



NAT-1 siRNA (m): sc-61155

BACKGROUND

Arylamine N-acetyltransferases (NAT-1 and NAT-2) catalyze N- or O-acetylation of heterocyclic and arylamine substrates in the detoxification of a wide array of drugs. Certain alleles causing high levels of N-acetyltransferase activity have been associated with colon and urinary bladder cancers, as NAT's also bioactivate several known carcinogens. Both NAT-1 and NAT-2 are cytoplasmic proteins and play an active role in the detoxification of many arylamine and hydrazine drugs. N-acetylation polymorphism is determined by the level of NAT activity in liver tissues, and has been linked to the action and toxicity of drugs that contain amines. Human NAT-1 is the functional homolog of rodent NAT-2, while human NAT-2 is the functional homolog of rodent NAT-1.

REFERENCES

1. Lanckriet, C., et al. 1992. Morbidity and mortality in the pediatric service of Banqui (Central African Republic) during the year 1990. Implications for public health. *Ann. Pediatr.* 39: 125-130.
2. Kiss, I., et al. 2004. Polymorphisms of glutathione-S-transferase and arylamine N-acetyltransferase enzymes and susceptibility to colorectal cancer. *Anticancer Res.* 24: 3965-3970.
3. Li, Y.C., et al. 2005. N-acetyltransferase is involved in baicalein-induced N-acetylation of 2-aminofluorene and DNA-2-aminofluorene adduct formation in human leukemia HL-60 cells. *In Vivo* 19: 399-405.
4. Deguchi, M., et al. 2005. Lack of association between endometriosis and N-acetyltransferase 1 (NAT-1) and 2 (NAT-2) polymorphisms in a Japanese population. *J. Soc. Gynecol. Investig.* 12: 208-213.
5. Zhang, X.F., et al. 2005. Are polymorphisms of N-acetyltransferase genes susceptible to primary liver cancer in Luoyang, China? *World J. Gastroenterol.* 11: 1457-1462.
6. Broberg, K., et al. 2005. Constitutional short telomeres are strong genetic susceptibility markers for bladder cancer. *Carcinogenesis* 26: 1263-1271.

CHROMOSOMAL LOCATION

Genetic locus: Nat1 (mouse) mapping to 8 B3.3.

PRODUCT

NAT-1 siRNA (m) 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 NAT-1 shRNA Plasmid (m): sc-61155-SH and NAT-1 shRNA (m) Lentiviral Particles: sc-61155-V as alternate gene silencing products.

For independent verification of NAT-1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61155A, sc-61155B and sc-61155C.

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 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

NAT-1 siRNA (m) is recommended for the inhibition of NAT-1 expression in mouse 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

NAT-1/2 (G-5): sc-137204 is recommended as a control antibody for monitoring of NAT-1 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 NAT-1 gene expression knockdown using RT-PCR Primer: NAT-1 (m)-PR: sc-61155-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.