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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

Fap-1 siRNA (h): sc-43560

BACKGROUND

In contrast to the 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 "death domain" belonging to the TNF receptor superfamily. Putative downstream receptors of FAS include TRADD, FADD and RIP. A novel protein tyrosine phosphatase, Fap-1 (for FAS-associated phosphatase) (originally designated PTP-BAS), has been shown to associate with the carboxy terminus fifteen amino acids of FAS. Three isoforms of the protein result from alternative RNA splicings, the longest of which encodes a protein 2485 amino acids in length. Although lacking a transmembrane region, Fap-1 does contain a membrane-binding domain, similar to that found in cytoskeleton-associated proteins such as ezrin. Fap-1 does not seem to associate with CD40 or death domain proteins such as TNF-RI and TNF-RII.

REFERENCES

1. Maekawa, K., et al. 1994. Molecular cloning of a novel protein tyrosine phosphatase containing a membrane-binding domain and GLGF repeats. *FEBS Lett.* 337: 200-206.
2. Moller, N.P., et al. 1994. Src kinase associates with a member of a distinct subfamily of protein-tyrosine phosphatases containing an ezrin-like domain. *Proc. Natl. Acad. Sci. USA* 91: 7477-7481.
3. Cleveland, J.L., et al. 1995. Contenders in FasL/TNF death signaling. *Cell* 81: 479-482.
4. Hsu, H., et al. 1995. The TNF receptor 1-associated protein TRADD signals cell death and NF κ B 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.

CHROMOSOMAL LOCATION

Genetic locus: PTPN13 (human) mapping to 4q21.3.

PRODUCT

Fap-1 siRNA (h) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Fap-1 shRNA Plasmid (h): sc-43560-SH and Fap-1 shRNA (h) Lentiviral Particles: sc-43560-V as alternate gene silencing products.

For independent verification of Fap-1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-43560A, sc-43560B and sc-43560C.

RESEARCH USE

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

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Fap-1 siRNA (h) is recommended for the inhibition of Fap-1 expression in human 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 μ M in 66 μ l. 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 Fap-1 gene expression knockdown using RT-PCR Primer: Fap-1 (h)-PR: sc-43560-PR (20 μ l, 398 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhang, W., et al. 2007. Regulation of TRP channel TRPM2 by the tyrosine phosphatase PTPL1. *Am. J. Physiol. Cell Physiol.* 292: C1746-C1758.

PROTOCOLS

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