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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](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

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

# periplakin siRNA (h): sc-43414

## BACKGROUND

Paraneoplastic pemphigus (PNP) is an autoimmune blistering disease that is associated with underlying neoplasms. PNP sera reacts with multiple plakin family proteins, among which only envoplakin and periplakin are constantly detected. Periplakin, a membrane-associated precursor of the epidermal cornified envelope and desmosomes, is a member of the plakin family of proteins. The periplakin gene PPL is mapped to human chromosome 16p13.3, and its promoter contains multiple AP2 sites and a SP1 site. Periplakin localizes to desmosomes, the interdesmosomal plasma membrane and intermediate filaments. The periplakin rod domain is necessary for the redistribution of envoplakin to desmosomes and the cytoskeleton by heterodimerization. The periplakin linker domain is required for intermediate filament association. The N-terminus of periplakin accumulates at the cell surface of microvilli in association with cortical actin. Envoplakin and periplakin localize independently to desmosomes, and the distribution of envoplakin at the interdesmosomal plasma membrane depends on heterodimerization with periplakin. The N-terminus of periplakin, therefore, plays an important role in forming the scaffold on which the cornified envelope is assembled.

## REFERENCES

1. Proby, C., et al. 1999. Human autoantibodies against HD1/plectin in paraneoplastic pemphigus. *J. Invest. Dermatol.* 112: 153-156.
2. Amagai, M. 1999. Autoimmunity against desmosomal cadherins in pemphigus. *J. Dermatol. Sci.* 20: 92-102.
3. Kiyokawa, C. 1999. Envoplakin and periplakin are the paraneoplastic pemphigus antigens. *Kurme Med. J.* 46: 71-78.
4. Aho, S., et al. 1999. Human periplakin: genomic organization in a clonally unstable region of chromosome 16p with an abundance of repetitive sequence elements. *Genomics* 56: 160-168.
5. Joly, P., et al. 2000. Sensitivity and specificity of clinical, histologic, and immunologic features in the diagnosis of paraneoplastic pemphigus. *J. Am. Acad. Dermatol.* 43: 619-626.
6. DiColandrea, T., et al. 2000. Subcellular distribution of envoplakin and periplakin: insights into their role as precursors of the epidermal cornified envelope. *J. Cell Biol.* 15: 573-586.

## CHROMOSOMAL LOCATION

Genetic locus: PPL (human) mapping to 16p13.3.

## PRODUCT

periplakin 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 periplakin shRNA Plasmid (h): sc-43414-SH and periplakin shRNA (h) Lentiviral Particles: sc-43414-V as alternate gene silencing products.

For independent verification of periplakin (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-43414A, sc-43414B and sc-43414C.

## 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

periplakin siRNA (h) is recommended for the inhibition of periplakin 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

periplakin (G-1): sc-365530 is recommended as a control antibody for monitoring of periplakin 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor periplakin gene expression knockdown using RT-PCR Primer: periplakin (h)-PR: sc-43414-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.