



## azurocidin siRNA (h): sc-42966

### BACKGROUND

Azurocidin is a multifunctional endotoxin-binding serine protease homolog that accumulates in azurophil granules during the promyelocytic stage of neutrophil differentiation. The human azurocidin gene maps to chromosome 19p13.3 and encodes a 251 amino acid protein. The genes encoding azurocidin, neutrophil elastase and proteinase 3 are in a cluster located at the tip of the short arm of chromosome 19. Each of these three proteins are expressed coordinately and their protein products are packaged together into azurophil granules. When released from activated granulocytes, azurocidin potentiates bacterial uptake in monocytes and enhances the potential of microbial killing in monocytes and granulocytes. Azurocidin potentiates the LPS-induced release of proinflammatory cytokines (TNF $\alpha$ , IL-1 and IL-6) from isolated human monocytes. In addition azurocidin induces Ca<sup>2+</sup>-dependent cytoskeletal rearrangement and intercellular gap formation in endothelial-cell monolayers *in vitro* and increases macromolecular efflux in microvesicles *in vivo*. Selective inactivation of azurocidin prevents azurophil granule containing neutrophils from inducing endothelial hyper-permeability, suggesting that azurocidin plays a central role in neutrophil trafficking during inflammation.

### REFERENCES

1. Campanelli, D., et al. 1990. Azurocidin and a homologous serine protease from neutrophils. Differential antimicrobial and proteolytic properties. *J. Clin. Invest.* 85: 904-915.
2. Zimmer, M., et al. 1992. Three human elastase-like genes coordinately expressed in the myelomonocyte lineage are organized as a single genetic locus on 19pter. *Proc. Natl. Acad. Sci. USA* 89: 8215-8219.
3. Online Mendelian Inheritance in Man, OMIM™. 1996. Johns Hopkins University, Baltimore, MD. MIM Number: 162815. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Heinzelmann, M., et al. 1998. Heparin-binding protein (CAP37) is internalized in monocytes and increases LPS-induced monocyte activation. *J. Immunol.* 160: 5530-5536.
5. Heinzelmann, M., et al. 1998. Heparin binding protein (CAP37) is an opsonin for *Staphylococcus aureus* and increases phagocytosis in monocytes. *Inflammation* 22: 493-507.
6. Lindmark, A., et al. 1999. Characterization of the biosynthesis, processing, and sorting of human HBP/CAP37/azurocidin. *J. Leukoc. Biol.* 66: 634-643.

### CHROMOSOMAL LOCATION

Genetic locus: AZU1 (human) mapping to 19p13.3.

### PRODUCT

azurocidin siRNA (h) is a target-specific 19-25 nt siRNA 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 azurocidin shRNA Plasmid (h): sc-42966-SH and azurocidin shRNA (h) Lentiviral Particles: sc-42966-V as alternate gene silencing 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

azurocidin siRNA (h) is recommended for the inhibition of azurocidin 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 azurocidin gene expression knockdown using RT-PCR Primer: azurocidin (h)-PR: sc-42966-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.