan, D.R., Rapp, U. and Roberts, T.M. 1988. Signal transduction from membrane to cytoplasm: growth factors and membrane-bound oncogene products increase Raf-1 phosphorylation and associated protein kinase activity. *Proc. Natl. Acad. Sci. USA* 85: 8855-8859.
- Pelech, S.L., Sanghera, J.S. and Daya-Makin, M. 1990. Protein kinase cascades in meiotic and mitotic cell cycle control. *Biochem. Cell Biol.* 68: 1297-1330.
- Downward, J. 1995. Ksr: a novel player in the Ras pathway. *Cell* 83: 831-834.
- Therrien, M., Chang, H.C., Solomon, N.M., Karim, F.D., Wassarman, D.A. and Rubin, G.M. 1995. Ksr, a novel protein kinase required for Ras signal transduction. *Cell* 83: 879-888.
- Sundaram, M. and Han, M. 1995. The *C. elegans* Ksr-1 gene encodes a novel Raf-related kinase involved in Ras-mediated signal transduction. *Cell* 83: 889-901.
- Yamaguchi, K., Shirakabe, K., Shibuya, H., Irie, K., Oishi, I., Ueno, N., Taniguchi, T., Nishida, E. and Matsumoto, K. 1995. Identification of a member of the MAPKKK family as a potential mediator of TGF $\beta$  signal transduction. *Science* 270: 2008-2011.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## CHROMOSOMAL LOCATION

Genetic locus: MAP3K7 (human) mapping to 6q15.

## PRODUCT

Tak1 (h): 293 Lysate represents a lysate of human Tak1 transfected 293 cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## APPLICATIONS

Tak1 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive Tak1 antibodies. Recommended use: 10-20  $\mu$ l per lane.

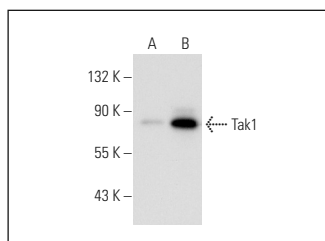
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

Tak1 (C-9): sc-7967 is recommended as a positive control antibody for Western Blot analysis of enhanced human Tak1 expression in Tak1 transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:  
 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

## DATA



Tak1 (C-9): sc-7967. Western blot analysis of Tak1 expression in non-transfected: sc-110760 (A) and human Tak1 transfected: sc-113194 (B) 293 whole cell lysates.

## RESEARCH USE

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