Tetragastrin

Cat. No.: HY-125556

CAS No.: 1947-37-1

Molecular Formula: $C_{29}H_{36}N_6O_6S$

Molecular Weight: 596.7

Sequence Shortening: WMDF-NH2

Target: Cholecystokinin Receptor

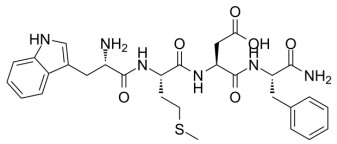
Pathway: GPCR/G Protein; Neuronal Signaling

Storage: Sealed storage, away from moisture

Powder -80°C 2 years

-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 8.33 mg/mL (13.96 mM; ultrasonic and warming and heat to 80°C)

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	1.6759 mL	8.3794 mL	16.7588 mL
	5 mM	0.3352 mL	1.6759 mL	3.3518 mL
	10 mM	0.1676 mL	0.8379 mL	1.6759 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (4.19 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.19 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.19 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Tetragastrin (Cholecystokinin tetrapeptide; CCK-4) is the C-terminal tetrapeptide of gastrin. Tetragastrin can stimulate gastric secretion[1]. Tetragastrin is a Cholecystokinin (CCK-4) receptor agonist[2]. Gastric mucosal protection[3].

In Vitro

The antagonist of histamine H2-receptors, Cimetidine inhibits the stimulatory effect of histamine in vitro and activates Tetragastrin stimulation of the adenylate cyclase activity. Tetragastrin and histamine activate adenylate cyclase of the rat gastric mucosa via different receptors[4].

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

In Vivo

In inbred Wistar rats treated with N-methyl-N'-nitro-N-nitrosoguanidine, Tetragastrin (s.c.; 1 mg/kg; every other day) treatment significantly reduces the incidence and the number of adenocarcinomas, and has a significantly lower labelling index of the antral mucosa[1].

Tetragastrin has potential for enhancing gastric mucosal protection associated with mucus secretion and/or mucus synthesis on the surface mucosa of rat gastric mucosa. A significant increase in the mucin content was noted in the mucus gel and surface mucosal layer. An increase in mucin in the mucus gel and surface mucosa would thus appear due to the administration of Tetragastrin[3].

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Animal Model:	Seven-week-old male Wistar rats, each weighing approximately 160 g[3]
Dosage:	12, 120, or 400 μg/kg
Administration:	Administered subcutaneously (s.c.); followed by 50% ethanol-induced gastric injury
Result:	Caused a significant increase in mucin content in the corpus mucosa and prevented 50% ethanol-induced gastric mucosal damage in a dose-dependent manner.

REFERENCES

[1]. M Tatsuta, et al. Effect of 6-hydroxydopamine on gastric carcinogenesis and tetragastrin inhibition of gastric carcinogenesis induced by N-methyl-N'-nitro-N-nitrosoguanidine in Wistar rats. Cancer Res. 1989 Aug 1;49(15):4199-203.

[2]. A A Karelin,et al. Tetragastrin activation of rat gastric mucosa adenyl cyclase in vitro. Biull Eksp Biol Med. 1981 Apr;91(4):440-1.

[3]. Nathalie Lara, et al. Pulmonary and systemic nitric oxide measurements during CCK-5-induced panic attacks. Neuropsychopharmacology. 2003 Oct;28(10):1840-5.

[4]. Y Komuro,et al. Effects of tetragastrin on mucus glycoprotein in rat gastric mucosal protection. Gastroenterol Jpn. 1992 Oct;27(5):597-603.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA