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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

CYP1B1 siRNA (m): sc-44547

BACKGROUND

Cytochrome P450 1B1 (CYP1B1) is a key enzyme involved in the production of potentially carcinogenic estrogen metabolites and the activation of environmental carcinogens and is the predominant member of the CYP1 family expressed in normal breast tissue and breast cancer. Estrogen has been proposed to trigger breast cancer development via an initiating mechanism involving its metabolite, catechol estrogen (CE). CYP1B1 catalyzes the conversion of 17- β -estradiol to the catechol estrogen metabolites 2-OH-E2 and 4-OH-E2, which have both been postulated to be involved in mammary carcinogenesis. Genetic polymorphisms in CYP1B1 may play an important role in human prostate carcinogenesis as well. Polymorphism of the CYP1B1 gene at codon 432 (Val \rightarrow Leu) is associated with a change in catalytic function.

REFERENCES

1. Bailey, L.R., et al. 1998. Association of Cytochrome P450 1B1 (CYP1B1) polymorphism with steroid receptor status in breast cancer. *Cancer Res.* 58: 5038-5041.
2. Tang, Y.M., et al. 2000. Human CYP1B1 Leu432Val gene polymorphism: ethnic distribution in African-Americans, Caucasians and Chinese; oestrogen hydroxylase activity; and distribution in prostate cancer cases and controls. *Pharmacogenetics* 10: 761-766.
3. De Vivo, I., et al. 2002. Association of CYP1B1 polymorphisms and breast cancer risk. *Cancer Epidemiol. Biomarkers Prev.* 11: 489-492.
4. Kocabas, N.A., et al. 2002. Cytochrome P450 CYP1B1 and catechol-O-methyltransferase (COMT) genetic polymorphisms and breast cancer susceptibility in a Turkish population. *Arch. Toxicol.* 11: 643-649.
5. Saintot, M., et al. 2004. Interaction between genetic polymorphism of Cytochrome P450 1B1 and environmental pollutants in breast cancer risk. *Eur. J. Cancer Prev.* 13: 83-86.

CHROMOSOMAL LOCATION

Genetic locus: *Cyp1b1* (mouse) mapping to 17 E3.

PRODUCT

CYP1B1 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 CYP1B1 shRNA Plasmid (m): sc-44547-SH and CYP1B1 shRNA (m) Lentiviral Particles: sc-44547-V as alternate gene silencing products.

For independent verification of CYP1B1 (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-44547A, sc-44547B and sc-44547C.

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

CYP1B1 siRNA (m) is recommended for the inhibition of CYP1B1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CYP1B1 gene expression knockdown using RT-PCR Primer: CYP1B1 (m)-PR: sc-44547-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.