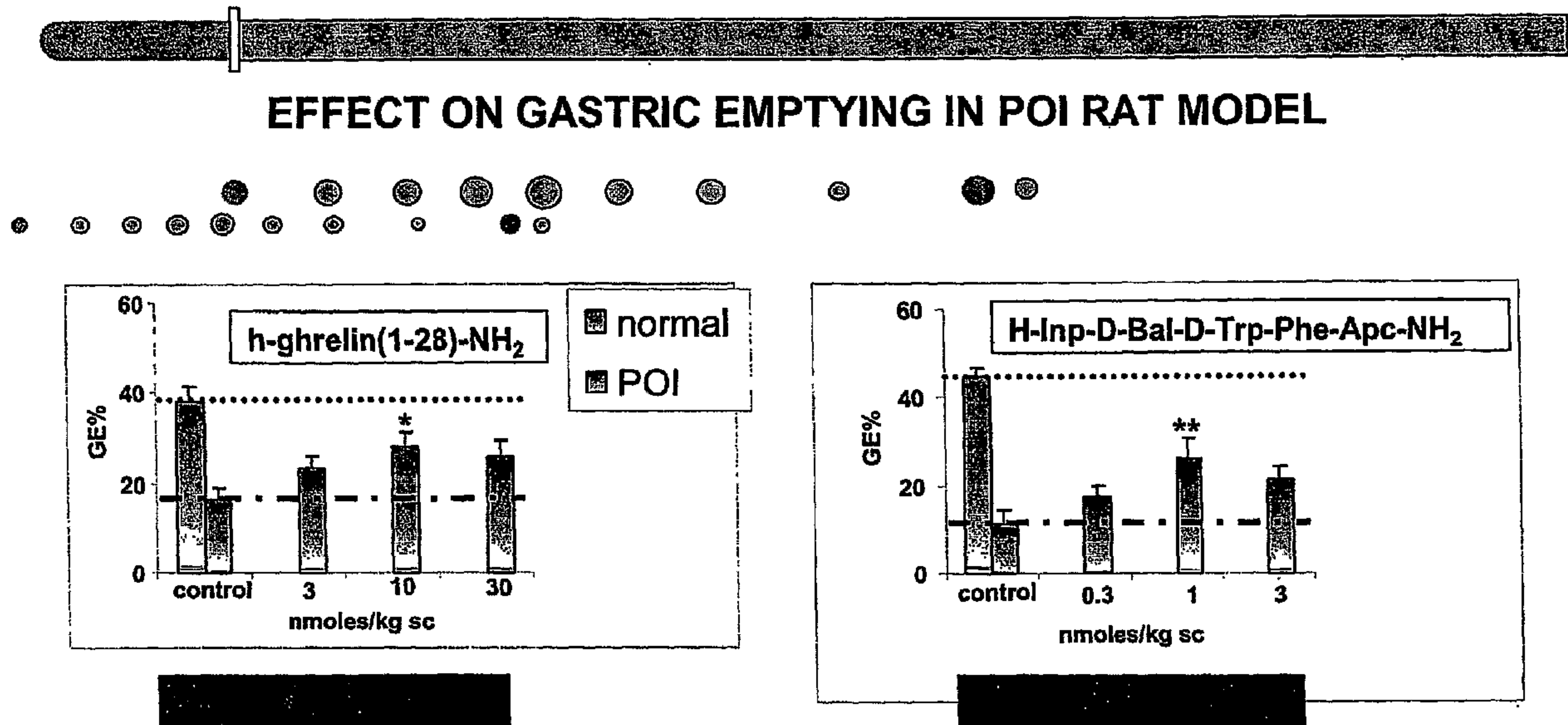




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(54) **Titre : COMPOSITION ET PROCEDES DE STIMULATION DE LA MOTILITE GASTROINTESTINALE**
(54) **Title: COMPOSITIONS AND METHODS FOR STIMULATING GASTROINTESTINAL MOTILITY**



(57) **Abrégé/Abstract:**

The present invention relates to a method of treating a transient impairment of the motility of the gastrointestinal system resulting from postoperative ileus in a patient wherein said method includes the step of administering a therapeutically effective amount of a peptidyl analog of ghrelin to said patient.

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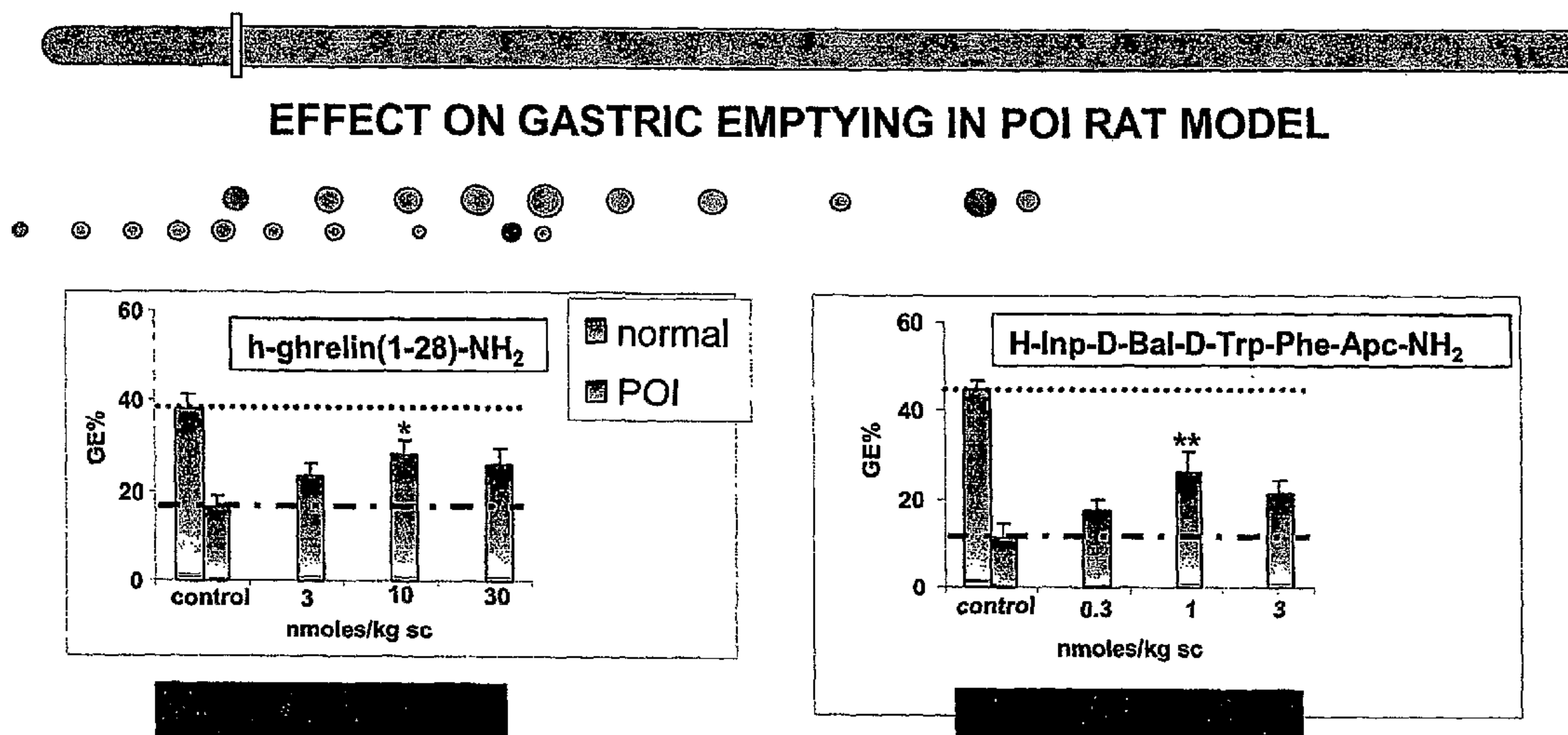
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(54) Title: COMPOSITION AND METHODS FOR STIMULATING GASTROINTESTINAL MOTILITY



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COMPOSITIONS AND METHODS FOR STIMULATING GASTROINTESTINAL MOTILITY

BACKGROUND OF THE INVENTION

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FIELD OF THE INVENTION

The present invention is directed to methods for stimulating the motility of the gastrointestinal system in a patient which comprises administering peptidyl analogs that possess agonistic ghrelin activity, a prodrug thereof, or a pharmaceutically acceptable salt of said analogs or said prodrug.

15

DESCRIPTION OF THE RELATED ART

Gastrointestinal (GI) motility is a coordinated neuromuscular process that transports nutrients through the digestive system (Scarpignato, C., Dig. Dis., (1997), 15:112), the impairment of which may result in a variety of ailments including gastroesophageal reflux disease (GERD), gastroparesis (e.g., diabetic and post-surgical),
20 irritable bowel syndrome (IBS), constipation (e.g. that associated with the hypomotility phase of IBS), emesis (e.g., that caused by cancer chemotherapy agents), ileus and colonic pseudo-obstruction (U.S. Patent No. 6,548,501; U.S. Patent Application No. 20040266989). These various complications of interrupted GI motility contribute significantly to the health care burdens of industrialized nations (U.S. Patent No.
25 6,548,501; Feighner, S. D. et al., Science, (1999), 284:2184-8).

"Ileus" refers to the obstruction of the bowel or gut, especially the colon (see, e.g., Dorland's Illustrated Medical Dictionary, p. 816, 27th ed. (W.B. Saunders Company, Philadelphia 1988)). Generally, any trauma to the bowel resulting in the release of inflammatory mediators leading to activation of inhibitory neural reflexes will result in
30 the onset of ileus. Ileus may be diagnosed by the disruption of the normal coordinated movements of the gut, resulting in failure of the propulsion of intestinal contents (Resnick, J., Am. J. of Gastroentero., (1997), 92:751; Resnick, J., Am. J. of Gastroentero., (1997), 92:934). Ileus should be distinguished from constipation, which refers to

5 infrequent or difficulty in evacuating the feces (see, e.g., Dorland's Illustrated Medical Dictionary, p. 375, 27th ed. (W.B. Saunders Company, Philadelphia 1988)).

Ileus may be brought about by a variety of causes such as parturition; intestinal ischaemia; retroperitoneal haematoma; intraabdominal sepsis; intraperitoneal inflammation, e.g., acute appendicitis, choecystitis, pancreatitis; fractures of the spine;
10 ureteric colic; thoracic lesions; basal pneumonia; rib fractures; myocardial infarction; and metabolic disturbances. Post-partum ileus is a common problem for women in the period following childbirth and is thought to be caused by fluctuations in natural opioid levels as a result of birthing stress. Patients having undergone procedures such as major abdominal surgery including laparotomy for abdominal abscess or small intestinal
15 transplantation (SITx), chest, pelvic or orthopedic surgery, often suffer from a period of transient impairment of bowel function called post-surgical or post-operative ileus (referred to hereinafter as POI).

POI commonly occurs for 24 to 72 hours following surgery. In some instances, the bowel dysfunction may become quite severe, lasting for more than a week and
20 affecting more than one portion of the GI tract (Livingston, E. H. et al., Digest. Dis. and Sci., (1990), 35:121). Gastrointestinal dysmotility associated with POI is generally most severe in the colon. POI is characterized by abdominal nausea, distension, vomiting, obstipation, inability to eat and cramps. POI not only delays the normal resumption of food intake after surgery and prolongs hospitalization, but also fosters postoperative
25 complications, especially aspiration pneumonia.

The administration of opioid analgesics to a patient after surgery may often contribute to and/or exacerbate existing bowel dysfunction, thereby delaying recovery of normal bowel function. Since virtually all patients receive opioid analgesics, such as morphine or other narcotics for pain relief after surgery, particularly major surgery,
30 current post-surgical pain treatment may actually slow recovery of normal bowel function, resulting in a delay in hospital discharge and increasing the cost of medical care.

5 Agents which act to affect gastrointestinal motility may also confer beneficial effects upon patients suffering from emesis. Emesis, or vomiting, is often preceded by retching and may be accompanied by dry heaves. Emesis may be caused by imbalances in the digestive tract, such as ileus, dyspepsia, or inflammation of the gastric wall, or by imbalances in the sensory system or brain, such as motion sickness, migraine or tumors.

10 Emesis may be self-induced such as in anorexia or bulimia, and it may also occur in response to severe pain, emotional responses (e.g., to disagreeable sights or odors), or pregnancy. Emesis is a common complication following the administration of many medications, particularly anti-cancer treatments such as chemotherapy. Prolonged episodes or repetitive emesis may result in a variety of injuries to the organism,

15 including dehydration and electrolyte imbalances (Quigley, E. M. et al., *Gastroentero.*, (2001), 120:263-86).

