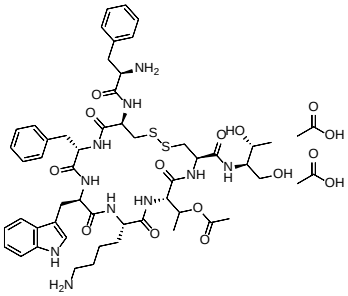
Product data sheet

MedKoo Cat#: 100675 Name: Octreotide acetate CAS: 79517-01-4 (acetate) Chemical Formula: $C_{55}H_{76}N_{10}O_{15}S_2$ Molecular Weight: 1181.388	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

Octreotide is a synthetic long-acting cyclic octapeptide with pharmacologic properties mimicking those of the natural hormone somatostatin. Octreotide is a more potent inhibitor of growth hormone, glucagon, and insulin than somatostatin. Similar to somatostatin, this agent also suppresses the luteinizing hormone response to gonadotropin-releasing hormone, decreases splanchnic blood flow, and inhibits the release of serotonin, gastrin, vasoactive intestinal peptide (VIP), secretin, motilin, pancreatic polypeptide, and thyroid stimulating hormone.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	29.0	24.55
Water	25.0	21.16

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	0.93 mL	4.63 mL	9.27 mL
5 mM	0.19 mL	0.93 mL	1.85 mL
10 mM	0.09 mL	0.46 mL	0.93 mL
50 mM	0.02 mL	0.09 mL	0.19 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Zhang S, Tang C, Wang X. Octreotide activates autophagy to alleviate lipopolysaccharide-induced human pulmonary epithelial cell injury by inhibiting the protein kinase B (AKT)/mammalian target of rapamycin (mTOR) signaling pathway. Bioengineered. 2022 Jan;13(1):217-226. doi: 10.1080/21655979.2021.2012908. PMID: 34898367; PMCID: PMC8805934.

2. Kim SE, Kim J, Lee JY, Lee SB, Paik JS, Yang SW. Octreotide inhibits secretion of IGF-1 from orbital fibroblasts in patients with thyroid-associated ophthalmopathy via inhibition of the NF-κB pathway. PLoS One. 2021 Apr 22;16(4):e0249988. doi: 10.1371/journal.pone.0249988. PMID: 33886620; PMCID: PMC8062018.

In vivo study

1. Kugita M, Nishii K, Yamaguchi T, Suzuki A, Yuzawa Y, Horie S, Higashihara E, Nagao S. Beneficial effect of combined treatment with octreotide and pasireotide in PCK rats, an orthologous model of human autosomal recessive polycystic kidney disease. PLoS One. 2017 May 18;12(5):e0177934. doi: 10.1371/journal.pone.0177934. PMID: 28542433; PMCID: PMC5436842.

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2. Wang XX, Ye T, Li M, Li X, Qiang O, Tang CW, Liu R. Effects of octreotide on hepatic glycogenesis in rats with high fat diet-induced obesity. Mol Med Rep. 2017 Jul;16(1):109-118. doi: 10.3892/mmr.2017.6586. Epub 2017 May 16. PMID: 28534956; PMCID: PMC5482138.

7. Bioactivity

Biological target:

Octreotide acetate, a long-acting synthetic analog of native somatostatin, inhibits growth hormone, glucagon, and insulin more potently.

In vitro activity

Results revealed that Octreotide notably enhanced cell viability and reduced LDH activity. The levels of inflammatory factors were significantly decreased following Octreotide treatment. Additionally, Octreotide attenuated the apoptotic capacity of LPS-induced BEAS-2B cells, led to the up-regulation of Bcl-2 protein level while cut down the protein levels of Bax and cleaved caspase3. Remarkably, the expression of autophagy-related protein LC3II/I and Beclin1 was elevated after Octreotide administration.

Reference: Bioengineered. 2022 Jan;13(1):217-226. https://pubmed.ncbi.nlm.nih.gov/34898367/

In vivo activity

The aim of the present study was to verify the effects of octreotide on hepatic glycogenesis in rats with HFD-induced obesity. The body weight, levels of FPG and FINS, and the HOMA index were significantly reduced following octreotide treatment, whereas the decrease in Lee's index, the blood levels of ALT, AST, TC, TG and FFA, and the AUC did not reach statistical significance. Hepatic TG and FFA levels were significantly increased and hepatic glycogen content was significantly decreased in rats with HFD-induced obesity when compared with those in the control group. Octreotide intervention restored these alterations.

Reference: Mol Med Rep. 2017 Jul;16(1):109-118. https://pubmed.ncbi.nlm.nih.gov/28534956/