SANTA CRUZ BIOTECHNOLOGY, INC.

Popeye 3 siRNA (h): sc-95415

BACKGROUND

Three Popeye domain-containing family-members exist in vertebrates, BVES, Popeye 2 and Popeye 3, that regulate cell-cell adhesion and cell migration during development. Popeye expression is modified in end-stage heart failure, suggesting regulatory and functional differences among the three family members. Popeye 3, also known as POPDC3 (popeye domain containing 3), is a 291 amino acid multi-pass membrane protein that contains three putative N-terminal transmembrane helices. Highly homologous to its vertebrate orthologs, Popeye 3 is expressed predominantly in skeletal muscle and heart. Epigenetic inactivation of Popeye 3 occurs frequently in gastric tumors and may promote gastric cancer cell migration and invasion. Popeye 3 also may play an important role in heart development. Popeye 3 is encoded by a gene that maps to human chromosome 6q21, which is associated with age at menarche, adult height and body fat.

REFERENCES

1. Andree, B., Hillemann, T., Kessler-Icekson, G., Schmitt-John, T., Jockusch, H., Arnold, H.H. and Brand, T. 2000. Isolation and characterization of the novel popeye gene family expressed in skeletal muscle and heart. Dev. Biol. 223: 371-382.
2. Breher, S.S., Mavridou, E., Brenneis, C., Froese, A., Arnold, H.H. and Brand, T. 2004. Popeye domain containing gene 2 (Popdc2) is a myocyte-specific differentiation marker during chick heart development. Dev. Dyn. 229: 695-702.
3. Brand, T. 2005. The Popeye domain-containing gene family. Cell Biochem. Biophys. 43: 95-103.
4. Parnes, D., Jacoby, V., Sharabi, A., Schlesinger, H., Brand, T. and Kessler-Icekson, G. 2007. The Popdc gene family in the rat: molecular cloning, characterization and expression analysis in the heart and cultured cardiomyocytes. Biochim. Biophys. Acta 1769: 586-592.
5. Sulem, P., Gudbjartsson, D.F., Rafnar, T., Holm, H., Olafsdottir, E.J., Olafsdottir, G.H., Jonsson, T., Alexandersen, P., Feenstra, B., Boyd, H.A., Aben, K.K., Verbeek, A.L., Roeleveld, N., Jonasdottir, A., et al. 2009. Genome-wide association study identifies sequence variants on 6q21 associated with age at menarche. Nat. Genet. 41: 734-738.
6. Kim, M., Jang, H.R., Haam, K., Kang, T.W., Kim, J.H., Kim, S.Y., Noh, S.M., Song, K.S., Cho, J.S., Jeong, H.Y., Kim, J.C., Yoo, H.S. and Kim, Y.S. 2010. Frequent silencing of popeye domain-containing genes, BVES and POPDC3, is associated with promoter hypermethylation in gastric cancer. Carcinogenesis 31: 1685-1693.
7. Bernstein, P., Sticht, C., Jacobi, A., Liebers, C., Manthey, S. and Stiehler, M. 2010. Expression pattern differences between osteoarthritic chondrocytes and mesenchymal stem cells during chondrogenic differentiation. Osteoarthr. Cartil. 18: 1596-1607.
8. Gingold-Belfer, R., Bergman, M., Alcalay, Y., Schlesinger, H., Aravot, D., Berman, M., Salman, H., Brand, T. and Kessler-Icekson, G. 2011. Popeye domain-containing 1 is down-regulated in failing human hearts. Int. J. Mol. Med. 27: 25-31.

CHROMOSOMAL LOCATION

Genetic locus: POPDC3 (human) mapping to 6q21.

PRODUCT

Popeye 3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Popeye 3 shRNA Plasmid (h): sc-95415-SH and Popeye 3 shRNA (h) Lentiviral Particles: sc-95415-V as alternate gene silencing products.

For independent verification of Popeye 3 (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-95415A, sc-95415B and sc-95415C.

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

Popeye 3 siRNA (h) is recommended for the inhibition of Popeye 3 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 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 Popeye 3 gene expression knockdown using RT-PCR Primer: Popeye 3 (h)-PR: sc-95415-PR (20 µl). 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.