Agents which act to affect gastrointestinal motility may also confer beneficial effects upon patients suffering from gastroparesis. Gastroparesis, also called delayed gastric emptying, is a disorder in which the nerves to the stomach are damaged or stop

20 working and the stomach takes too long to empty its contents. For example, following damage to the vagus nerve, the nerve which controls the movement of food through the digestive tract, the muscles of the stomach and intestines do not work normally and the movement of food is slowed or stopped. High blood glucose causes chemical changes in nerves and damages the blood vessels that carry oxygen and nutrients to the nerves. If

25 blood glucose levels remain high over a long period of time, as is often the case in diabetes, the vagus nerve can be damaged; gastroparesis often occurs in people with type 1 diabetes or type 2 diabetes (Murray, C. D. et al., *Gut*, (2005), 54:1693-8).

The traditional therapies for impaired GI motility, such as that of ileus, gastroparesis and emesis, are considered ineffective. Current therapies for treating ileus

30 include functional stimulation of the intestinal tract, stool softeners, laxatives such as Dulcolax®, lubricants, intravenous hydration, nasogastric suction, prokinetic agents, early enteral feeding, and nasogastric decompression. Nasogastric intubation to decompress the stomach has also traditionally been used to treat ileus.

5 Traditional pharmaceuticals used to treat impaired GI motility, such as that of
ileus, include drugs that act to increase colonic motility, such as Leu13-motilin and
prostaglandin F2 alpha, and prokinetic agents, such as Cisapride®. PROPULSID®, which
contains Cisapride® monohydrate, is an oral gastrointestinal agent (U.S. Pat. No.
4,962,115) indicated for the symptomatic treatment of adult patients with nocturnal
10 heartburn due to gastroesophageal reflux disease. Other prokinetic agents include, for
example, metoclopramide, domperidone, ondansetron, tropisetron, mosapride and
itopride. Other treatments include administering adenosine-antagonizing
pyrazolopyridine compounds (U.S. Pat. No. 6,214,843); pituitary adenylate cyclase
activating peptide (PACAP) receptor antagonist in combination with a vasoactive
15 intestinal peptide (VIP) receptor antagonist (U.S. Pat. No. 6,911,430); fedotozine (U.S.
Pat. No. 5,362,756); neuropeptides (U.S. Pat. No. 5,929,035); and proteinase-activated
receptor-2 antagonists (U.S. Pat. No. 5,929,035). In extreme cases, ileus has been treated
with surgical intervention to unblock the colon.

 These therapeutic regimens, however, suffer from numerous problems. For
20 instance, PROPULSID® was recently removed from the market due to its potential to
induce cardiac arrhythmias (U.S. Patent No. 6,548,501). Adolor Corporation is presently
in phase III clinical trials for a therapy to treat postoperative ileus using Alvimopan
(Entereg®). Adolor's therapy, however, utilizes opioid receptor antagonists which
merely block the side effects of opiate analgesics, rather than actually relieving the ileus
25 condition. The phase III trials demonstrate marginal efficacy and minimal applicability
for the treatment of ileus, particularly postoperative ileus.

 Furthermore, these prior art methods for treatment of impaired GI motility lack
specificity for different types of impairments, e.g., postoperative ileus or post-partum
ileus. Also, these prior art methods offer no means for the prevention of impaired GI
30 motility, such as that of ileus, gastroparesis and emesis. If impaired GI motility, such as
that of ileus, gastroparesis and emesis, could be prevented or more effectively treated,
hospital stays, recovery times, and medical costs would be significantly decreased with
the additional benefit of minimizing patient discomfort.

5 Drugs which selectively target gut motility to correct gastrointestinal dysfunction caused by postoperative ileus would be ideal candidates for preventing and/or treating post-surgical and post-partum ileus. Such drugs would also be excellent candidates for the treatment of gastroparesis and/or emesis, particularly emesis associated with chemotherapies or other drug induced gastrointestinal dysfunction. Of those, drugs that
10 do not interfere with the effects of opioid analgesics would be of special benefit in that they may be administered simultaneously with drugs for pain management with limited side effects.

 Peptides affecting the release of growth hormone (GH) are now thought to exhibit gastrokinetic or "prokinetic" effects (U.S. Patent No. 6,548,501; Peeters, T. L., J
15 Physiol. Pharmacol., (2003), 54 (supp 4):95-103 and references therein; Trudel, L. et al, J. Physiol. Gastrointest. Liver Physiol., (2002), 282:G948-52). Such growth hormone-releasing peptides, or GHRPs, are also referred to as growth hormone secretagogues (GHS). Exemplary growth hormone-releasing peptides (GHRPs) believed to exhibit prokinetic effects include GHRP-1, GHRP-2 and ghrelin.

20 Ghrelin, a recently discovered orexigenic hormone, is produced as a preprohormone that is proteolytically processed to yield a peptide of the following sequence: H-Gly-Ser-Ser-Phe-Leu-Ser-Pro-Glu-His-Gln-Arg-Val-Gln-Gln-Arg-Lys-Glu-Ser-Lys-Lys-Pro-Pro-Ala-Lys-Leu-Gln-Pro-Arg-NH₂ (Kojima, M. et al., Nature, (1999), 402(6762):656-60). Ghrelin is produced by epithelial cells lining the fundus of the
25 stomach and functions to stimulate appetite; its levels increase prior to a meal and decrease thereafter.

 Ghrelin powerfully stimulates GH secretion from the anterior pituitary gland, mainly at the hypothalamic level, through its interaction with growth hormone secretagogue receptor (GHS-R) both in animals and in humans (Ukkola, O. et al., 2002
30 Ann. Med., (2002), 34:102-8; (Kojima, M. et al., Nature, (1999), 402(6762):656-60).

 The native structures of ghrelin from several mammalian and non-mammalian species are known (Kaiya, H. et al., J. of Biol. Chem., (2001), 276:40441-8 and International Patent Application PCT/JP00/04907 [WO 01/07475]). A core region present

5 in ghrelin is responsible for observed activity at the GHS receptor. The core region comprises the four N-terminal amino acids wherein the serine in the third position is normally modified with n-octanoic acid. In addition to acylation by n-octanoic acid, native ghrelin may also be acylated with n-decanoic acid (Kaiya, H. et al., J. of Biol. Chem., (2001), 276:40441-8).

10 Prior to the discovery that ghrelin is a native ligand for the GHS receptor, it was known that GHRPs controlled the release of growth hormone from the pituitary somatotrops. The hexapeptide His-D-Trp-Ala-Trp-D-Phe-Lys-amide (GHRP-6), was found to release growth hormone from the somatotrops in a dose-dependent manner in several species including man (Bowers, C. Y. et al., Endocrinology, (1984), 114(5):1537-
15 45). Subsequent chemical studies on GHRP-6 led to the identification of other potent, synthetic GHSs such as GHRP-I, GHRP-2 and hexarelin (Cheng, K. et al., Endocrinology, (1989), 124(6):2791-8; Bowers, C. Y., Novel GH-Releasing Peptides, Molecular and Clinical Advances in Pituitary Disorders, Ed: Melmed, S., Endocrine Research and Education, Inc., Los Angeles, CA, USA, (1993), 153-7; and Deghenghi, R. et al., Life Sci.,
20 (1994), 54(18):1321-8). The structures of these compounds are as shown:

GHRP-I	Ala-His-D-(2')-Nal-Ala-Trp-D-Phe-Lys-NH ₂ ;
GHRP-2	D-Ala-D-(2')-Nal-Ala-Trp-D-Nal-Lys-NH ₂ ; and
Hexarelin	His-D-2-MeTrp-Ala-Trp-D-Phe-Lys-NH ₂ .

GHRP-I, GHRP-2, GHRP-6, and hexarelin are classified as synthetic GHSs.

25 A number of recent studies have demonstrated the potential use of GHSs such as ghrelin, GHRP-6 and others to stimulate motor activity in the intestinal tract and to treat conditions such as ileus and emesis. For example, ghrelin and GHRP-6 have been shown to accelerate gastric emptying in rats and mice (Peeters, T. L., J Physiol. Pharmacol., (2003), 54 (supp 4):95-103). In rats, ghrelin has been shown to reverse the
30 delay of gastric emptying in a post-operative ileus model (Peeters, T. L., J Physiol. Pharmacol., (2003), 54 (supp 4):95-103; Trudel, L. et al., J. Physiol. Gastrointest. Liver Physiol., (2002), 282(6):G948-52) and in laparectomized dogs, ghrelin was shown to improve POI in the treated animals (Trudel, L. et al, Peptides, (2003), 24:531-4). In septic

5 mice, ghrelin and GHRP-6 accelerated gastric emptying although had little effect upon increasing transit in the small intestine (De Winter, B. Y. et al., *Neurogastroenterol. Motil.*, (2004), 16:439-46).

In experiments designed to mimic hospitalization conditions for a human patient experiencing POI, laparectomized rats were exposed to opiates as well as ghrelin analog
10 RC-1139 (Poitras, P. et al., *Peptides*, (2005), 26:1598-601). In an assay measuring gastric emptying, RC-1139 was shown to reverse POI in the control and laparectomized rats in the presence of morphine. It is thus believed that ghrelin exhibits gastrokinetic effects without interfering with opiate activity.

Ferrets exposed to the cytotoxic anti-cancer agent cisplatin exhibited significantly
15 reduced occurrences of retching and vomiting following intracerebroventricular administration of ghrelin (Rudd, J. A. et al., *Neurosci. Lett.*, (2006), 392:79-83) thus confirming the ability of ghrelin to reduce emesis in a manner consistent with its role in modulating gastro-intestinal functions. It is thought that ghrelin's role in modulating gastric motility is independent of the GH-secretory activation and may be mediated by
20 the vagal-cholinergic muscarinic pathway (U.S. Patent Application No. 20060025566).

Ghrelin has also been shown to increase gastric emptying in patients with diabetic gastroparesis (Murray, C. D. et al., *Gut*, (2005), 54:1693-8).

It is interesting to note that in the studies referenced above, the ghrelin or ghrelin analog was administered using intraperitoneal (ip), intravenous (iv) or
25 intracerebroventricular (icv) injection. Other disclosures (U.S. Patent No. 6,548,501; U.S. Patent Application No. 20020042419; U.S. Patent Application No. 20050187237; U.S. Patent Application No. 20060025566) report on the oral administration of GHSs as a means to treat impaired gastrointestinal motility.

Very few compounds are known in the art to be useful for treating impaired GI
30 motility and more compounds affecting gastrointestinal motility, e.g. stimulation of motility, would be highly desirable. Compounds affecting gastrointestinal kinetics are useful in the treatment of interruptions in normal GI functions such as ileus and emesis.

SUMMARY OF THE INVENTION

The present invention relates to a method of stimulating gastrointestinal motility in a patient (e.g., a mammal such as a human). The method includes the step of administering a therapeutically effective amount of a peptidyl analog of ghrelin to said patient experiencing or at risk of experiencing gastrointestinal dysmotility.

Various embodiments of this invention relate to use of a peptidyl analog of ghrelin or a pharmaceutically acceptable salt thereof for stimulating gastrointestinal system motility in a patient or in manufacture of a medicament for such stimulating. Various embodiments of this invention relate to use of such an analog or pharmaceutically acceptable salt thereof for treating opioid-related bowel dysfunction in a patient or in manufacture of a medicament for such treating. The peptidyl analog of ghrelin may be:

H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂;

H-Inp-D-2-Nal-D-Trp-Phe-Apc-NH₂;

H-Inp-D-Bal-D-Trp-2-Thi-Apc-NH₂;

H-Inp-D-Bal-D-Trp-Taz-Apc-NH₂;

H-Inp-D-Bal-D-Trp-Phe-Lys-NH₂;

H-Apc-D-1-Nal-D-Trp-2-Thi-Apc-NH₂; or, in the alternative,

H-Apc-D-1-Nal-D-Trp-2-Thi-NH₂.

10 In one aspect, the present invention provides a method of treating
gastrointestinal dysmotility conditions by administering a therapeutically effective
amount of a peptidyl analog of ghrelin or prodrug thereof suitable for attenuating such
gastrointestinal conditions where the analog or prodrug comprises a compound
according to Formula (I), Formula (II) or Formula (III), or a pharmaceutically acceptable
15 salt thereof. The method of the invention is useful for promoting gastric and
gastrointestinal motility in a patient (e.g., a mammal such as a human) and as such, is
useful for treating conditions benefiting from improved gastric and gastrointestinal
motility such as gastroesophageal reflux disease (GERD), IBS, constipation, ileus, emesis,
gastroparesis, colonic pseudo-obstruction, and the like.

20 In another aspect, the invention provides a method of treating ileus,
gastroparesis or emesis by administering a therapeutically effective amount of a
peptidyl analog of ghrelin suitable for attenuating ileus, emesis, or gastroparesis. In yet
another aspect, the condition treated by the method of the invention is ileus, such as
post-operative ileus and the operation may be a gastrointestinal surgery. In yet another
25 aspect of the invention, the condition treated by the method of the invention is emesis,
such as emesis associated with or provoked by the administration of an anti-cancer
chemotherapeutic agent. In yet another aspect, the condition treated by the method of
the invention is gastroparesis, such as diabetic gastroparesis. The diabetes may be Type
I or Type II diabetes.

