Secretin (swine)

Cat. No.:	HY-109538
CAS No.:	17034-35-4
Molecular Formula:	$C_{130}H_{220}N_{44}O_{41}$
Molecular Weight:	3055.41
Target:	Secretin Receptor
Pathway:	GPCR/G Protein
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description

Secretin (swine), a neuroendocrine hormone, is the first hormone to be identifie and is secreted by S cells that are localized primarily in the mucosa of the duodenum. Secretin also is a 27-amino acid peptide, which acts on secretin receptors. Secretin is expressed by cells in all mature enteroendocrine cell subsets and can be prompted by fatty acids. Secretin stimulates the secretion of pancreatic water and bicarbonate. Secretin exerts various effects in organs, can be used for the research of digestive system, central nervous system and energy metabolism[1][2].

In Vitro

Secretin (swine) (10^{-7}M, 10^{-6}M; 24 to 72 h and 7 days) stimulates biliary growth by interaction with secretin receptors (SR) and knockout of SR reduces biliary proliferation by downregulating cAMP dependent signaling[2].
Secretin (10^{-7}M, 10^{-6}M; 24 to 72 h and 7 days) increases the proliferation in human HIBEpiC and large murine cholangiocyte lines[2][3][4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Immunofluorescence[2]

Cell Line:	large murine cholangiocyte lines
Concentration:	10^{-7}M, 10^{-6} M
Incubation Time:	24 to 72 h and 7 days
Result:	Increased the proliferation of cholangiocytes.

Cell Proliferation Assay[2]

Cell Line:	human HIBEpiC and large murine cholangiocyte lines
Concentration:	10^{-7}M, 10^{-6}M
Incubation Time:	24 to 72 h and 7 days
Result:	Increased the proliferation of non-transfected, vector-transfected and secretin shRNA large cholangiocytes and HiBEpiC compared to the cell lines treated with BSA (basal).

In Vivo

Secretin (swine) (2.5 nM/kg, BW/day, osmotic minipumps, for 1 week) stimulates biliary cell proliferation by regulating expression of microRNA 125b and microRNA let7a in mice[2].

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Animal Model:	Sct$^{⊠/⊠}$mice[2]
Dosage:	2.5 nM/kg
Administration:	2.5 nM/kg, BW/day, osmotic minipumps, for 1 week
Result:	Increased in supernatants from cholangiocytes and S cells and in serum and bile following BDL in control mice. Had low IBDM, reduced proliferation, and reduced production of vascular endothelial growth factor A (VEGFA) and nerve growth factor (NGF) in BDL Sct$^{⊠/⊠}$mice. Regulated VEGF and NGF expression that negatively correlated with microRNA 125b and let7a levels in liver tissue[2].

REFERENCES

[1]. Katharina Schnabl, et al. Secretin as a Satiation Whisperer With the Potential to Turn into an Obesity-curbing Knight. Endocrinology. 2021 Sep 1;162(9):bqab113.

[2]. Shannon Glaser, et al. Secretin stimulates biliary cell proliferation by regulating expression of microRNA 125b and microRNA let7a in mice. Gastroenterology. 2014 Jun;146(7):1795-808.e12.

[3]. G Alpini, et al. Morphological, molecular, and functional heterogeneity of cholangiocytes from normal rat liver. Gastroenterology. 1996 May;110(5):1636-43.

[4]. Shannon Glaser, et al. Knockout of secretin receptor reduces large cholangiocyte hyperplasia in mice with extrahepatic cholestasis induced by bile duct ligation. Hepatology. 2010 Jul;52(1):204-14.

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