SANTA CRUZ BIOTECHNOLOGY, INC.

ABHD3 siRNA (h): sc-72417

BACKGROUND

The α/β hydrolase superfamily comprise diverse members that are involved in important biochemical processes and related to various diseases. They have unrelated sequences, various substrates, and different kinds of catalytic activities, yet they share the same canonical α/β hydrolase fold, which consists of an eight stranded parallel α/β structure. They are also characterized by a catalytic triad composed of a histidine, an acid and a nucleophile. Members of this superfamily are often drug targets for treating diseases, such as diabetes, Alzheimer's disease, obesity and blood clotting disorders. The α/β hydrolase domain containing (ABHD) gene subfamily is comprised of 15 mostly uncharacterized members, most of which utilize a serine nucleophile to form the G-X-S-X-G nucleophile elbow. ABHD1 plays a role in metabolizing smoking xenobiotics. ABHD2 participates in the development of atherosclerosis. ABHD3 is a 409 amino acid single-pass type II membrane protein. ABHD4 is involved in an alternative synthesis pathway of NAE (N-acyl ethanolamine). Mutations in ABHD5 contribute to Chanarin-Dorfman syndrome. ABDH6 may play a role in nervous system metabolism and signaling.

REFERENCES

1. Ollis, D.L., et al. 1992. The α/β hydrolase fold. Protein Eng. 5: 197-211.
2. Holmquist, M. 2000. α/β-hydrolase fold enzymes: structures, functions and mechanisms. Curr. Protein Pept. Sci. 1: 209-235.
3. Lefèvre, C., et al. 2001. Mutations in CGI-58, the gene encoding a new protein of the esterase/lipase/thioesterase subfamily, in Chanarin-Dorfman syndrome. Am. J. Hum. Genet. 69: 1002-1012.
4. Edgar, A.J. and Polak, J.M. 2002. Cloning and tissue distribution of three murine α/β hydrolase fold protein cDNAs. Biochem. Biophys. Res. Commun. 292: 617-625.
5. Simon, G.M. and Cravatt, B.F. 2006. Endocannabinoid biosynthesis proceeding through glycerophospho-N-acyl ethanolamine and a role for α/β-hydrolase 4 in this pathway. J. Biol. Chem. 281: 26465-26472.

CHROMOSOMAL LOCATION

Genetic locus: ABHD3 (human) mapping to 18q11.2.

PRODUCT

ABHD3 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 ABHD3 shRNA Plasmid (h): sc-72417-SH and ABHD3 shRNA (h) Lentiviral Particles: sc-72417-V as alternate gene silencing products.

For independent verification of ABHD3 (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-72417A, sc-72417B and sc-72417C.

PROTOCOLS

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

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

ABHD3 siRNA (h) is recommended for the inhibition of ABHD3 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 ABHD3 gene expression knockdown using RT-PCR Primer: ABHD3 (h)-PR: sc-72417-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.