



## NP220 siRNA (h): sc-94523

### BACKGROUND

Zinc-finger proteins contain DNA-binding domains and have a wide variety of functions, most of which encompass some form of transcriptional activation or repression. NP220 (nuclear protein 220), also designated zinc-finger protein 638 (ZNF638) or Cutaneous T cell lymphoma-associated antigen se33-1, is a 1,978 amino acid protein that contains one matrix-type zinc finger and two RRM (RNA recognition motif) domains, suggesting a role in transcriptional regulation. NP220 binds to double-stranded DNA fragments by recognizing clusters of cytidines. NP220 interacts with FHL-2 and is also thought to be phosphorylated by ATM or ATR upon DNA damage. It exists as five isoforms as a result of alternative splicing events. Isoform five of NP220 is a tumor-associated antigen found in several cutaneous T cell lymphoma (CTCL), and in particular in mycosis fungoides patients and in Sezary syndrome patients.

### REFERENCES

1. Matsushima, Y., et al. 1996. A family of novel DNA-binding nuclear proteins having polypyrimidine tract-binding motif and arginine/serine-rich motif. *Biochem. Biophys. Res. Commun.* 223: 427-433.
2. Inagaki, H., et al. 1996. A large DNA-binding nuclear protein with RNA recognition motif and serine/arginine-rich domain. *J. Biol. Chem.* 271: 12525-12531.
3. Matsushima, Y., et al. 1997. Zinc finger-like motif conserved in a family of RNA binding proteins. *Biosci. Biotechnol. Biochem.* 61: 905-906.
4. Okumura, K., et al. 1998. Mapping of human DNA-binding nuclear protein (NP220) to chromosome band 2p13.1-p13.2 and its relation to matrix 3. *Biosci. Biotechnol. Biochem.* 62: 1640-1642.
5. Chan, K.K., et al. 1998. Molecular cloning and characterization of FHL2, a novel LIM domain protein preferentially expressed in human heart. *Gene* 210: 345-350.
6. Eichmuller, S., et al. 2001. Serological detection of cutaneous T cell lymphoma-associated antigens. *Proc. Natl. Acad. Sci. USA* 98: 629-634.
7. Ng, E.K., et al. 2002. Interaction of the heart-specific LIM domain protein, FHL2, with DNA-binding nuclear protein, hNP220. *J. Cell. Biochem.* 84: 556-566.

### CHROMOSOMAL LOCATION

Genetic locus: ZNF638 (human) mapping to 2p13.3.

### PRODUCT

NP220 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NP220 shRNA Plasmid (h): sc-94523-SH and NP220 shRNA (h) Lentiviral Particles: sc-94523-V as alternate gene silencing products.

For independent verification of NP220 (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-94523A, sc-94523B and sc-94523C.

### 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

NP220 siRNA (h) is recommended for the inhibition of NP220 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.

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NP220 gene expression knockdown using RT-PCR Primer: NP220 (h)-PR: sc-94523-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.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.