

Peptide YY (PYY), human

Cat. No.:	HY-P1514
CAS No.:	118997-30-1
Molecular Formula:	C ₁₉₄ H ₂₉₅ N ₅₅ O ₅₇
Molecular Weight:	4309.75
Sequence:	Tyr-Pro-Ile-Lys-Pro-Glu-Ala-Pro-Gly-Glu-Asp-Ala-Ser-Pro-Glu-Glu-Leu-Asn-Arg-Tyr-Tyr-Ala-Ser-Leu-Arg-His-Tyr-Leu-Asn-Leu-Val-Thr-Arg-Gln-Arg-Tyr-NH ₂
Sequence Shortening:	YPIKPEAPGEDASPEELNRYASLRHYLNLVTRQRY-NH ₂
Target:	Neuropeptide Y Receptor
Pathway:	GPCR/G Protein; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description	Peptide YY (PYY) is a gut hormone that regulates appetite and inhibits pancreatic secretion. Peptide YY (PYY) can mediate its effects through the Neuropeptide Y receptors.
IC₅₀ & Target	Neuropeptide Y receptor ^[1]
In Vitro	<p>The gut hormone peptide YY (PYY) belongs to the pancreatic polypeptide (PP) family along with PP and neuropeptide Y (NPY). These peptides mediate their effects through the NPY receptors of which there are several subtypes (Y1, Y2, Y4, and Y5)^[1]. Pancreatic polypeptide YY (Peptide YY), a small peptide consisting of 36 amino acids, is originally isolated from porcine intestine and is secreted from the neuroendocrine cells (L cells) in the mucosa of the gastrointestinal tract, but it has been localized to other locations associated with the digestive system^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	<p>Peptide YY is capable of strongly inhibiting secretin-stimulated pancreatic secretion. A very low dose of Peptide YY (10-20 pmol/kg) significantly decreases the pancreatic secretion of bicarbonate as well as fluid that is stimulated by a single dose of secretin (0.1 unit/kg). A dose of Peptide YY of 100-200 pmol/kg causes a 70-80% reduction of the pancreatic bicarbonate and fluid secretion^[3]. Peptide YY is localised to blood vessels and atherosclerotic plaques of rabbits. It causes vasoconstriction of the vascular tree^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

PROTOCOL

Animal Administration ^{[2][3]}	<p>Cats^[3]</p> <p>The inhibitory effects of Peptide YY on pancreatic exocrine secretion are studied by using an anesthetized adult (4 kg) cat. Infusion of secretin and CCK (1.5 units/ kg/hr each) in saline solution is made through the saphenous vein by using a perfusion pump at a flow rate of 10 ml/hr. Infusion or single injection of Peptide YY (10-250 pmol/kg) is also made through the saphenous vein. Pancreatic juice from the cannulated pancreatic duct is collected in test tubes for 10-min periods by</p>
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using a fraction collector. The volume of the juice and A280 are measured. Bicarbonate is determined by the titration method^[3].

Rabbits^[2]

New Zealand White rabbits are fed an atherogenic diet and control animals fed a normal diet for 4 weeks. Immunohistochemistry is used to determine the localization of Peptide YY and eNOS in the aorta. The aorta, carotid, renal, iliac, inferior mesenteric, and renal interlobular arteries are removed, mounted in organ baths, and subjected to doses of Peptide YY (1-100 nM) and then acetylcholine (1 μ M)^[2].

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

REFERENCES

- [1]. Peptide YY, et al. The gut hormone peptide YY regulates appetite. *Ann N Y Acad Sci.* 2003 Jun;994:162-8.
- [2]. Tatemoto K, et al. Isolation and characterization of peptide YY (PYY), a candidate gut hormone that inhibits pancreatic exocrine secretion. *Proc Natl Acad Sci U S A.* 1982 Apr;79(8):2514-8.
- [3]. Smith RM, et al. Role of Peptide YY in blood vessel function and atherosclerosis in a rabbit model. *Clin Exp Pharmacol Physiol.* 2015 Jun;42(6):648-52.
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