SANTA CRUZ BIOTECHNOLOGY, INC.

AMBP siRNA (m): sc-39553

BACKGROUND

The AMBP (α-1-Microglobulin/bikunin precursor) gene encodes a protein precursor, known as AMBP, that is cleaved to produce two distinct proteins, designated α-1-Microglobulin and Bikunin. α-1-Microglobulin, also known as protein HC, is a member of the lipocalin superfamily and is secreted mainly in plasma, urine and cerebrospinal fluid. Thought to have reductase/dehydrogenase activity, α-1-Microglobulin exhibits immunosuppressive properties, such as cytokine secretion and inhibition of antigen-induced lymphocyte cell proliferation, and may be involved in the reduction of biological pro-oxidants. The second protein cleavage product, designated Bikunin and also known as inter-α-trypsin inhibitor light chain, ITI-LC or urinary trypsin inhibitor, is a widely expressed protein that is stored in the granules of human connective tissue mast cells. One of many proteins in the Kunitz-type protease inhibitor family, Bikunin prevents autodigestion by exocrine enzymes, such as trypsinogen and chymo-trypsinogen, and plays a role in the antiinflammatory/antiproteinase immune response. Unlike α-1-Microglobulin, Bikunin is implicated in the pathogenesis of a number of renal diseases, such as urolithiasis.

REFERENCES

1. Vetr, H. and Gebhard, W. 1990. Structure of the human α-1-Microglobulin-Bikunin gene. Biol. Chem. Hoppe-Seyler 371: 1185-1196.
2. Cui, C.Y., Aragane, Y., Maeda, A., Piao, Y.L., Takahashi, M., Kim, L.H. and Tezuka, T. 1999. Bikunin, a serine protease inhibitor, is present on the cell boundary of epidermis. J. Invest. Dermatol. 113: 182-188.
3. Akerström, B., Lögdberg, L., Berggärd, T., Osmark, P. and Lindqvist, A. 2000. α-1-Microglobulin: a yellow-brown lipocalin. Biochim. Biophys. Acta 1482: 172-184.
4. Okuyama, M., Yamaguchi, S. and Yachiku, S. 2003. Identification of Bikunin isolated from human urine inhibits calcium oxalate crystal growth and its localization in the kidneys. Int. J. Urol. 10: 530-535.
5. Akerström, B., Maghzal, G.J., Winterbourn, C.C. and Kettle, A.J. 2007. The lipocalin α-1-Microglobulin has radical scavenging activity. J. Biol. Chem. 282: 31493-31503.
6. Akerström, B., Maghzal, G.J., Winterbourn, C.C. and Kettle, A.J. 2007. The lipocalin alpha1-microglobulin has radical scavenging activity. J. Biol. Chem. 282: 31493-31503.
7. Olsson, M.G., Allhorn, M., Olofsson, T. and Akerström, B. 2007. Up-regulation of α1-Microglobulin by hemoglobin and reactive oxygen species in hepatoma and blood cell lines. Free Radic. Biol. Med. 42: 842-851.

CHROMOSOMAL LOCATION

Genetic locus: Ambp (mouse) mapping to 4 B3.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

AMBP 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see AMBP shRNA Plasmid (m): sc-39553-SH and AMBP shRNA (m) Lentiviral Particles: sc-39553-V as alternate gene silencing products.

For independent verification of AMBP (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-39553A, sc-39553B and sc-39553C.

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

AMBP siRNA (m) is recommended for the inhibition of AMBP 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 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 AMBP gene expression knockdown using RT-PCR Primer: AMBP (m)-PR: sc-39553-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.