30 In one aspect, the invention provides a method of treating gastrointestinal
conditions such as GERD, IBS, constipation, ileus, emesis, gastroparesis, and colonic
pseudo-obstruction and the like, by administering a therapeutically effective amount of
a peptidyl ghrelin analog according to the following formula (I):

5 (R²R³)-A¹-A²-A³-A⁴-A⁵-A⁶-A⁷-A⁸-A⁹-A¹⁰-A¹¹-A¹²-A¹³-A¹⁴-A¹⁵-A¹⁶-A¹⁷-A¹⁸-A¹⁹-A²⁰-A²¹-A²²-
A²³-A²⁴-A²⁵-A²⁶-A²⁷-A²⁸-R¹

wherein:

A¹ is Gly, Aib, Ala, β-Ala, or Acc;

A² is Ser, Aib, Act, Ala, Acc, Abu, Ava, Thr, or Val;

10 A³ is Ser, Ser(C(O)-R⁴), Asp(O-R⁸), Asp(NH-R⁹), Cys(S-R¹⁴), Dap(S(O)₂-R¹⁰),
Dab(S(O)₂-R¹¹), Glu(O-R⁶), Glu(NH-R⁷), Thr, Thr(C(O)-R⁵), or HN-CH((CH₂)_n-N(R¹²R¹³))-
C(O);

A⁴ is Phe, Acc, Aic, Cha, 2-Fua, 1-Nal, 2-Nal, 2-Pal, 3-Pal, 4-Pal, hPhe,
(X¹,X²,X³,X⁴,X⁵)Phe, Taz, 2-Thi, 3-Thi, Trp, or Tyr;

15 A⁵ is Leu, Abu, Acc, Aib, Ala, Cha, Ile, hLeu, Nle, Nva, Phe, Tle, or Val;

A⁶ is Ser, Abu, Acc, Act, Aib, Ala, Gly, Thr, or Val;

A⁷ is Pro, Dhp, Dmt, 3-Hyp, 4-Hyp, Inc, Ktp, Oic, Pip, Thz, Tic, or deleted;

A⁸ is Glu, Acc, Aib, Arg, Asn, Asp, Dab, Dap, Gln, Lys, Orn, HN-CH((CH₂)_n-
N(R¹²R¹³))-C(O), or deleted;

20 A⁹ is His, Apc, Aib, Acc, 2-Fua, 2-Pal, 3-Pal, 4-Pal, Taz, 2-Thi, 3-Thi,
(X¹,X²,X³,X⁴,X⁵-)Phe or deleted;

A¹⁰ is Gln, Acc, Aib, Asn, Asp, Glu, or deleted;

A¹¹ is Arg, Apc, hArg, Dab, Dap, Lys, Orn, HN-CH((CH₂)_n-N(R¹²R¹³))-C(O), or
deleted;

25 A¹² is Val, Abu, Acc, Aib, Ala, Cha, Nva, Gly, Ile, Leu, Nle, Tle, or deleted;

A¹³ is Gln, Acc, Aib, Asn, Asp, Glu, or deleted;

A¹⁴ is Gln, Acc, Aib, Asn, Asp, Glu, or deleted;

A¹⁵ is Arg, hArg, Acc, Aib, Apc, Dab, Dap, Lys, Orn, HN-CH((CH₂)_n-N(R¹²R¹³))-
C(O), or deleted;

30 A¹⁶ is Lys, Acc, Aib, Apc, Arg, hArg, Dab, Dap, Orn, HN-CH((CH₂)_n-N(R¹²R¹³))-
C(O), or deleted;

A¹⁷ is Glu, Arg, Asn, Asp, Dab, Dap, Gln, Lys, Orn, HN-CH((CH₂)_n-N(R¹²R¹³))-
C(O), or deleted;

- 5 A¹⁸ is Ser, Abu, Acc, Act, Aib, Ala, Thr, Val, or deleted;
 A¹⁹ is Lys, Acc, Aib, Apc, Arg, hArg, Dab, Dap, Orn, HN-CH((CH₂)_n-N(R¹²R¹³))-
 C(O), or deleted;
 A²⁰ is Lys, Acc, Aib, Apc, Arg, hArg, Dab, Dap, Orn, HN-CH((CH₂)_n-N(R¹²R¹³))-
 C(O), or deleted;
- 10 A²¹ is Pro, Dhp, Dmt, 3-Hyp, 4-Hyp, Inc, Ktp, Oic, Pip, Thz, Tic, or deleted;
 A²² is Pro, Dhp, Dmt, 3-Hyp, 4-Hyp, Inc, Ktp, Oic, Pip, Thz, Tic, or deleted;
 A²³ is Abu, Acc, Act, Aib, Ala, Apc, Gly, Nva, Val, or deleted;
 A²⁴ is Lys, Acc, Aib, Apc, Arg, hArg, Dab, Dap, Orn, HN-CH((CH₂)_n-N(R¹²R¹³))-
 C(O), or deleted;
- 15 A²⁵ is Leu, Abu, Acc, Aib, Ala, Cha, Ile, hLeu, Nle, Nva, Phe, Tle, Val, or deleted;
 A²⁶ is Gln, Aib, Asn, Asp, Glu, or deleted;
 A²⁷ is Pro, Dhp, Dmt, 3-Hyp, 4-Hyp, Inc, Ktp, Oic, Pip, Thz, Tic, or deleted;
 A²⁸ is Acc, Aib, Apc, Arg, hArg, Dab, Dap, Lys, Orn, HN-CH((CH₂)_n-N(R¹²R¹³))-
 C(O), or deleted;
- 20 R¹ is -OH, -NH₂, -(C₁-C₃₀)alkoxy, or NH-X⁶-CH₂-Z⁰, wherein X⁶ is a (C₁-C₁₂)alkyl,
 (C₂-C₁₂)alkenyl, and Z⁰ is -H, -OH, -CO₂H or -C(O)-NH₂;
 R² and R³ each is, independently for each occurrence, H, (C₁-C₂₀)alkyl
 or (C₁-C₂₀)acyl;
 R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹ and R¹⁴ each is, independently for each occurrence,
 (C₁-C₄₀)alkyl, (C₂-C₄₀)alkenyl, substituted (C₁-C₄₀) alkyl, substituted (C₂-C₄₀) alkenyl,
 alkylaryl, substituted alkylaryl, aryl or substituted aryl;
- 25 R¹² and R¹³ each is, independently for each occurrence, H, (C₁-C₄₀)alkyl, (C₁-
 C₄₀)acyl, (C₁-C₃₀)alkylsulfonyl, or -C(NH)-NH₂, wherein when R¹² is (C₁-C₄₀)acyl, (C₁-
 C₃₀)alkylsulfonyl, or -C(NH)-NH₂, then R¹³ is H or (C₁-C₄₀)alkyl;
- 30 n is, independently for each occurrence, 1, 2, 3, 4 or 5;
 X¹, X², X³, X⁴, and X⁵ each is, independently for each occurrence, H, F, Cl, Br, I,
 (C₁₋₁₀)alkyl, substituted (C₁₋₁₀)alkyl, aryl, substituted aryl, OH, NH₂, NO₂, or CN;

5 provided that the peptide contains at least one amino acid selected from the groups consisting of:

A^2 is Aib, Acc, or Act;

A^3 is Dap(S(O)₂-R¹⁰), Dab(S(O)₂-R¹¹), Glu(NH-Hexyl), or Cys(S-Decyl);

A^5 is Abu, Acc, Aib, Ala, Cha, Ile, hLeu, Nle, Nva, Phe, Tle, or Val;

10 A^6 is Abu, Acc, Act, Aib, Ala, Gly, Thr or Val;

A^7 is Dhp, Dmt, 3-Hyp, 4-Hyp, Inc, Ktp, Oic, Pip, Thz or Tic;

A^8 is Acc, Aib, Arg, Asn, Asp, Dab, Dap, Gln, Lys, Orn, or HN-CH((CH₂)_n-N(R¹²R¹³))-C(O);

A^9 is Aib, Acc, Apc, 2-Fua, 2-Pal, 3-Pal, 4-Pal, Taz, 2-Thi, 3-Thi, or (X¹,X²,X³,X⁴,X⁵-
15)Phe; and

A^{10} is Acc, Aib, Asn, Asp, or Glu;

and further provided that the peptide is not (Lys⁸)hGhrelin(1-8)-NH₂ or (Arg⁸)hGhrelin(1-8)-NH₂; or a pharmaceutically acceptable salt thereof.

In another aspect, the invention provides a preferred group of compounds
20 according to formula (I), wherein:

A^1 is Gly or Aib;

A^2 is Ser, Aib, A5c, Act, or Ava;

A^3 is Ser(C(O)-R⁴), Glu(O-R⁶), Glu(NH-R⁷), Dap(S(O)₂-R¹⁰), or Dab(S(O)₂-R¹¹);

A^4 is Phe;

25 A^5 is Leu, Acc, Aib, Cha, or hLeu;

A^6 is Ser, Abu, Act, Aib, or Thr;

A^7 is Pro, Dhp, Dmt, 4-Hyp, Ktp, Pip, Tic, or Thz;

A^8 is Glu or Aib;

A^9 is His, Aib, Apc, 2-Fua, 2-Pal, 3-Pal, 4-Pal, Taz, or 2-Thi;

30 A^{10} is Gln or Aib;

A^{11} is Arg;

A^{12} is Aib, Val or Acc;

A^{13} is Gln;

- 5 A¹⁴ is Gln;
 A¹⁵ is Arg or Orn;
 A¹⁶ is Lys or Apc;
 A¹⁷ is Glu;
 A¹⁸ is Ser;
- 10 A¹⁹ is Lys;
 A²⁰ is Lys;
 A²¹ is Pro;
 A²² is Pro;
 A²³ is Ala;
- 15 A²⁴ is Lys;
 A²⁵ is Leu;
 A²⁶ is Gln;
 A²⁷ is Pro; and
 A²⁸ is Arg, or a pharmaceutically acceptable salt thereof.
- 20 In yet another aspect, the invention provides a preferred group of compounds according to formula (I), wherein:
 R² and R³ each is, independently, H, Acyl, n-butyryl, isobutyryl, or n-octanoyl;
 R⁴ is octyl;
 R⁶ is hexyl;
- 25 R⁷ is hexyl;
 R¹⁰ is octyl; and
 R¹¹ is octyl, or a pharmaceutically acceptable salt thereof, wherein Acc is, independently for each occurrence, A5c or A6c.
- 30 In yet another aspect, the invention provides a preferred group of compounds according to formula (I), where the compound is:
- | | |
|--|-------------|
| (Dap ³ (octanesulfonyl))hGhrelin(1-28)-NH ₂ ; | Example #75 |
| (Aib ² , A6c ⁵)hGhrelin(1-28)-NH ₂ ; | Example #96 |
| (A6c ⁵)hGhrelin(1-28)-NH ₂ ; | |

5	(Aib ^{2,6})hGhrelin(1-28)-NH ₂ ;	Example #108
	(Aib ² , A5c ¹²)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , A5c ¹² , Orn ¹⁵)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Act ⁶)hGhrelin(1-28)-NH ₂ ;	
10	(Aib ² , 3-Pal ⁹)hGhrelin(1-28)-NH ₂ ;	Example #29
	(Aib ² , Dmt ⁷)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Thz ⁷)hGhrelin(1-28)-NH ₂ ;	
	(A5c ²)hGhrelin(1-28)-NH ₂ ;	Example #52
	(Act ²)hGhrelin(1-28)-NH ₂ ;	Example #94
15	(Aib ² , A5c ⁵)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , A6c ⁵)hGhrelin(1-28)-NH ₂ ;	
	(Aib ^{2,5})hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , hLeu ⁵)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Cha ⁵)hGhrelin(1-28)-NH ₂ ;	
20	(Aib ^{2,6})hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Act ⁶)hGhrelin(1-28)-NH ₂ ;	Example #114
	(Aib ² , Thr ⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Abu ⁶)hGhrelin(1-28)-NH ₂ ;	Example #88
	(Aib ² , 4-Hyp ⁷)hGhrelin(1-28)-NH ₂ ;	Example #36
25	(Aib ² , Thz ⁷)hGhrelin(1-28)-NH ₂ ;	Example #54
	(Aib ² , Pip ⁷)hGhrelin(1-28)-NH ₂ ;	Example #65
	(Aib ² , Dhp ⁷)hGhrelin(1-28)-NH ₂ ;	Example #44
	(Aib ² , Ktp ⁷)hGhrelin(1-28)-NH ₂ ;	
	(Aib ^{2,8})hGhrelin(1-28)-NH ₂ ;	Example #49
30	(Aib ² , 2-Pal ⁹)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , 3-Pal ⁹)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , 4-Pal ⁹)hGhrelin(1-28)-NH ₂ ;	Example #55
	(Aib ² , Taz ⁹)hGhrelin(1-28)-NH ₂ ;	Example #27

