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# TOPAZ1 siRNA (m): sc-148942

## BACKGROUND

TOPAZ1 (testis- and ovary-specific PAZ domain-containing protein 1), also known as C3orf77, is a 1,692 amino acid cytoplasmic protein that contains one C3H1-type zinc finger and an N-terminal PAZ domain. TOPAZ1 is abundantly expressed in the gonads during germ cell meiosis, as well as in adult testis, and may play an important role in germ cell development. The gene encoding TOPAZ1 maps to human chromosome 3p21.31. Chromosome 3 is made up of about 214 million bases encoding over 1,100 genes. Notably, there is a chemokine receptor gene cluster and a variety of human cancer related loci on chromosome 3. Key tumor suppressing genes on chromosome 3 encode apoptosis mediator RASSF1, cell migration regulator HYAL1 and angiogenesis suppressor SEMA3B. Marfan syndrome, porphyria, von Hippel-Lindau syndrome, osteogenesis imperfecta and Charcot-Marie-Tooth disease are a few of the numerous genetic diseases associated with chromosome 3.

## REFERENCES

1. De Jonghe, P., et al. 1997. Mutilating neuropathic ulcerations in a chromosome 3q13-q22 linked Charcot-Marie-Tooth disease type 2B family. *J. Neurol. Neurosurg. Psychiatr.* 62: 570-573.
2. Maho, A., et al. 1999. Mapping of the CCXCR1, CX3CR1, CCBP2 and CCR9 genes to the CCR cluster within the 3p21.3 region of the human genome. *Cytogenet. Cell Genet.* 87: 265-268.
3. Robinson, P.N. and Godfrey, M. 2000. The molecular genetics of Marfan syndrome and related microfibrilopathies. *J. Med. Genet.* 37: 9-25.
4. Braga, E.A., et al. 2003. New tumor suppressor genes in hot spots of human chromosome 3: new methods of identification. *Mol. Biol.* 37: 194-211.
5. Tsend-Ayush, E., et al. 2004. Plasticity of human chromosome 3 during primate evolution. *Genomics* 83: 193-202.
6. Pfeifer, G.P. and Dammann, R. 2005. Methylation of the tumor suppressor gene RASSF1A in human tumors. *Biochemistry* 70: 576-583.
7. Nair, P.N., et al. 2007. High-resolution analysis of 3p deletion in neuroblastoma and differential methylation of the SEMA3B tumor suppressor gene. *Cancer Genet. Cytogenet.* 174: 100-110.
8. Baillet, A., et al. 2011. TOPAZ1, a novel germ cell-specific expressed gene conserved during evolution across vertebrates. *PLoS ONE* 6: e26950.

## CHROMOSOMAL LOCATION

Genetic locus: Gm9524 (mouse) mapping to 9 F4.

## PRODUCT

TOPAZ1 siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TOPAZ1 shRNA Plasmid (m): sc-148942-SH and TOPAZ1 shRNA (m) Lentiviral Particles: sc-148942-V as alternate gene silencing products.

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

## APPLICATIONS

TOPAZ1 siRNA (m) is recommended for the inhibition of TOPAZ1 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  $\mu$ M in 66  $\mu$ 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 TOPAZ1 gene expression knockdown using RT-PCR Primer: TOPAZ1 (m)-PR: sc-148942-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

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