

# Pepsin A siRNA (h): sc-61317

## BACKGROUND

Pepsin is one of the main proteolytic enzymes secreted by the gastric mucosa. Pepsin consists of a single polypeptide chain and arises from its precursor, pepsinogen, by removal of a 41 amino acid segment from the N-terminus. Pepsinogen is synthesized in the stomach lining, and hydrochloric acid, also produced by the gastric mucosa, is necessary to convert the inactive enzyme and to maintain the optimum acidity (pH 1-3) for pepsin function. Pepsin is particularly effective in cleaving peptide bonds involving aromatic amino acids. Pepsin shows extremely broad specificity; although bonds involving phenylalanine and leucine are preferred, many others are also cleaved to some extent. Pepsin A is a member of the subfamily A1 within the pepsin family and is the predominant endopeptidase in the gastric juice of vertebrates. Pepsin A is inhibited by ovUS-1, a uterine serpin.

## REFERENCES

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3. Kageyama, T. 2004. Role of S'1 loop residues in the substrate specificities of Pepsin A and chymosin. Biochemistry 43: 15122-15130.
4. Akkerdaas, J.H., Wensing, M., Asero, R., Fernandez Rivas, M., Rivas, M.F., Knulst, A.C., Bolhaar, S., Hefle, S.L., Aalberse, R.C. and van Ree, R. 2005. IgE binding to pepsin-digested food extracts. Int. Arch. Allergy Immunol. 138: 203-208.
5. Ibrahim, H.R., Inazaki, D., Abdou, A., Aoki, T. and Kim, M. 2005. Processing of lysozyme at distinct loops by pepsin: a novel action for generating multiple antimicrobial peptide motifs in the newborn stomach. Biochim. Biophys. Acta 1726: 102-114.

## CHROMOSOMAL LOCATION

Genetic locus: PGA3/PGA4/PGA5 (human) mapping to 11q12.2.

## PRODUCT

Pepsin A 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 Pepsin A shRNA Plasmid (h): sc-61317-SH and Pepsin A shRNA (h) Lentiviral Particles: sc-61317-V as alternate gene silencing products.

For independent verification of Pepsin A (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-61317A, sc-61317B and sc-61317C.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support 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

Pepsin A siRNA (h) is recommended for the inhibition of Pepsin A 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

Pepsin A (A-10): sc-271798 is recommended as a control antibody for monitoring of Pepsin A 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™ Molecular Weight Standards: sc-2035, UltraCruz® 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® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Pepsin A gene expression knockdown using RT-PCR Primer: Pepsin A (h)-PR: sc-61317-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.