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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 



BPIL1 siRNA (m): sc-141731

BACKGROUND

Members of the bactericidal/permeability-increasing protein family have antimicrobial properties and bind lipophilic substances, therefore targeting gram-negative bacteria. The bactericidal permeability increasing protein (BPI) is an antibacterial and endotoxin-neutralizing molecule that is abundant in the granules of polymorphonuclear leukocytes (neutrophil granules). Sharing structural and sequence homologies with BPI, BPIL1 (bactericidal/permeability-increasing protein-like 1) is a 458 amino acid secreted protein that contains the family's common conserved feature of two cysteine residues that are critical for protein function. While BPIL1 is primarily expressed at low levels in tonsil tissue, it has been found to be upregulated in hypertrophic tonsils, suggesting that it may play a role in the pathogenesis of inflamed disease tissue.

REFERENCES

1. Hubacek, J.A., et al. 1997. The genomic organization of the genes for human lipopolysaccharide binding protein (LBP) and bactericidal permeability increasing protein (BPI) is highly conserved. *Biochem. Biophys. Res. Commun.* 236: 427-430.
2. Mulero, J.J., et al. 2002. Three new human members of the lipid transfer/lipopolysaccharide binding protein family (LT/LBP). *Immunogenetics* 54: 293-300.
3. Beamer, L.J. 2003. Structure of human BPI (bactericidal/permeability-increasing protein) and implications for related proteins. *Biochem. Soc. Trans.* 31: 791-794.
4. Andrault, J.B., et al. 2003. Expansion of the BPI family by duplication on human chromosome 20: characterization of the RY gene cluster in 20q11.21 encoding olfactory transporters/antimicrobial-like peptides. *Genomics* 82: 172-184.
5. Xu, P., et al. 2005. Characterization and expression analysis of bactericidal permeability-increasing protein (BPI) antimicrobial peptide gene from channel catfish *Ictalurus punctatus*. *Dev. Comp. Immunol.* 29: 865-878.
6. Wheeler, T.T., et al. 2007. Expansion of the bactericidal/permeability increasing-like (BPI-like) protein locus in cattle. *BMC Genomics* 8: 75.

CHROMOSOMAL LOCATION

Genetic locus: Bpifb2 (mouse) mapping to 2 H1.

PRODUCT

BPIL1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see BPIL1 shRNA Plasmid (m): sc-141731-SH and BPIL1 shRNA (m) Lentiviral Particles: sc-141731-V as alternate gene silencing products.

For independent verification of BPIL1 (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-141731A, sc-141731B and sc-141731C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

BPIL1 siRNA (m) is recommended for the inhibition of BPIL1 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 μ M in 66 μ 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 BPIL1 gene expression knockdown using RT-PCR Primer: BPIL1 (m)-PR: sc-141731-PR (20 μ 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 for detailed protocols and support products.