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# TAB3 shRNA (h) Lentiviral Particles: sc-43548-V

## BACKGROUND

The TAK1 binding proteins, TAB1, TAB2 and TAB3, interact with the MAPKKK TAK1 in response to various stimuli. TAB1 activates TAK1 in TGF $\beta$  mediated signaling. TAB1 also plays a central role in a p38 $\alpha$  activation pathway that is independent of MAPKK. In response to proinflammatory signals, TAB2 complexes with TRAF6 and TAK1, leading to translocation of the complex from the membrane to the cytosol and the subsequent activation of TAK1. When overexpressed, TAB3 activates both NF $\kappa$ B and AP-1 transcription factors. In response to TNF $\alpha$  or IL-1, TAK1 complexes with TAB1 and TAB2 or with TAB1 and TAB3 to yield two distinct complexes.

## REFERENCES

1. Yamaguchi, K., et al. 1995. Identification of a member of the MAPKKK family as a potential mediator of TGF- $\beta$  signal transduction. *Science* 270: 2008-2011.
2. Shibuya, H., et al. 1996. TAB1: an activator of the TAK1 MAPKKK in TGF- $\beta$  signal transduction. *Science* 272: 1179-1182.
3. Ge, B., et al. 2002. MAPKK-independent activation of p38 $\alpha$  mediated by TAB1-dependent autophosphorylation of p38 $\alpha$ . *Science* 295: 1291-1294.
4. Jiang, Z., et al. 2002. Interleukin-1 (IL-1) receptor-associated kinase-dependent IL-1-induced signaling complexes phosphorylate TAK1 and TAB2 at the plasma membrane and activate TAK1 in the cytosol. *Mol. Cell. Biol.* 22: 7158-7167.
5. Jin, G., et al. 2004. Identification of a human NF $\kappa$ B-activating protein, TAB3. *Proc. Natl. Acad. Sci. USA* 101: 2028-2033.

## CHROMOSOMAL LOCATION

Genetic locus: TAB3 (human) mapping to Xp21.2.

## PRODUCT

TAB3 shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200  $\mu$ l frozen stock containing  $1.0 \times 10^6$  infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see TAB3 siRNA (h): sc-43548 and TAB3 shRNA Plasmid (h): sc-43548-SH as alternate gene silencing products.

## STORAGE

Store lentiviral particles at -80 $^{\circ}$  C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4 $^{\circ}$  C for up to one week. Avoid repeated freeze thaw cycles.

## PROTOCOLS

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

## APPLICATIONS

TAB3 shRNA (h) Lentiviral Particles is recommended for the inhibition of TAB3 expression in human cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing  $1.0 \times 10^6$  infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

## GENE EXPRESSION MONITORING

TAB3 (D-9): sc-166538 is recommended as a control antibody for monitoring of TAB3 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker<sup>™</sup> compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TAB3 gene expression knockdown using RT-PCR Primer: TAB3 (h)-PR: sc-43548-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60 $^{\circ}$  C and the extension temperature should be 68-72 $^{\circ}$  C.

## BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

## RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.