

DAGL α siRNA (h): sc-96964

BACKGROUND

Members of the AB hydrolase superfamily have diverse catalytic functions and play a crucial role in the metabolism of lipids. DAGL α (diacylglycerol lipase α), also known as NSDDR or C11orf11, is a 1,042 amino acid multi-pass membrane protein that belongs to the AB hydrolase superfamily. Highly expressed in brain and pancreas, DAGL α uses calcium as a cofactor to catalyze the hydrolysis of diacylglycerol (DAG) to 2-arachidonoyl-glycerol (2-AG), a reaction that is required for axonal growth and for retrograde synaptic signaling at mature synapses. DAGL α functions as at optimal pH of 7 and its activity is inhibited by p-hydroxy-mercuri-benzoate and HgCl₂. The gene encoding DAGL α maps to human chromosome 11, which houses over 1,400 genes and comprises nearly 4% of the human genome.

REFERENCES

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4. Ligresti, A., et al. 2005. Endocannabinoid metabolic pathways and enzymes. Curr. Drug Targets CNS Neurol. Disord. 4: 615-623.
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CHROMOSOMAL LOCATION

Genetic locus: DAGLA (human) mapping to 11q12.2.

PRODUCT

DAGL α 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 DAGL α shRNA Plasmid (h): sc-96964-SH and DAGL α shRNA (h) Lentiviral Particles: sc-96964-V as alternate gene silencing products.

For independent verification of DAGL α (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-96964A, sc-96964B and sc-96964C.

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

DAGL α siRNA (h) is recommended for the inhibition of DAGL α 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.

GENE EXPRESSION MONITORING

DAGL α (E-6): sc-390409 is recommended as a control antibody for monitoring of DAGL α gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DAGL α gene expression knockdown using RT-PCR Primer: DAGL α (h)-PR: sc-96964-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Okubo, Y., et al. 2018. Diacylglycerol lipase α promotes tumorigenesis in oral cancer by cell-cycle progression. Exp. Cell Res. 367: 112-118.

RESEARCH USE

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