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# TICAM-2 shRNA (h) Lentiviral Particles: sc-44747-V

## BACKGROUND

TICAM-1, also known as Toll-interleukin 1 receptor domain (TIR)-containing adaptor molecule, maps at chromosome 19p13.3. It can physically bind the TIR domain of Toll-like receptor 3 (TLR3) and activate the IFN- $\beta$  promoter. TLR proteins are signaling molecules that can recognize pathogen associated molecular patterns and may function as a link between the innate and adaptive immune responses. TICAM-1 mediates dsRNA-TLR3-dependent production of IFN- $\beta$ . This TICAM-1-dependent pathway is important for other TLR-IFN- $\beta$  pathways, which form part of the MyD88-independent cellular immune response. TICAM-2, a cytoplasmic protein, physically bridges TLR4 and TICAM-1 and functionally transmits LPS-TLR4 signaling to TICAM-1, which in turn activates IRF-3. In its structural features, TICAM-2 resembles Mal/TIRAP, an adapter that links TLR2/4 and MyD88.

## REFERENCES

1. Yamamoto, M., et al. 2002. Cutting edge: a novel Toll/IL-1 receptor domain-containing adapter that preferentially activates the IFN- $\beta$  promoter in the Toll-like receptor signaling. *J. Immunol.* 169: 6668-6672.
2. Bin, L.H., et al. 2003. TIRP, a novel Toll/interleukin-1 receptor (TIR) domain-containing adapter protein involved in TIR signaling. *J. Biol. Chem.* 278: 24526-24532.
3. Oshimi, H., et al. 2003. TIR-containing adapter molecule (TICAM)-2, a bridging adapter recruiting to toll-like receptor 4 TICAM-1 that induces interferon- $\beta$ . *J. Biol. Chem.* 278: 49751-49762.
4. Fitzgerald, K.A., et al. 2003. LPS-TLR4 signaling to IRF-3/7 and NF $\kappa$ B involves the toll adapters TRAM and TRIF. *J. Exp. Med.* 198: 1043-1055.

## CHROMOSOMAL LOCATION

Genetic locus: TICAM2 (human) mapping to 5q22.3.

## PRODUCT

TICAM-2 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  $1.0 \times 10^6$  lentiviral transducing particles per milliliter in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see TICAM-2 siRNA (h): sc-44747 and TICAM-2 shRNA Plasmid (h): sc-44747-SH as alternate gene silencing products.

## STORAGE

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

## APPLICATIONS

TICAM-2 shRNA (h) Lentiviral Particles is recommended for the inhibition of TICAM-2 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

TICAM-2 (E-2): sc-376076 is recommended as a control antibody for monitoring of TICAM-2 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™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ 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™ Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TICAM-2 gene expression knockdown using RT-PCR Primer: TICAM-2 (h)-PR: sc-44747-PR (20  $\mu$ l). Annealing temperature for the primers should be  $55-60^\circ\text{C}$  and the extension temperature should be  $68-72^\circ\text{C}$ .

## 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.

## PROTOCOLS

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