

# Aspartoacylase-3 siRNA (h): sc-96717

## BACKGROUND

Aspartoacylase-3 (ACY3), also known as aminoacylase-3, Aspartoacylase-2, acylase III or HCBP1 (Hepatitis C virus core-binding protein 1), is a 319 amino acid protein that deacetylates mercapturic acids in the proximal tubules of the kidney, where it is predominantly expressed. A member of the aspA/astE family and Aspartoacylase subfamily, Aspartoacylase-3 localizes to the cytoplasm of S2 and S3 proximal tubules and to the apical domain of S1 proximal tubules. Aspartoacylase-3 is also expressed at low levels in stomach, testis, heart, brain, lung and liver, and may function as an HCV (Hepatitis C virus) core binding protein. Aspartoacylase-3 is encoded by a gene that maps to human chromosome 11, which houses over 1,400 genes and comprises nearly 4% of the human genome. Jervell and Lange-Nielsen syndrome, Jacobsen syndrome, Niemann-Pick disease, hereditary angioedema and Smith-Lemli-Opitz syndrome are associated with defects in genes that maps to chromosome 11.

## REFERENCES

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2. Jira, P.E., Waterham, H.R., Wanders, R.J., Smeitink, J.A., Sengers, R.C. and Wevers, R.A. 2003. Smith-Lemli-Opitz syndrome and the DHCR7 gene. *Ann. Hum. Genet.* 67: 269-280.
3. Pushkin, A., Carpenito, G., Abuladze, N., Newman, D., Tsuprun, V., Ryazantsev, S., Motemoturu, S., Sassani, P., Solovieva, N., Dukkupati, R. and Kurtz, I. 2004. Structural characterization, tissue distribution, and functional expression of murine aminoacylase III. *Am. J. Physiol., Cell Physiol.* 286: C848-C856.
4. Schuchman, E.H. 2007. The pathogenesis and treatment of acid sphingomyelinase-deficient Niemann-Pick disease. *J. Inher. Metab. Dis.* 30: 654-663.

## CHROMOSOMAL LOCATION

Genetic locus: ACY3 (human) mapping to 11q13.2.

## PRODUCT

Aspartoacylase-3 siRNA (h) is a pool of 2 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Aspartoacylase-3 shRNA Plasmid (h): sc-96717-SH and Aspartoacylase-3 shRNA (h) Lentiviral Particles: sc-96717-V as alternate gene silencing products.

For independent verification of Aspartoacylase-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-96717A and sc-96717B.

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ 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

Aspartoacylase-3 siRNA (h) is recommended for the inhibition of Aspartoacylase-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  $\mu$ 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.

## GENE EXPRESSION MONITORING

Aspartoacylase-3 (A-5): sc-393862 is recommended as a control antibody for monitoring of Aspartoacylase-3 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 Aspartoacylase-3 gene expression knockdown using RT-PCR Primer: Aspartoacylase-3 (h)-PR: sc-96717-PR (20  $\mu$ 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.