SANTA CRUZ BIOTECHNOLOGY, INC.

TRADD siRNA (m): sc-37276

BACKGROUND

In contrast to growth factors which promote cell proliferation, FAS ligand (FAS-L) and the tumor necrosis factors (TNFs) rapidly induce apoptosis. Cellular response to FAS-L and TNF is mediated by structurally related receptors containing a conserved "deatzh domain" and belonging to the TNF receptor superfamily. TRADD, FADD and RIP are FAS/TNF-R1 interacting proteins that contain a death domain homologous region (DDH). TRADD (TNF-R1-associated death domain) and FADD (FAS-associated death domain) associate with the death domains of both FAS and TNF-R1 via their DDH regions. Overexpression of TRADD leads to NFκB activation and apoptosis in the absence of TNF. Overexpression of FADD causes apoptosis, which can be blocked by the cow pox protein CrmA, suggesting that FADD lies upstream of ICE and possibly other serine proteases. The receptor interacting protein, RIP, associates with FAS exclusively via its DDH and this association is abrogated in lpr mutants. Unlike TRADD and FADD, RIP contains a putative amino terminal kinase domain.

REFERENCES

1. Smith, C.A., et al. 1994. The TNF receptor superfamily of cellular and viral proteins: activation, costimulation and death. Cell 76: 959-962.
2. Nagata, S., et al. 1995. The Fas death factor. Science 267: 1449-1456.
3. Sato, T., et al. 1995. FAP-1: a protein tyrosine phosphatase that associates with FAS. Science 268: 411-414.
4. Hsu, H., et al. 1995. The TNF receptor 1-associated protein TRADD signals cell death and NFκB activation. Cell 81: 495-504.
5. Chinnaiyan, A.M., et al. 1995. FADD, a novel death domain-containing protein, interacts with the death domain of FAS and initiates apoptosis. Cell 81: 505-512.
6. Stanger, B.Z., et al. 1995. RIP: a novel protein containing a death domain that interacts with FAS/APO-1 (CD95) in yeast and causes cell death. Cell 81: 513-523.
7. Schneider-Brachert, W., et al. 2006. Inhibition of TNF receptor 1 internalization by adenovirus 14.7K as a novel immune escape mechanism. J. Clin. Invest. 116: 2901-2913.
8. Hunter, I. et al. 2006. Spatial compartmentalization of tumor necrosis factor (TNF) receptor 1-dependent signaling pathways in human airway smooth muscle cells. Lipid rafts are essential for TNF-α-mediated activation of RhoA but dispensable for the activation of the NFκB and MAPK pathways. J. Biol. Chem. 281: 34705-34715.
9. Zhu, L., et al. 2007. Decreased expressions of the TNF-α signaling adapters in peripheral blood mononuclear cells (PBMCs) are correlated with disease activity in patients with systemic lupus erythematosus. Clin. Rheumatol. 26: 1481-1489.

CHROMOSOMAL LOCATION

Genetic locus: Tradd (mouse) mapping to 8 D3.

RESEARCH USE

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

PRODUCT

TRADD siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TRADD shRNA Plasmid (m): sc-37276-SH and TRADD shRNA (m) Lentiviral Particles: sc-37276-V as alternate gene silencing products.

For independent verification of TRADD (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-37276A, sc-37276B and sc-37276C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

TRADD siRNA (m) is recommended for the inhibition of TRADD expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TRADD gene expression knockdown using RT-PCR Primer: TRADD (m)-PR: sc-37276-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kim, J.Y., et al. 2010. HBx-induced hepatic steatosis and apoptosis are regulated by TNFR1- and NFκB-dependent pathways. J. Mol. Biol. 397: 917-931.

PROTOCOLS

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