

SPOPL siRNA (h): sc-94798

BACKGROUND

SPOPL (speckle-type POZ protein-like), also known as HIB homolog 2 or Roadkill homolog 2, is a 392 amino acid nuclear protein that may be involved in ubiquitination and proteasomal degradation processes. Belonging to the Tdpoz family, SPOPL contains one BTB (POZ) domain and one MATH domain. SPOPL forms a complex with a member of the cullin family. The gene that encodes SPOPL includes 71,768 bases, four transcripts and maps to the human chromosome 2q22.1. Chromosomal arm 2q22-23 has been identified as one of fifteen hot spots thought to be involved in head and neck squamous cell carcinoma (HNSCC). Chromosome 2, which consists of 237 million bases, encodes over 1,400 genes and makes up approximately 8% of the human genome. A number of genetic diseases are linked to genes on chromosome 2 including Harlequin ichthyosis, sitosterolemia and Alström syndrome. SPOP (speckle-type POZ protein), also known as TEF2, HIB homolog 1 or Roadkill homolog 1, is a member of the Tdpoz family containing one N-terminal MATH (Meprin and TRAF homology) domain and one C-terminal BTB/POZ domain. SPOP and SPOPL share significant amino acid sequence homology.

REFERENCES

1. Ransom, D.T., Barnett, T.C., Bot, J., de Boer, B., Metcalf, C., Davidson, J.A. and Turbett, G.R. 1998. Loss of heterozygosity on chromosome 2q: possibly a poor prognostic factor in head and neck cancer. *Head Neck* 20: 404-410.
2. Beder, L.B., Gunduz, M., Ouchida, M., Fukushima, K., Gunduz, E., Ito, S., Sakai, A., Nagai, N., Nishizaki, K. and Shimizu, K. 2003. Genome-wide analyses on loss of heterozygosity in head and neck squamous cell carcinomas. *Lab. Invest.* 83: 99-105.
3. Huang, C.J., Chen, C.Y., Chen, H.H., Tsai, S.F. and Choo, K.B. 2004. TDPOZ, a family of bipartite animal and plant proteins that contain the TRAF (TD) and POZ/BTB domains. *Gene* 324: 117-127.
4. Kelsell, D.P., Norgett, E.E., Unsworth, H., Teh, M.T., Cullup, T., Mein, C.A., Dopping-Hepenstal, P.J., Dale, B.A., Tadini, G., Fleckman, P., Stephens, K.G., Sybert, V.P., Mallory, S.B., North, B.V., Witt, D.R., Sprecher, E., et al. 2005. Mutations in ABCA12 underlie the severe congenital skin disease harlequin ichthyosis. *Am. J. Hum. Genet.* 76: 794-803.
5. Zhang, Q., Zhang, L., Wang, B., Ou, C.Y., Chien, C.T. and Jiang, J. 2006. A hedgehog-induced BTB protein modulates hedgehog signaling by degrading Ci/Gli transcription factor. *Dev. Cell* 10: 719-729.
6. Kent, D., Bush, E.W. and Hooper, J.E. 2006. Roadkill attenuates Hedgehog responses through degradation of *Cubitus interruptus*. *Development* 133: 2001-2010.
7. Choo, K.B., Chuang, T.J., Lin, W.Y., Chang, C.M., Tsai, Y.H. and Huang, C.J. 2010. Evolutionary expansion of SPOP and associated TD/POZ gene family: impact of evolutionary route on gene expression pattern. *Gene* 460: 39-47.
8. Li, C., Ao, J., Fu, J., Lee, D.F., Xu, J., Lonard, D. and O'Malley, B.W. 2011. Tumor-suppressor role for the SPOP ubiquitin ligase in signal-dependent proteolysis of the oncogenic co-activator SRC-3/AIB1. *Oncogene* 30: 4350-4364.

CHROMOSOMAL LOCATION

Genetic locus: SPOPL (human) mapping to 2q22.1.

PRODUCT

SPOPL 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 SPOPL shRNA Plasmid (h): sc-94798-SH and SPOPL shRNA (h) Lentiviral Particles: sc-94798-V as alternate gene silencing products.

For independent verification of SPOPL (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-94798A, sc-94798B and sc-94798C.

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

SPOPL siRNA (h) is recommended for the inhibition of SPOPL 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 SPOPL gene expression knockdown using RT-PCR Primer: SPOPL (h)-PR: sc-94798-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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