5	(Aib ² , 2-Thi ⁹)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , 2-Fua ⁹)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Apc ⁹)hGhrelin(1-28)-NH ₂ ;	
	(Aib ^{2,9})hGhrelin(1-28)-NH ₂ ;	
	(Aib ^{2,10})hGhrelin(1-28)-NH ₂ ;	Example #48
10	(Aib ² , Tic ⁷)hGhrelin(1-28)-NH ₂ ;	Example #53
	(Aib ⁶)hGhrelin(1-28)-NH ₂ ;	
	(A5c ⁵)hGhrelin(1-28)-NH ₂ ;	
	(A6c ⁵)hGhrelin(1-28)-NH ₂ ;	Example #102
	(Act ⁶)hGhrelin(1-28)-NH ₂ ;	
15	(3-Pal ⁹)hGhrelin(1-28)-NH ₂ ;	Example #32
	(Dmt ⁷)hGhrelin(1-28)-NH ₂ ;	
	(Thz ⁷)hGhrelin(1-28)-NH ₂ ;	
	(Aib ⁵)hGhrelin(1-28)-NH ₂ ;	
	(hLeu ⁵)hGhrelin(1-28)-NH ₂ ;	
20	(Cha ⁵)hGhrelin(1-28)-NH ₂ ;	
	(Thr ⁶)hGhrelin(1-28)-NH ₂ ;	
	(Abu ⁶)hGhrelin(1-28)-NH ₂ ;	
	(4-Hyp ⁷)hGhrelin(1-28)-NH ₂ ;	
	(Pip ⁷)hGhrelin(1-28)-NH ₂ ;	
25	(Dhp ⁷)hGhrelin(1-28)-NH ₂ ;	
	(Ktp ⁷)hGhrelin(1-28)-NH ₂ ;	
	(Aib ⁸)hGhrelin(1-28)-NH ₂ ;	Example #10
	(2-Pal ⁹)hGhrelin(1-28)-NH ₂ ;	
	(3-Pal ⁹)hGhrelin(1-28)-NH ₂ ;	
30	(4-Pal ⁹)hGhrelin(1-28)-NH ₂ ;	
	(Taz ⁹)hGhrelin(1-28)-NH ₂ ;	
	(2-Thi ⁹)hGhrelin(1-28)-NH ₂ ;	Example #26
	(2-Fua ⁹)hGhrelin(1-28)-NH ₂ ;	

- 5 (Apc⁹)hGhrelin(1-28)-NH₂;
 (Aib⁹)hGhrelin(1-28)-NH₂;
 (Aib¹⁰)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), A6c⁵)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), A6c⁵)hGhrelin(1-28)-NH₂;
- 10 (Aib^{2,6}, Dap³(octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), A5c¹²)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), Act⁶)hGhrelin(1-28)-NH₂;
- 15 (Aib², Dap³(octanesulfonyl), 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), Dmt⁷)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), Thz⁷)hGhrelin(1-28)-NH₂;
 (A5c², Dap³(octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Act², Dap³(octanesulfonyl))hGhrelin(1-28)-NH₂;
- 20 (Aib², Dap³(octanesulfonyl), A5c⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,5}, Dap³(octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), hLeu⁵)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), Cha⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, Dap³(octanesulfonyl))hGhrelin(1-28)-NH₂;
- 25 (Aib², Dap³(octanesulfonyl), Thr⁶)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), Abu⁶)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), 4-Hyp⁷)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), Pip⁷)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), Dhp⁷)hGhrelin(1-28)-NH₂;
- 30 (Aib², Dap³(octanesulfonyl), Ktp⁷)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Dap³(octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), 2-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), 3-Pal⁹)hGhrelin(1-28)-NH₂;

- 5 (Aib², Dap³(octanesulfonyl), 4-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), Taz⁹)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), 2-Fua⁹)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(octanesulfonyl), Apc⁹)hGhrelin(1-28)-NH₂;
 10 (Aib^{2,9}, Dap³(octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Dap³(octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), A6c⁵)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), Aib⁶)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), A5c¹²)hGhrelin(1-28)-NH₂;
 15 (Dap³(octanesulfonyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), Act⁶)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), Dmt⁷)hGhrelin(1-28)-NH₂;
 20 (Dap³(octanesulfonyl), Thz⁷)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), A5c⁵)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), Aib⁵)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), hLeu⁵)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), Cha⁵)hGhrelin(1-28)-NH₂;
 25 (Dap³(octanesulfonyl), Thr⁶)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), Abu⁶)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), 4-Hyp⁷)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), Pip⁷)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), Dhp⁷)hGhrelin(1-28)-NH₂;
 30 (Dap³(octanesulfonyl), Ktp⁷)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), Aib⁸)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), 2-Pal⁹)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), 3-Pal⁹)hGhrelin(1-28)-NH₂;

- 5 (Dap³(octanesulfonyl), 4-Pal⁹)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), Taz⁹)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), 2-Fua⁹)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), Apc⁹)hGhrelin(1-28)-NH₂;
 10 (Dap³(octanesulfonyl), Aib⁹)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), Aib¹⁰)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Dab³(octanesulfonyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², A6c⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 15 (A6c⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Act⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², 3-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Dmt⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 20 (Aib², Thz⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², A5c⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,5}, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², hLeu⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Cha⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 25 (Aib^{2,6}, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Thr⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Abu⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², 4Hyp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Pip⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 30 (Aib², Dhp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Ktp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², 2-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;

- 5 (Aib², 3-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², 4-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Taz⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², 2-Thi⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², 2-Fua⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 10 (Aib², Apc⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,9}, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Dap³(octanesulfonyl), A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Dab³(octanesulfonyl), A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 15 (Aib², A6c⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (A6c⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Act⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², 3-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 20 (Aib², Dmt⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Thz⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², A5c^{5,12}, Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,5}, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², hLeu⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 25 (Aib², Cha⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Thr⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Abu⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², 4-Hyp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 30 (Aib², Pip⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Dhp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Ktp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;

- 5 (Aib², 2-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², 3-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², 4-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Taz⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², 2-Thi⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 10 (Aib², 2-Fua⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Apc⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,9}, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (A6c⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 15 (Aib⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Act⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (3-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Dmt⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Thz⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 20 (A5c⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (hLeu⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Cha⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 25 (Thr⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Abu⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (4Hyp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Pip⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Dhp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 30 (Ktp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib⁸, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (2-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (3-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;

- 5 (4-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Taz⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (2-Thi⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (2-Fua⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Apc⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 10 (Aib⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib¹⁰, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (A5c⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Act⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 15 (3-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Dmt⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Thz⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (hLeu⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 20 (Cha⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Thr⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Abu⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (4-Hyp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Pip⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 25 (Dhp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Ktp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib⁸, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (2-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (3-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 30 (4-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Taz⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (2-Thi⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (2-Fua⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;

5	(Apc ⁹ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ; (Aib ⁹ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ; (Aib ¹⁰ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu ³ (NH-hexyl), A6c ⁵)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), A6c ⁵)hGhrelin(1-28)-NH ₂ ;	
10	(Aib ^{2,6} , Glu ³ (NH-hexyl))hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu ³ (NH-hexyl), Act ⁶)hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu ³ (NH-hexyl), 3-Pal ⁹)hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu ³ (NH-hexyl), Dmt ⁷)hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu ³ (NH-hexyl), Thz ⁷)hGhrelin(1-28)-NH ₂ ;	
15	(Aib ² , Glu ³ (NH-hexyl), A5c ⁵)hGhrelin(1-28)-NH ₂ ; (Aib ^{2,5} , Glu ³ (NH-hexyl))hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu ³ (NH-hexyl), hLeu ⁵)hGhrelin(1-28)-NH ₂ ; (Aib ² , Cha ⁵)hGhrelin(1-28)-NH ₂ ;	Example #81
20	(Aib ^{2,6} , Glu ³ (NH-hexyl))hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu ³ (NH-hexyl), Thr ⁶)hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu ³ (NH-hexyl), Abu ⁶)hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu ³ (NH-hexyl), 4Hyp ⁷)hGhrelin(1-28)-NH ₂ ;	Example #79
25	(Aib ² , Glu ³ (NH-hexyl), Pip ⁷)hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu ³ (NH-hexyl), Dhp ⁷)hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu ³ (NH-hexyl), Ktp ⁷)hGhrelin(1-28)-NH ₂ ;	
	(Aib ^{2,8} , Glu ³ (NH-hexyl))hGhrelin(1-28)-NH ₂ ;	Example #56
	(Aib ² , Glu ³ (NH-hexyl), 2-Pal ⁹)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), 3-Pal ⁹)hGhrelin(1-28)-NH ₂ ;	Example #80
	(Aib ² , Glu ³ (NH-hexyl), 4-Pal ⁹)hGhrelin(1-28)-NH ₂ ;	Example #85
30	(Aib ² , Glu ³ (NH-hexyl), Taz ⁹)hGhrelin(1-28)-NH ₂ ;	Example #43
	(Aib ² , Glu ³ (NH-hexyl), 2-Thi ⁹)hGhrelin(1-28)-NH ₂ ;	Example #51
	(Aib ² , Glu ³ (NH-hexyl), 2-Fua ⁹)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), Apc ⁹)hGhrelin(1-28)-NH ₂ ;	

5	(Aib ^{2,9} , Glu ³ (NH-hexyl))hGhrelin(1-28)-NH ₂ ; (Aib ^{2,10} , Glu ³ (NH-hexyl))hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), Aib ⁶)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), A5c ⁵)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), Act ⁶)hGhrelin(1-28)-NH ₂ ;	Example #59
10	(Glu ³ (NH-hexyl), 3-Pal ⁹)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), Dmt ⁷)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), Thz ⁷)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), Aib ⁵)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), hLeu ⁵)hGhrelin(1-28)-NH ₂ ;	
15	(Glu ³ (NH-hexyl), Cha ⁵)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), Thr ⁶)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), Abu ⁶)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), 4-Hyp ⁷)hGhrelin(1-28)-NH ₂ ;	Example #82
20	(Glu ³ (NH-hexyl), Pip ⁷)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), Dhp ⁷)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), Ktp ⁷)hGhrelin(1-28)-NH ₂ ;	
25	(Glu ³ (NH-hexyl), Aib ⁸)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), 2-Pal ⁹)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), 3-Pal ⁹)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), 4-Pal ⁹)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), Taz ⁹)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), 2-Thi ⁹)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), 2-Fua ⁹)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), Apc ⁹)hGhrelin(1-28)-NH ₂ ;	Example #35
30	(Glu ³ (NH-hexyl), Aib ⁹)hGhrelin(1-28)-NH ₂ ; (Glu ³ (NH-hexyl), Aib ¹⁰)hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu ³ (NH-hexyl), A6c ⁵ , A5c ¹² , Orn ¹⁵)hGhrelin(1-28)-NH ₂ ; (A6c ⁵ , Glu ³ (NH-hexyl), A5c ¹² , Orn ¹⁵)hGhrelin(1-28)-NH ₂ ;	

- 5 (Aib^{2,6}, Glu³(NH-hexyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), Act⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), 3-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), Dmt⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), Thz⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 10 (Aib², Glu³(NH-hexyl), A5c⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,5}, Glu³(NH-hexyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², hLeu⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), Cha⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, Glu³(NH-hexyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 15 (Aib², Glu³(NH-hexyl), Thr⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), Abu⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), 4-Hyp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), Pip⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), Dhp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 20 (Aib², Glu³(NH-hexyl), Ktp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu³(NH-hexyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), 2-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), 3-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), 4-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 25 (Aib², Glu³(NH-hexyl), Taz⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), 2-Thi⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), 2-Fua⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), Apc⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,9}, Glu³(NH-hexyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 30 (Aib^{2,12}, Glu³(NH-hexyl), 4-Pal⁹, Orn¹⁵)hGhrelin(1-28)-NH₂; Example #89
 (Aib^{2,10}, Glu³(NH-hexyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), A6c⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Glu³(NH-hexyl), A6c⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;

5	(Aib ^{2,6} , Glu ³ (NH-hexyl), A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), Act ⁶ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), 3-Pal ⁹ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), Dmt ⁷ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), Thz ⁷ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
10	(Aib ² , Glu ³ (NH-hexyl), A5c ^{5,12} , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ^{2,5} , Glu ³ (NH-hexyl), A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), hLeu ⁵ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), Cha ⁵ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ^{2,6} , Glu ³ (NH-hexyl), A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
15	(Aib ² , Glu ³ (NH-hexyl), Thr ⁶ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), Abu ⁶ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), 4-Hyp ⁷ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), Pip ⁷ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), Dhp ⁷ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
20	(Aib ² , Glu ³ (NH-hexyl), Ktp ⁷ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ^{2,8} , Glu ³ (NH-hexyl), A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), 2-Pal ⁹ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), 3-Pal ⁹ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), 4-Pal ⁹ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
25	(Aib ² , Glu ³ (NH-hexyl), Taz ⁹ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), 2-Thi ⁹ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), 2-Fua ⁹ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ² , Glu ³ (NH-hexyl), Apc ⁹ , A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Aib ^{2,9} , Glu ³ (NH-hexyl), A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
30	(Aib ^{2,10} , Glu ³ (NH-hexyl), A5c ¹² , Apc ¹⁶)hGhrelin(1-28)-NH ₂ ;	
	(Glu ³ (O-hexyl))hGhrelin(1-28)-NH ₂ ;	Example #21
	(Aib ²)hGhrelin(1-28)-NH ₂ ;	Example #25
	(Glu ³ (NH-hexyl))hGhrelin(1-28)-NH ₂ ;	Example #76

