

# fetuin-B siRNA (h): sc-45303

## BACKGROUND

Fetuin is a secreted plasma protein that is expressed in hepatocytes, monocyte/macrophages and in bone and is down-regulated during injury and inflammation. Fetuin preferentially binds to and carries calcium and barium ions in the blood, where it is thought to mediate serum calcium homeostasis and mineralization, and to potentially participate in the transport of bioactive molecules. Additionally, fetuin has been shown to function as an acute phase anti-inflammatory mediator that is critical to regulating the innate immune response following tissue injury. During inflammation, circulating fetuin levels substantially decrease as fetuin becomes associated with the membranes of macrophages. This membrane associated form of fetuin acts as an opsonic participant by potentiating the entry of cationic small molecules into the activated macrophage, which in turn facilitates macrophage-deactivating mechanisms. Biologically active fetuin is derived from a precursor protein that is cleaved at the amino terminus to generate two chains held together by a single disulfide bond. Fetuin-B is primarily expressed in liver and testis.

## REFERENCES

1. Lebreton, J.P., et al. 1979. Serum concentration of human  $\alpha$ 2-HS glycoprotein during the inflammatory process: evidence that  $\alpha$ 2 HS glycoprotein is a negative acute-phase reactant. *J. Clin. Invest.* 64: 1118-1129.
2. Lee, C.C., et al. 1987. Human  $\alpha$ 2-HS-glycoprotein: the A and B chains with a connecting sequence are encoded by a single mRNA transcript. *Proc. Natl. Acad. Sci. USA* 84: 4403-4407.
3. Schinke, T., et al. 1996. The serum protein  $\alpha$ 2-HS glycoprotein/fetuin inhibits apatite formation *in vitro* and in mineralizing calvaria cells. A possible role in mineralization and calcium homeostasis. *J. Biol. Chem.* 271: 20789-20796.
4. Osawa, M., et al. 1997. Structure of the gene encoding human  $\alpha$  2-HS glycoprotein (AHSG). *Gene* 196: 121-125.
5. Wang, H., et al. 1998. Fetuin ( $\alpha$ 2-HS-glycoprotein) opsonizes cationic macrophage-deactivating molecules. *Proc. Natl. Acad. Sci. USA* 95: 14429-14434.
6. Dziegielewska, K.M., et al. 1998. Modification of macrophage response to lipopolysaccharide by fetuin. *Immunol. Lett.* 60: 31-35.

## CHROMOSOMAL LOCATION

Genetic locus: FETUB (human) mapping to 3q27.3.

## PRODUCT

fetuin-B 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 fetuin-B shRNA Plasmid (h): sc-45303-SH and fetuin-B shRNA (h) Lentiviral Particles: sc-45303-V as alternate gene silencing products.

For independent verification of fetuin-B (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-45303A, sc-45303B and sc-45303C.

## 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

fetuin-B siRNA (h) is recommended for the inhibition of fetuin-B 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.

## GENE EXPRESSION MONITORING

fetuin-B (LL9): sc-73978 is recommended as a control antibody for monitoring of fetuin-B 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).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor fetuin-B gene expression knockdown using RT-PCR Primer: fetuin-B (h)-PR: sc-45303-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.