SANTA CRUZ BIOTECHNOLOGY, INC.

CYP2B6 siRNA (h): sc-62181

BACKGROUND

CYP2B6 (cytochrome P450 2B6) is a 491 amino acid protein encoded by the human gene CYP2B6. CYP genes are highly polymorphic and can affect individual drug response and adverse reactions to a great extent. The CYP2B6 gene product, along with a few other CYP gene products, are highly susceptible to variation due to several copy number variants (CNV), missense mutations, insertions and deletions, and gene expression mutations. There are 57 active CYP genes and 58 pseudogenes known in the human genome. In liver microsomes, CYP2B6 is involved in an NADPH-dependent electron transport pathway. It acts to oxidize a variety of structurally unrelated compounds, including steroids, fatty acids and xenobiotics. CYP2B6 is expressed in liver, lung and heart and can be induced by phenobarbital.

REFERENCES

1. Hirose, S., et al. 2005. Transgenic rice containing human CYP2B6 detoxifies various classes of herbicides. J. Agric. Food Chem. 53: 3461-3467.
2. Rotger, M., et al. 2005. Influence of CYP2B6 polymorphism on plasma and intracellular concentrations and toxicity of efavirenz and nevirapine in HIV-infected patients. Pharmacogenet. Genomics 15: 1-5.
3. Aleksa, K., et al. 2005. Cytochrome P450 3A and 2B6 in the developing kidney: implications for ifosfamide nephrotoxicity. Pediatr. Nephrol. 20: 872-885.
4. Haberl, M., et al. 2005. Three haplotypes associated with CYP2A6 phenotypes in Caucasians. Pharmacogenet. Genomics 15: 609-624.
5. Kimura, M., et al. 2005. Cyp2a6 is a principal enzyme involved in hydroxylation of 1,7-dimethylxanthine, a main caffeine metabolite, in humans. Drug Metab. Dispos. 33: 1361-1366.
6. Tong, K., et al. 2006. The implications of a high allelic frequency of CYP2B6 G516T in ethnic Chinese persons. Clin. Infect. Dis. 43: 541-542.
7. Lu, H., et al. 2006. Stereoselectivity in metabolism of ifosfamide by CYP3A4 and CYP2B6. Xenobiotica 36: 367-385.

CHROMOSOMAL LOCATION

Genetic locus: CYP2B6 (human) mapping to 19q13.2.

PRODUCT

CYP2B6 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 CYP2B6 shRNA Plasmid (h): sc-62181-SH and CYP2B6 shRNA (h) Lentiviral Particles: sc-62181-V as alternate gene silencing products.

For independent verification of CYP2B6 (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-62181A, sc-62181B and sc-62181C.

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

CYP2B6 siRNA (h) is recommended for the inhibition of CYP2B6 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 CYP2B6 gene expression knockdown using RT-PCR Primer: CYP2B6 (h)-PR: sc-62181-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.