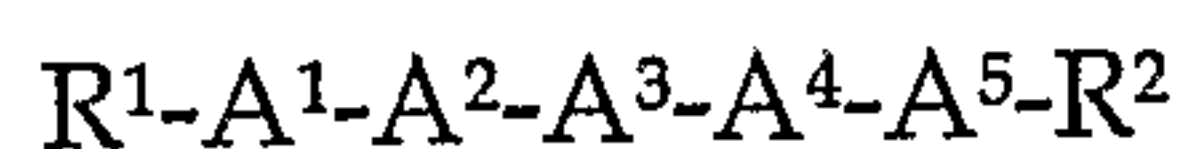
5	(Aib ² , Glu ³ (O-hexyl))hGhrelin(1-28)-NH ₂ ; (Aib ¹ , Glu ³ (O-hexyl))hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu ³ (NH-hexyl))hGhrelin(1-28)-NH ₂ ; (Dap ³ (1-octanesulfonyl))hGhrelin(1-28)-NH ₂ ; (Aib ² , Dap ³ (1-octanesulfonyl))hGhrelin(1-28)-NH ₂ ;	Example #8
10	(Aib ¹ , Dap ³ (1-octanesulfonyl))hGhrelin(1-28)-NH ₂ ; (Ava ² , Dap ³ (1-octanesulfonyl))hGhrelin(2-28)-NH ₂ ; (Ac-Gly ¹)hGhrelin(1-5)-NH ₂ ; (Ac-Gly ¹)hGhrelin(1-6)-NH ₂ ; (Ac-Gly ¹)hGhrelin(1-7)-NH ₂ ;	
15	(Ac-Gly ¹ , Aib ²)hGhrelin(1-28)-NH ₂ ; (Ac-Gly ¹ , Aib ² , Glu ³ (NH-hexyl))hGhrelin(1-5)-NH ₂ ; (Ac-Gly ¹ , Aib ² , Glu ³ (NH-hexyl))hGhrelin(1-6)-NH ₂ ; (Ac-Gly ¹ , Aib ² , Glu ³ (NH-hexyl))hGhrelin(1-7)-NH ₂ ; (Ac-Gly ¹ , Aib ² , Glu ³ (NH-hexyl), Arg ⁸)hGhrelin(1-8)-NH ₂ ;	Example #63
20	(Ac-Gly ¹ , Aib ² , Glu ³ (NH-hexyl), Lys ⁸)hGhrelin(1-8)-NH ₂ ; (n-butyryl-Gly ¹)hGhrelin(1-28)-NH ₂ ; (isobutyryl-Gly ¹)hGhrelin(1-28)-NH ₂ ; (n-octanoyl-Gly ¹)hGhrelin(1-28)-NH ₂ ; Cys ³ (S(CH ₂) ₉ CH ₃)hGhrelin(1-28)-NH ₂ ;	Example #95 Example #99 Example #92 Example #61
25	(Lys ⁵)hGhrelin(1-28)-NH ₂ ; (Aib ² , Ser ³)hGhrelin(1-28)-NH ₂ ; (Aib ^{2,6} , Ser ³)hGhrelin(1-28)-NH ₂ ; (Aib ² , Ser ³ , 3-Pal ⁹)hGhrelin(1-28)-NH ₂ ; (Aib ² , Ser ³ , Thz ⁷)hGhrelin(1-28)-NH ₂ ;	Example #42
30	(Aib ² , Ser ³ , Cha ⁵)hGhrelin(1-28)-NH ₂ ; (Aib ² , Ser ³ , Abu ⁶)hGhrelin(1-28)-NH ₂ ; (Aib ² , Ser ³ , 4-Hyp ⁷)hGhrelin(1-28)-NH ₂ ; (Aib ² , Ser ³ , Taz ⁹)hGhrelin(1-28)-NH ₂ ;	

- 5 (Aib², Ser³, Dhp⁷)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Ser³)hGhrelin(1-28)-NH₂;
 (Aib², Ser³, Pip⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Ser³)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Ser³)hGhrelin(1-28)-NH₂;
- 10 (n-butyryl-Gly¹, Aib², Ser³)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Ser³)hGhrelin(1-28)-NH₂;
 (Aib², Ser³, Tic⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Ser³, Arg⁸)hGhrelin(1-28)-NH₂;
 (Ser³, Aib⁸)hGhrelin(1-28)-NH₂;
- 15 (Ser³, Taz⁹)hGhrelin(1-28)-NH₂;
 (Ser³, 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Ser³, 4-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Ser³, 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Ser³, 2-Thi⁹)hGhrelin(1-28)-NH₂;
- 20 (Ser³, 4-Hyp⁷)hGhrelin(1-28)-NH₂;
 (Aib², Ser³, Tic⁷)hGhrelin(1-28)-NH₂;
 (Aib², Thr³)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, Thr³)hGhrelin(1-28)-NH₂;
 (A5c⁵, Thr³)hGhrelin(1-28)-NH₂;
- 25 (Aib², Thr³, 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, Thz⁷)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, Cha⁵)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, Abu⁶)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, 4-Hyp⁷)hGhrelin(1-28)-NH₂;
- 30 (Aib², Thr³, Taz⁹)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, Dhp⁷)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Thr³)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, Pip⁷)hGhrelin(1-28)-NH₂;

- 5 (Ac-Gly¹, Aib^{2,10}, Thr³)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Thr³)hGhrelin(1-28)-NH₂;
 (n-butyryl-Gly¹, Aib², Thr³)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Thr³)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, Tic⁷)hGhrelin(1-28)-NH₂;
 10 (Ac-Gly¹, Aib², Thr³, Arg⁸)hGhrelin(1-28)-NH₂;
 (Thr³, Aib⁸)hGhrelin(1-28)-NH₂;
 (Thr³, Taz⁹)hGhrelin(1-28)-NH₂;
 (Thr³, 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Thr³, 4-Pal⁹)hGhrelin(1-28)-NH₂;
 15 (Aib², Thr³, 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Thr³, 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Thr³, 4-Hyp⁷)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, Tic⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu³(NH-hexyl))hGhrelin(1-28)-NH₂; or
 20 or pharmaceutically acceptable salts thereof.

In one aspect, the invention provides a method of treating gastrointestinal conditions such as gastroesophageal reflux disease, IBS, constipation, ileus, emesis, gastroparesis, and colonic pseudo-obstruction and the like, by administering a therapeutically effective amount of a peptidyl ghrelin analog according to the following

25 formula (II):



wherein:

- A¹ is Aib, Apc or Inp;
 A² is D-Bal, D-Bip, D-Bpa, D-Dip, D-1-Nal, D-2-Nal, D-Ser(Bzl), or D-Trp;
 30 A³ is D-Bal, D-Bip, D-Bpa, D-Dip, D-1-Nal, D-2-Nal, D-Ser(Bzl), or D-Trp;
 A⁴ is 2-Fua, Orn, 2-Pal, 3-Pal, 4-Pal, Pff, Phe, Pim, Taz, 2-Thi, 3-Thi, Thr(Bzl);
 A⁵ is Apc, Dab, Dap, Lys, Orn, or deleted;

5 R¹ is hydrogen, (C₁₋₆)alkyl, (C₅₋₁₄)aryl, (C₁₋₆)alkyl(C₅₋₁₄)aryl, (C₃₋₈)cycloalkyl, or (C₂₋₁₀)acyl; and

 R² is OH or NH₂;

provided that when A⁵ is Dab, Dap, Lys, or Orn, then:

 A² is D-Bip, D-Bpa, D-Dip or D-Bal; or

10 A³ is D-Bip, D-Bpa, D-Dip or D-Bal; or

 A⁴ is 2-Thi, 3-Thi, Taz, 2-Fua, 2-Pal, 3-Pal, 4-Pal, Orn, Thr(Bzl), or Pff;

when A⁵ is deleted, then:

 A³ is D-Bip, D-Bpa, or D-Dip; or

 A⁴ is 2-Fua, Pff, Taz, or Thr(Bzl); or

15 A¹ is Apc when

 A² is D-Bip, D-Bpa, D-Dip or D-Bal; or

 A³ is D-Bip, D-Bpa, D-Dip or D-Bal; or

 A⁴ is 2-Thi, 3-Thi, Orn, 2-Pal, 3-Pal or 4-Pal;

or a pharmaceutically acceptable salt thereof.

20 In yet another aspect, the invention provides a preferred compound of formula (II), wherein:

 A¹ is Aib, Apc or H-Inp;

 A² is D-Bal, D-Bip, D-Bpa, D-Dip, D-1-Nal, D-2-Nal, D-Ser(Bzl), or D-Trp;

 A³ is D-Bal, D-Bpa, D-Dip, D-1-Nal, D-2-Nal, or D-Trp;

25 A⁴ is Orn, 3-Pal, 4-Pal, Pff, Phe, Pim, Taz, 2-Thi, or Thr(Bzl); and

 A⁵ is Apc, Lys, or deleted;

or a pharmaceutically acceptable salt thereof.

In yet another aspect of the immediately foregoing group of compounds, the invention provides a preferred compound of formula (II), wherein:

30 A¹ is Apc or H-Inp;

 A² is D-Bal, D-Bip, D-1-Nal, or D-2-Nal;

 A³ is D-Bal, D-1-Nal, D-2-Nal, or D-Trp;

 A⁴ is 3-Pal, 4-Pal, Pff, Phe, Pim, Taz, 2-Thi, or Thr(Bzl); and

5 or a pharmaceutically acceptable salt thereof.

In yet another aspect, the invention provides a preferred group of compounds according to formula (I), where the compound is:

	Inp-D-2-Nal-D-Trp-Phe-Lys-NH ₂	Example 2
	H-Inp-D-1-Nal-D-Trp-3-Pal-Lys-NH ₂ ;	Example #50
10	H-Inp-D-2-Nal-D-Trp-4-Pal-Lys-NH ₂ ;	
	H-Inp-D-2-Nal-D-Trp-Orn-Lys-NH ₂ ;	Example #116
	H-Inp-D-Bip-D-Trp-Phe-Lys-NH ₂ ;	Example #66
	H-Inp-D-2-Nal-D-Trp-Thr(Bzl)-Lys-NH ₂ ;	
	H-Inp-D-2-Nal-D-Trp-Pff-Lys-NH ₂ ;	Example #100
15	H-Inp-D-2-Nal-D-Trp-2-Thi-Lys-NH ₂ ;	Example #15
	H-Inp-D-2-Nal-D-Trp-Taz-Lys-NH ₂ ;	Example #37
	H-Inp-D-Dip-D-Trp-Phe-Lys-NH ₂ ;	Example #105
	H-Inp-D-Bpa-D-Trp-Phe-Lys-NH ₂ ;	Example #109
	H-Inp-D-2-Nal-D-Bpa-Phe-Lys-NH ₂ ;	Example #118
20	H-Inp-D-2-Nal-D-Trp-3-Pal-NH ₂ ;	Example #93
	H-Inp-D-2-Nal-D-Trp-4-Pal-NH ₂ ;	Example #112
	H-Inp-D-1-Nal-D-Trp-3-Pal-NH ₂ ;	Example #97
	H-Inp-D-Bip-D-Trp-Phe-NH ₂ ;	Example #98
	H-Inp-D-2-Nal-D-Trp-Thr(Bzl)-NH ₂ ;	Example #87
25	H-Inp-D-2-Nal-D-Trp-Pff-NH ₂ ;	Example #103
	H-Inp-D-2-Nal-D-Trp-2-Thi-NH ₂ ;	Example #84
	H-Inp-D-2-Nal-D-Trp-Taz-NH ₂ ;	Example #90
	H-Inp-D-Dip-D-Trp-Phe-NH ₂ ;	Example #111
	H-Inp-D-2-Nal-D-Dip-Phe-NH ₂ ;	Example #110
30	H-Inp-D-Bal-D-Trp-Phe-NH ₂ ;	Example #78
	H-Inp-D-2-Nal-D-Bal-Phe-NH ₂ ;	Example #101
	H-Inp-D-2-Nal-D-Trp-3-Pal-Lys-NH ₂ ;	Example #71
	H-Inp-D-Trp-D-2-Nal(Ψ)-Pim;	Example #115

5	H-Inp-D-Bal-D-Trp-2-Thi-Lys-NH ₂ ;	Example #12
	H-Inp-D-Bal-D-Trp-Phe-Lys-NH ₂ ;	Example #5
	H-Inp-D-1-Nal-D-Trp-2-Thi-Lys-NH ₂ ;	Example #3
	H-Inp-D-2-Nal-D-Trp-Phe-Apc-NH ₂ ;	Example #28
	H-Inp-D-1-Nal-D-Trp-Phe-Apc-NH ₂ ;	Example #6
10	H-Inp-D-Bal-D-Trp-Phe-Apc-NH ₂ ;	Example #19
	H-Apc-D-2-Nal-D-Trp-Phe-Lys-NH ₂ ;	Example #11
	H-Apc-D-1-Nal-D-Trp-2-Thi-Lys-NH ₂ ;	Example #1
	H-Inp-D-1-Nal-D-Trp-2-Thi-NH ₂ ;	Example #39
	H-Apc-D-1-Nal-D-Trp-Phe-NH ₂ ;	Example #31
15	H-Inp-D-2-Nal-D-Trp(Ψ)-Pim;	Example #113
	H-Inp-D-1-Nal-D-Trp(Ψ)-Pim;	Example #107
	H-Inp-D-Bal-D-Trp(Ψ)-Pim;	Example #106
	H-Aib-D-Ser(Bzl)-D-Trp(Ψ)-Pim;	Example #119
	H-Inp-D-1-Nal-D-Trp-Taz-Lys-NH ₂ ;	Example #57
20	H-Inp-D-Bal-D-Trp-Taz-Lys-NH ₂ ;	Example #23
	H-Apc-D-1-Nal-D-Trp-Taz-Lys-NH ₂ ;	Example #14
	H-Apc-D-Bal-D-Trp-Taz-Lys-NH ₂ ;	Example #20
	H-Apc-D-Bal-D-Trp-2-Thi-Lys-NH ₂ ;	Example #7
	H-Apc-D-Bal-D-Trp-Phe-Lys-NH ₂ ;	Example #4
25	H-Apc-D-1-Nal-D-Trp-Phe-Apc-NH ₂ ;	Example #18
	H-Apc-D-Bal-D-Trp-Phe-Apc-NH ₂ ;	Example #33
	H-Apc-D-1-Nal-D-1-Nal-Phe-Apc-NH ₂ ;	Example #74
	H-Apc-D-1-Nal-D-2-Nal-Phe-Apc-NH ₂ ;	Example #73
	H-Apc-D-1-Nal-D-1-Nal-Phe-Lys-NH ₂ ;	Example #64
30	H-Apc-D-Bal-D-1-Nal-Phe-Apc-NH ₂ ;	Example #83
	H-Apc-D-Bal-D-2-Nal-Phe-Apc-NH ₂ ;	Example #69
	H-Apc-D-Bal-D-1-Nal-Phe-Lys-NH ₂ ;	
	H-Apc-D-Bal-D-2-Nal-Phe-Lys-NH ₂ ;	Example #30

5	H-Apc-D-1-Nal-D-Trp-2-Thi-NH ₂ ;	Example #34
	H-Apc-D-Bal-D-Trp-Phe-NH ₂ ;	Example #41
	H-Apc-D-1-Nal-D-Trp-Taz-NH ₂ ;	Example #67
	H-Apc-D-Bal-D-Trp-2-Thi-NH ₂ ;	Example #47
	H-Apc-D-Bal-D-Trp-Taz-NH ₂ ;	Example #72
10	H-Apc-D-2-Nal-D-Trp-2-Thi-NH ₂ ;	Example #45
	H-Apc-D-2-Nal-D-Trp-Taz-NH ₂ ;	Example #77
	H-Inp-D-1-Nal-D-Trp-Taz-Apc-NH ₂ ;	Example #60
	H-Inp-D-Bal-D-Trp-Taz-Apc-NH ₂ ;	Example #38
	H-Apc-D-1-Nal-D-Trp-Taz-Apc-NH ₂ ;	Example #46
15	H-Apc-D-Bal-D-Trp-Taz-Apc-NH ₂ ;	Example #58
	H-Apc-D-1--Nal-D-Trp-2-Fua-Apc-NH ₂ ;	
	H-Apc-D-1-Nal-D-Trp-2-Fua-Lys-NH ₂ ;	
	H-Apc-D-1-Nal-D-Trp-2-Fua-NH ₂ ;	
	H-Apc-D-1-Nal-D-Trp-2-Pal-NH ₂ ;	
20	H-Apc-D-1-Nal-D-Trp-3-Pal-NH ₂ ;	
	H-Apc-D-1-Nal-D-Trp-3-Thi-Apc-NH ₂ ;	
	H-Apc-D-1-Nal-D-Trp-3-Thi-Lys-NH ₂ ;	
	H-Apc-D-1-Nal-D-Trp-3-Thi-NH ₂ ;	
	H-Apc-D-1-Nal-D-Trp-4-Pal-NH ₂ ;	
25	H-Apc-D-1-Nal-D-Trp-Pff-Apc-NH ₂ ;	
	H-Apc-D-1-Nal-D-Trp-Pff-Lys-NH ₂ ;	
	H-Apc-D-1-Nal-D-Trp-Pff-NH ₂ ;	
	H-Apc-D-2-Nal-D-Trp-2-Fua-Apc-NH ₂ ;	
	H-Apc-D-2-Nal-D-Trp-2-Fua-Lys-NH ₂ ;	
30	H-Apc-D-2-Nal-D-Trp-2-Fua-NH ₂ ;	
	H-Apc-D-2-Nal-D-Trp-2-Pal-NH ₂ ;	
	H-Apc-D-2-Nal-D-Trp-2-Thi-Apc-NH ₂ ;	
	H-Apc-D-2-Nal-D-Trp-2-Thi-Lys-NH ₂ ;	

- 5 H-Apc-D-2-Nal-D-Trp-3-Pal-NH₂;
H-Apc-D-2-Nal-D-Trp-3-Thi-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-3-Thi-Lys-NH₂;
H-Apc-D-2-Nal-D-Trp-3-Thi-NH₂;
H-Apc-D-2-Nal-D-Trp-4-Pal-NH₂;
10 H-Apc-D-2-Nal-D-Trp-Pff-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-Pff-Lys-NH₂;
H-Apc-D-2-Nal-D-Trp-Pff-NH₂;
H-Apc-D-2-Nal-D-Trp-Taz-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-Taz-Lys-NH₂;
15 H-Apc-D-Bal-D-Bal-2-Fua-Apc-NH₂;
H-Apc-D-Bal-D-Bal-2-Fua-Lys-NH₂;
H-Apc-D-Bal-D-Bal-2-Fua-NH₂;
H-Apc-D-Bal-D-Bal-2-Pal-NH₂;
H-Apc-D-Bal-D-Bal-2-Thi-Apc-NH₂;
20 H-Apc-D-Bal-D-Bal-2-Thi-Lys-NH₂;
H-Apc-D-Bal-D-Bal-2-Thi-NH₂;
H-Apc-D-Bal-D-Bal-3-Pal-NH₂;
H-Apc-D-Bal-D-Bal-3-Thi-Apc-NH₂;
H-Apc-D-Bal-D-Bal-3-Thi-Lys-NH₂;
25 H-Apc-D-Bal-D-Bal-3-Thi-NH₂;
H-Apc-D-Bal-D-Bal-4-Pal-NH₂;
H-Apc-D-Bal-D-Bal-Pff-Apc-NH₂;
H-Apc-D-Bal-D-Bal-Pff-Lys-NH₂;
H-Apc-D-Bal-D-Bal-Pff-NH₂;
30 H-Apc-D-Bal-D-Bal-Phe-Apc-NH₂;
H-Apc-D-Bal-D-Bal-Phe-Lys-NH₂;
H-Apc-D-Bal-D-Bal-Phe-NH₂;
H-Apc-D-Bal-D-Bal-Taz-Apc-NH₂;

- 5 H-Apc-D-Bal-D-Bal-Taz-Lys-NH₂;
H-Apc-D-Bal-D-Bal-Taz-NH₂;
H-Apc-D-Bal-D-Trp-2-Fua-Apc-NH₂;
H-Apc-D-Bal-D-Trp-2-Fua-Lys-NH₂;
H-Apc-D-Bal-D-Trp-2-Fua-NH₂;
10 H-Apc-D-Bal-D-Trp-2-Pal-NH₂;
H-Apc-D-Bal-D-Trp-3-Pal-NH₂;
H-Apc-D-Bal-D-Trp-3-Thi-Apc-NH₂;
H-Apc-D-Bal-D-Trp-3-Thi-Lys-NH₂;
H-Apc-D-Bal-D-Trp-3-Thi-NH₂;
15 H-Apc-D-Bal-D-Trp-4-Pal-NH₂;
H-Apc-D-Bal-D-Trp-Pff-Apc-NH₂;
H-Apc-D-Bal-D-Trp-Pff-Lys-NH₂;
H-Apc-D-Bal-D-Trp-Pff-NH₂;
H-Inp-D-1-Nal-D-Bal-2-Fua-Lys-NH₂;
20 H-Inp-D-1-Nal-D-Bal-2-Fua-NH₂;
H-Inp-D-1-Nal-D-Bal-2-Thi-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-3-Thi-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-Pff-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-Pff-NH₂;
25 H-Inp-D-1-Nal-D-Bal-Phe-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-Taz-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-Taz-NH₂;
H-Inp-D-1-Nal-D-Trp-2-Fua-Apc-NH₂;
H-Inp-D-1-Nal-D-Trp-2-Fua-Lys-NH₂;
30 H-Inp-D-1-Nal-D-Trp-2-Fua-NH₂;
H-Inp-D-1-Nal-D-Trp-3-Thi-Apc-NH₂;
H-Inp-D-1-Nal-D-Trp-3-Thi-Lys-NH₂;
H-Inp-D-1-Nal-D-Trp-Pff-Apc-NH₂;

- 5 H-Inp-D-1-Nal-D-Trp-Pff-Lys-NH₂;
H-Inp-D-1-Nal-D-Trp-Pff-NH₂;
H-Inp-D-1-Nal-D-Trp-Taz-NH₂;
H-Inp-D-2-Nal-D-Trp-2-Fua-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-2-Fua-NH₂;
10 H-Inp-D-2-Nal-D-Trp-2-Thi-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-3-Thi-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-3-Thi-Lys-NH₂;
H-Inp-D-2-Nal-D-Trp-3-Thi-NH₂;
H-Inp-D-2-Nal-D-Trp-Pff-Apc-NH₂;
15 H-Inp-D-2-Nal-D-Trp-Pff-NH₂;
H-Inp-D-2-Nal-D-Trp-Taz-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-Taz-NH₂;
H-Inp-D-Bal-D-Bal-2-Fua-Lys-NH₂;
H-Inp-D-Bal-D-Bal-2-Fua-NH₂;
20 H-Inp-D-Bal-D-Bal-2-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Bal-3-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Bal-Pff-Lys-NH₂;
H-Inp-D-Bal-D-Bal-Pff-NH₂;
H-Inp-D-Bal-D-Bal-Phe-Lys-NH₂;
25 H-Inp-D-Bal-D-Bal-Taz-Lys-NH₂;
H-Inp-D-Bal-D-Bal-Taz-NH₂;
H-Inp-D-Bal-D-Trp-2-Fua-Apc-NH₂;
H-Inp-D-Bal-D-Trp-2-Fua-Lys-NH₂;
H-Inp-D-Bal-D-Trp-2-Fua-NH₂;
30 H-Inp-D-Bal-D-Trp-3-Thi-Apc-NH₂;
H-Inp-D-Bal-D-Trp-3-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Trp-Pff-Apc-NH₂;
H-Inp-D-Bal-D-Trp-Pff-Lys-NH₂;

- 5 H-Inp-D-Bal-D-Trp-Pff-NH₂;
 H-Inp-D-Bal-D-Trp-Taz-NH₂;
 H-Inp-D-Bip-D-Bal-2-Fua-Lys-NH₂;
 H-Inp-D-Bip-D-Bal-2-Fua-NH₂;
 H-Inp-D-Bip-D-Bal-2-Thi-Lys-NH₂;
 10 H-Inp-D-Bip-D-Bal-3-Thi-Lys-NH₂;
 H-Inp-D-Bip-D-Bal-Pff-Lys-NH₂;
 H-Inp-D-Bip-D-Bal-Pff-NH₂; or
 H-Inp-D-Bip-D-Bal-Taz-Lys-NH₂;
 H-Inp-D-Bip-D-Bal-Taz-NH₂;
 15 H-Inp-D-Bip-D-Trp-2-Fua-Lys-NH₂;
 H-Inp-D-Bip-D-Trp-2-Fua-NH₂;
 H-Inp-D-Bip-D-Trp-2-Thi-Lys-NH₂;
 H-Inp-D-Bip-D-Trp-3-Thi-Lys-NH₂;
 H-Inp-D-Bip-D-Trp-Pff-Lys-NH₂;
 20 H-Inp-D-Bip-D-Trp-Pff-NH₂;
 H-Inp-D-Bip-D-Trp-Taz-Lys-NH₂; or
 H-Inp-D-Bip-D-Trp-Taz-NH₂;
 H-Inp-D-1-Nal-D-Trp-3-Pal-Lys-NH₂;
 H-Inp-D-2-Nal-D-Trp-4-Pal-Lys-NH₂;
 25 H-Inp-D-2-Nal-D-Trp-Orn-Lys-NH₂;
 H-Inp-D-Bip-D-Trp-Phe-Lys-NH₂;
 H-Inp-D-2-Nal-D-Trp-Thr(Bzl)-Lys-NH₂;
 H-Inp-D-2-Nal-D-Trp-Pff-Lys-NH₂;
 H-Inp-D-2-Nal-D-Trp-2-Thi-Lys-NH₂;
 30 H-Inp-D-2-Nal-D-Trp-Taz-Lys-NH₂;
 H-Inp-D-Dip-D-Trp-Phe-Lys-NH₂;
 H-Inp-D-Bpa-D-Trp-Phe-Lys-NH₂;
 H-Inp-D-2-Nal-D-Bpa-Phe-Lys-NH₂;

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- 5 H-Inp-D-2-Nal-D-Trp-Thr(Bzl)-NH₂;
H-Inp-D-2-Nal-D-Trp-Pff-NH₂;
H-Inp-D-2-Nal-D-Trp-Taz-NH₂;
H-Inp-D-2-Nal-D-Dip-Phe-NH₂;
H-Inp-D-2-Nal-D-Trp-3-Pal-Lys-NH₂;
- 10 H-Inp-D-Trp-D-2-Nal(Ψ)-Pim;
H-Inp-D-Bal-D-Trp-2-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Trp-Phe-Lys-NH₂;
H-Inp-D-1-Nal-D-Trp-2-Thi-Lys-NH₂;
H-Inp-D-2-Nal-D-Trp-Phe-Apc-NH₂;
- 15 H-Inp-D-1-Nal-D-Trp-Phe-Apc-NH₂;
H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-Phe-Lys-NH₂;
H-Apc-D-1-Nal-D-Trp-2-Thi-Lys-NH₂;
H-Inp-D-2-Nal-D-Trp(Ψ)-Pim;
- 20 H-Inp-D-1-Nal-D-Trp(Ψ)-Pim;
H-Inp-D-Bal-D-Trp(Ψ)-Pim;
H-Aib-D-Ser(Bzl)-D-Trp(Ψ)-Pim;
H-Inp-D-1-Nal-D-Trp-Taz-Lys-NH₂;
H-Inp-D-Bal-D-Trp-Taz-Lys-NH₂;
- 25 H-Apc-D-1-Nal-D-Trp-Taz-Lys-NH₂;
H-Apc-D-Bal-D-Trp-Taz-Lys-NH₂;
H-Apc-D-Bal-D-Trp-2-Thi-Lys-NH₂;
H-Apc-D-Bal-D-Trp-Phe-Lys-NH₂;
H-Apc-D-1-Nal-D-Trp-Phe-Apc-NH₂;
- 30 H-Apc-D-Bal-D-Trp-Phe-Apc-NH₂;
H-Apc-D-1-Nal-D-1-Nal-Phe-Apc-NH₂;
H-Apc-D-1-Nal-D-2-Nal-Phe-Apc-NH₂;
H-Apc-D-1-Nal-D-1-Nal-Phe-Lys-NH₂;

- 5 H-Apc-D-Bal-D-1-Nal-Phe-Apc-NH₂;
H-Apc-D-Bal-D-2-Nal-Phe-Apc-NH₂;
H-Apc-D-Bal-D-1-Nal-Phe-Lys-NH₂;
H-Apc-D-Bal-D-2-Nal-Phe-Lys-NH₂;
H-Apc-D-1-Nal-D-Trp-2-Thi-NH₂;
- 10 H-Apc-D-Bal-D-Trp-Phe-NH₂;
H-Apc-D-1-Nal-D-Trp-Taz-NH₂;
H-Apc-D-Bal-D-Trp-2-Thi-NH₂;
H-Apc-D-Bal-D-Trp-Taz-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Thi-NH₂;
- 15 H-Apc-D-2-Nal-D-Trp-Taz-NH₂;
H-Inp-D-1-Nal-D-Trp-Taz-Apc-NH₂;
H-Inp-D-Bal-D-Trp-Taz-Apc-NH₂;
H-Apc-D-1-Nal-D-Trp-Taz-Apc-NH₂;
H-Apc-D-Bal-D-Trp-Taz-Apc-NH₂;
- 20 H-Inp-D-2-Nal-D-Trp-3-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Trp-3-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Trp-2-Fua-Lys-NH₂;
H-Inp-D-Bal-D-Trp-Pff-Lys-NH₂;
H-Inp-D-Bal-D-Trp-3-Thi-Apc-NH₂;
- 25 H-Inp-D-Bal-D-Trp-2-Fua-Apc-NH₂;
H-Inp-D-Bal-D-Trp-Pff-Apc-NH₂;
H-Apc-D-Bal-D-Trp-3-Thi-Lys-NH₂;
H-Apc-D-Bal-D-Trp-2-Fua-Lys-NH₂;
H-Apc-D-Bal-D-Trp-Pff-Lys-NH₂;
- 30 H-Inp-D-Bal-D-Bal-Phe-Lys-NH₂;
H-Inp-D-Bal-D-Bal-2-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Bal-3-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Bal-Taz-Lys-NH₂;

- 5 H-Inp-D-Bal-D-Bal-2-Fua-Lys-NH₂;
H-Inp-D-Bal-D-Bal-Pff-Lys-NH₂;
H-Apc-D-Bal-D-Bal-Phe-Lys-NH₂;
H-Apc-D-Bal-D-Bal-2-Thi-Lys-NH₂;
H-Apc-D-Bal-D-Bal-3-Thi-Lys-NH₂;
10 H-Apc-D-Bal-D-Bal-Taz-Lys-NH₂;
H-Apc-D-Bal-D-Bal-2-Fua-Lys-NH₂;
H-Apc-D-Bal-D-Bal-Pff-Lys-NH₂;
H-Inp-D-1-Nal-D-Trp-3-Thi-Lys-NH₂;
H-Inp-D-1-Nal-D-Trp-2-Fua-Lys-NH₂;
15 H-Inp-D-1-Nal-D-Trp-Pff-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-Phe-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-2-Thi-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-3-Thi-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-Taz-Lys-NH₂;
20 H-Inp-D-1-Nal-D-Bal-2-Fua-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-Pff-Lys-NH₂;
H-Inp-D-2-Nal-D-Trp-2-Thi-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-3-Thi-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-Taz-Apc-NH₂;
25 H-Inp-D-2-Nal-D-Trp-2-Fua-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-Pff-Apc-NH₂;
H-Inp-D-1-Nal-D-Trp-3-Thi-Apc-NH₂;
H-Inp-D-1-Nal-D-Trp-2-Fua-Apc-NH₂;
H-Inp-D-1-Nal-D-Trp-Pff-Apc-NH₂;
30 H-Apc-D-1-Nal-D-Trp-3-Thi-Lys-NH₂;
H-Apc-D-1-Nal-D-Trp-2-Fua-Lys-NH₂;
H-Apc-D-1-Nal-D-Trp-Pff-Lys-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Thi-Lys-NH₂;

- 5 H-Apc-D-2-Nal-D-Trp-3-Thi-Lys-NH₂;
H-Apc-D-2-Nal-D-Trp-Taz-Lys-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Fua-Lys-NH₂;
H-Apc-D-2-Nal-D-Trp-Pff-Lys-NH₂;
H-Inp-D-Bip-D-Trp-2-Thi-Lys-NH₂;
10 H-Inp-D-Bip-D-Trp-3-Thi-Lys-NH₂;
H-Inp-D-Bip-D-Trp-Taz-Lys-NH₂;
H-Inp-D-Bip-D-Trp-2-Fua-Lys-NH₂;
H-Inp-D-Bip-D-Trp-Pff-Lys-NH₂;
H-Inp-D-Bip-D-Bal-2-Thi-Lys-NH₂;
15 H-Inp-D-Bip-D-Bal-3-Thi-Lys-NH₂;
H-Inp-D-Bip-D-Bal-Taz-Lys-NH₂;
H-Inp-D-Bip-D-Bal-2-Fua-Lys-NH₂;
H-Inp-D-Bip-D-Bal-Pff-Lys-NH₂;
H-Apc-D-Bal-D-Trp-3-Thi-Apc-NH₂;
20 H-Apc-D-Bal-D-Trp-2-Fua-Apc-NH₂;
H-Apc-D-Bal-D-Trp-Pff-Apc-NH₂;
H-Apc-D-Bal-D-Bal-Phe-Apc-NH₂;
H-Apc-D-Bal-D-Bal-2-Thi-Apc-NH₂;
H-Apc-D-Bal-D-Bal-3-Thi-Apc-NH₂;
25 H-Apc-D-Bal-D-Bal-Taz-Apc-NH₂;
H-Apc-D-Bal-D-Bal-2-Fua-Apc-NH₂;
H-Apc-D-Bal-D-Bal-Pff-Apc-NH₂;
H-Apc-D-1-Nal-D-Trp-3-Thi-Apc-NH₂;
H-Apc-D-1-Nal-D-Trp-2-Fua-Apc-NH₂;
30 H-Apc-D-1-Nal-D-Trp-Pff-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Thi-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-3-Thi-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-Taz-Apc-NH₂;

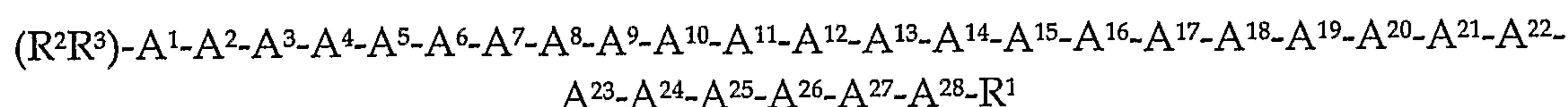
- 5 H-Apc-D-2-Nal-D-Trp-2-Fua-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-Pff-Apc-NH₂;
H-Inp-D-Bal-D-Trp-Taz-NH₂;
H-Inp-D-Bal-D-Trp-2-Fua-NH₂;
H-Inp-D-Bal-D-Trp-Pff-NH₂;
- 10 H-Apc-D-Bal-D-Trp-3-Thi-NH₂;
H-Apc-D-Bal-D-Trp-2-Fua-NH₂;
H-Apc-D-Bal-D-Trp-Pff-NH₂;
H-Apc-D-Bal-D-Trp-4-Pal-NH₂;
H-Apc-D-Bal-D-Trp-3-Pal-NH₂;
- 15 H-Apc-D-Bal-D-Trp-2-Pal-NH₂;
H-Inp-D-Bal-D-Bal-Taz-NH₂;
H-Inp-D-Bal-D-Bal-2-Fua-NH₂;
H-Inp-D-Bal-D-Bal-Pff-NH₂;
H-Apc-D-Bal-D-Bal-Phe-NH₂;
- 20 H-Apc-D-Bal-D-Bal-2-Thi-NH₂;
H-Apc-D-Bal-D-Bal-3-Thi-NH₂;
H-Apc-D-Bal-D-Bal-Taz-NH₂;
H-Apc-D-Bal-D-Bal-2-Fua-NH₂;
H-Apc-D-Bal-D-Bal-Pff-NH₂;
- 25 H-Apc-D-Bal-D-Bal-4-Pal-NH₂;
H-Apc-D-Bal-D-Bal-3-Pal-NH₂;
H-Apc-D-Bal-D-Bal-2-Pal-NH₂;
H-Inp-D-1-Nal-D-Trp-Taz-NH₂;
H-Inp-D-1-Nal-D-Trp-2-Fua-NH₂;
- 30 H-Inp-D-1-Nal-D-Trp-Pff-NH₂;
H-Inp-D-1-Nal-D-Bal-Taz-NH₂;
H-Inp-D-1-Nal-D-Bal-2-Fua-NH₂;
H-Inp-D-1-Nal-D-Bal-Pff-NH₂;

- 5 H-Inp-D-2-Nal-D-Trp-Taz-NH₂;
 H-Inp-D-2-Nal-D-Trp-2-Fua-NH₂;
 H-Inp-D-2-Nal-D-Trp-Pff-NH₂;
 H-Apc-D-1-Nal-D-Trp-3-Thi-NH₂;
 H-Apc-D-1-Nal-D-Trp-2-Fua-NH₂;
 10 H-Apc-D-1-Nal-D-Trp-Pff-NH₂;
 H-Apc-D-1-Nal-D-Trp-4-Pal-NH₂;
 H-Apc-D-1-Nal-D-Trp-3-Pal-NH₂;
 H-Apc-D-1-Nal-D-Trp-2-Pal-NH₂;
 H-Apc-D-2-Nal-D-Trp-3-Thi-NH₂;
 15 H-Apc-D-2-Nal-D-Trp-2-Fua-NH₂;
 H-Apc-D-2-Nal-D-Trp-Pff-NH₂;
 H-Apc-D-2-Nal-D-Trp-4-Pal-NH₂;
 H-Apc-D-2-Nal-D-Trp-3-Pal-NH₂;
 H-Apc-D-2-Nal-D-Trp-2-Pal-NH₂;
 20 H-Inp-D-Bip-D-Trp-Taz-NH₂;
 H-Inp-D-Bip-D-Trp-2-Fua-NH₂;
 H-Inp-D-Bip-D-Trp-Pff-NH₂;
 H-Inp-D-Bip-D-Bal-Taz-NH₂;
 H-Inp-D-Bip-D-Bal-2-Fua-NH₂; or
 25 H-Inp-D-Bip-D-Bal-Pff-NH₂;
 H-Inp-D-1-Nal-D-Trp-2-Thi-Apc-NH₂; Example #24
 H-Inp-D-Bal-D-Trp-2-Thi-Apc-NH₂; Example #9
 H-Apc-D-1-Nal-D-Trp-2-Thi-Apc-NH₂; Example #17
 H-Apc-D-Bal-D-Trp-2-Thi-Apc-NH₂; or Example #22
 30 H-Apc-D-1-Nal-D-Trp-Phe-Lys-NH₂ Example #13

or a pharmaceutically acceptable salts thereof.

In yet another aspect, the invention provides a method of treating gastrointestinal conditions such as gastroesophageal reflux disease, IBS, constipation, ileus, emesis,

5 gastroparesis, and colonic pseudo-obstruction and the like, by administering a therapeutically effective amount of a peptidyl ghrelin analog according to the following formula (III):



10

wherein:

A^1 is Gly, Aib, Ala, β -Ala, Acc or Gly(myristyl);

A^2 is Ser, Aib, Ala, Acc, Abu, Act, Ava, Thr or Val;

15 A^3 is Ser, Ser(C(O)- R^4), Asp(O- R^8), Asp(NH- R^9), Cys(S- R^{14}), Dap(S(O)₂- R^{10}), Dab(S(O)₂- R^{11}), Glu(O- R^6), Glu(NH- R^7), Thr(C(O)- R^5) or HN-CH((CH₂)_n-N($R^{12}R^{13}$))-C(O);

A^4 is Phe, Acc, Aic, Cha, 2-Fua, 1-Nal, 2-Nal, 2-Pal, 3-Pal, 4-Pal, hPhe, (X^1, X^2, X^3, X^4, X^5)Phe, Taz, 2-Thi, 3-Thi, Trp or Tyr;

A^5 is Leu, Abu, Acc, Aib, Ala, Cha, Ile, hLeu, Nle, Nva, Phe, Tle or Val;

20 A^6 is Ser, Abu, Acc, Act, Aib, Ala, Gly, Thr or Val;

A^7 is Pro, Dhp, Dmt, 3-Hyp, 4-Hyp, Inc, Ktp, Oic, Pip, Thz or Tic;

A^8 is Glu, Acc, Aib, Arg, Asn, Asp, Dab, Dap, Gln, Lys, Orn or HN-CH((CH₂)_n-N($R^{12}R^{13}$))-C(O);

25 A^9 is His, Apc, Aib, Acc, 2-Fua, 2-Pal, 3-Pal, 4-Pal, Taz, 2-Thi, 3-Thi or (X^1, X^2, X^3, X^4, X^5 -)Phe;

A^{10} is Gln, Acc, Aib, Asn, Asp or Glu;

A^{11} is Arg, Apc, hArg, Dab, Dap, Lys, Orn or HN-CH((CH₂)_n-N($R^{12}R^{13}$))-C(O);

A^{12} is Val, Abu, Acc, Aib, Ala, Cha, Nva, Gly, Ile, Leu, Nle, Tle or Cha;

A^{13} is Gln, Acc, Aib, Asn, Asp or Glu;

30 A^{14} is Gln, Acc, Aib, Asn, Asp or Glu;

A^{15} is Arg, hArg, Acc, Aib, Apc, Dab, Dap, Lys, Orn, Ser(C(O)- R^4), Thr(C(O)- R^5), Glu(O- R^6), Glu(NH- R^7), Asp(O- R^8), Asp(NH- R^9), Dap(S(O)₂- R^{10}), Dab(S(O)₂- R^{11}), HN-CH((CH₂)_n-N($R^{12}R^{13}$))-C(O), Cys(S- R^{14}), Cys(R^{15}), hCys(S- R^{16}) or hCys(R^{17});

5 A¹⁶ is Lys, Acc, Aib, Apc, Arg, hArg, Dab, Dap, Orn, Ser(C(O)-R⁴), Thr(C(O)-R⁵), Glu(O-R⁶), Glu(NH-R⁷), Asp(O-R⁸), Asp(NH-R⁹), Dap(S(O)₂-R¹⁰), Dab(S(O)₂-R¹¹), HN-CH((CH₂)_n-N(R¹²R¹³))-C(O), Cys(S-R¹⁴), Cys(R¹⁵), hCys(S-R¹⁶), hCys(R¹⁷) or deleted;

A¹⁷ is Glu, Arg, Asn, Asp, Dab, Dap, Gln, Lys, Orn, Ser(C(O)-R⁴), Thr(C(O)-R⁵), Glu(O-R⁶), Glu(NH-R⁷), Asp(O-R⁸), Asp(NH-R⁹), Dap(S(O)₂-R¹⁰), Dab(S(O)₂-R¹¹), HN-
10 CH((CH₂)_n-N(R¹²R¹³))-C(O), Cys(S-R¹⁴), Cys(R¹⁵), hCys(S-R¹⁶), hCys(R¹⁷), Lys(biotinyl) or deleted;

A¹⁸ is Ser, Abu, Acc, Act, Aib, Ala, Thr, Val, Ser(C(O)-R⁴), Thr(C(O)-R⁵), Glu(O-R⁶), Glu(NH-R⁷), Asp(O-R⁸), Asp(NH-R⁹), Dap(S(O)₂-R¹⁰), Dab(S(O)₂-R¹¹), HN-CH((CH₂)_n-N(R¹²R¹³))-C(O), Cys(S-R¹⁴), Cys(R¹⁵), hCys(S-R¹⁶), hCys(R¹⁷) or deleted;

15 A¹⁹ is Lys, Acc, Aib, Apc, Arg, hArg, Dab, Dap, Orn, Ser(C(O)-R⁴), Thr(C(O)-R⁵), Glu(O-R⁶), Glu(NH-R⁷), Asp(O-R⁸), Asp(NH-R⁹), Dap(S(O)₂-R¹⁰), Dab(S(O)₂-R¹¹), HN-CH((CH₂)_n-N(R¹²R¹³))-C(O), Cys(S-R¹⁴), Cys(R¹⁵), hCys(S-R¹⁶), hCys(R¹⁷) or deleted;

A²⁰ is Lys, Acc, Aib, Apc, Arg, hArg, Dab, Dap, Orn, Ser(C(O)-R⁴), Thr(C(O)-R⁵), Glu(O-R⁶), Glu(NH-R⁷), Asp(O-R⁸), Asp(NH-R⁹), Dap(S(O)₂-R¹⁰), Dab(S(O)₂-R¹¹), HN-
20 CH((CH₂)_n-N(R¹²R¹³))-C(O), Cys(S-R¹⁴), Cys(R¹⁵), hCys(S-R¹⁶), hCys(R¹⁷) or deleted;

A²¹ is Pro, Dhp, Dmt, Inc, 3-Hyp, 4-Hyp, Ktp, Oic, Pip, Thz, Tic or deleted;

A²² is Pro, Dhp, Dmt, 3-Hyp, 4-Hyp, Inc, Ktp, Oic, Pip, Thz, Tic or deleted;

A²³ is Abu, Acc, Act, Aib, Ala, Apc, Gly, Nva, Val or deleted;

A²⁴ is Lys, Acc, Aib, Apc, Arg, hArg, Dab, Dap, Orn, HN-CH((CH₂)_n-N(R¹²R¹³))-
25 C(O) or deleted;

A²⁵ is Leu, Abu, Acc, Aib, Ala, Cha, Ile, hLeu, Nle, Nva, Phe, Tle, Val or deleted;

A²⁶ is Gln, Aib, Asn, Asp, Glu or deleted;

A²⁷ is Pro, Dhp, Dmt, 3-Hyp, 4-Hyp, Inc, Ktp, Oic, Pip, Thz, Tic or deleted;

A²⁸ is Acc, Aib, Apc, Arg, hArg, Dab, Dap, Lys, Orn, HN-CH((CH₂)_n-N(R¹²R¹³))-
30 C(O) or deleted;

R¹ is -OH, -NH₂, -(C₁-C₃₀)alkoxy or NH-X⁶-CH₂-Z⁰, wherein X⁶ is a (C₁-C₁₂)alkyl, (C₂-C₁₂)alkenyl and Z⁰ is -H, -OH, -CO₂H or -C(O)-NH₂;

5 R^2 and R^3 is, independently for each occurrence thereof, selected from the group consisting of H, (C₁-C₃₀)alkyl, (C₁-C₃₀)heteroalkyl, (C₁-C₃₀)acyl, (C₂-C₃₀)alkenyl, (C₂-C₃₀)alkynyl, aryl(C₁-C₃₀)alkyl, aryl(C₁-C₃₀)acyl, substituted (C₁-C₃₀)alkyl, substituted (C₁-C₃₀)heteroalkyl, substituted (C₂-C₃₀)acyl, substituted (C₂-C₃₀)alkenyl, substituted aryl(C₁-C₃₀)alkyl and substituted aryl(C₁-C₃₀)acyl;

10 R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{14} , R^{15} , R^{16} and R^{17} is, independently for each occurrence thereof, selected from the group consisting of (C₁-C₄₀)alkyl, (C₂-C₄₀)alkenyl, substituted (C₁-C₄₀)alkyl, substituted (C₂-C₄₀)alkenyl, alkylaryl, substituted alkylaryl, aryl and substituted aryl;

R^{12} and R^{13} is, independently for each occurrence thereof, selected from the group
15 consisting of H, (C₁-C₄₀)alkyl, (C₁-C₄₀)acyl, (C₁-C₃₀)alkylsulfonyl, biotinyl and -C(NH)-NH₂,

X^1 , X^2 , X^3 , X^4 , and X^5 is, independently for each occurrence thereof, selected from the group consisting of H, F, Cl, Br, I, (C₁₋₁₀)alkyl, substituted (C₁₋₁₀)alkyl, aryl, substituted aryl, OH, NH₂, NO₂ and CN; and

20 n is, independently for each occurrence thereof, 1, 2, 3, 4 or 5;

provided that:

(I). when R^2 is (C₁-C₃₀)acyl, aryl(C₁-C₃₀)acyl, substituted (C₂-C₃₀)acyl, or substituted aryl(C₁-C₃₀)acyl, R^3 is H, (C₁-C₃₀)alkyl, (C₁-C₃₀)heteroalkyl, (C₂-C₃₀)alkenyl, aryl(C₁-C₃₀)alkyl, substituted (C₁-C₃₀)alkyl, substituted (C₁-C₃₀)heteroalkyl, substituted
25 (C₂-C₃₀)alkenyl or substituted aryl(C₁-C₃₀)alkyl;

(II). when R^{12} is (C₁-C₄₀)acyl, (C₁-C₃₀)alkylsulfonyl, biotinyl or -C(NH)-NH₂, then R^{13} is H or (C₁-C₄₀)alkyl;

(III). at least one of A¹⁵, A¹⁶, A¹⁷, A¹⁸, A¹⁹ or A²⁰ must be selected from the group consisting of Ser(C(O)-R⁴), Thr(C(O)-R⁵), Glu(O-R⁶), Glu(NH-R⁷), Asp(O-R⁸), Asp(NH-R⁹), Dap(S(O)₂-R¹⁰), Dab(S(O)₂-R¹¹), HN-CH((CH₂)_n-N(R¹²R¹³))-C(O), Cys(S-R¹⁴), Cys(R¹⁵), hCys(S-R¹⁶) and hCys(R¹⁷); and
30

(IV). when any of the group consisting of A¹⁵, A¹⁶, A¹⁷, A¹⁹ and A²⁰ is HN-CH((CH₂)_n-N(R¹²R¹³))-C(O), then R^{12} must be biotinyl;

5 or a pharmaceutically acceptable salt thereof.

In yet another aspect, the invention provides a preferred group of compounds according to formula (III), where in:

each of R² and R³ is, independently for each occurrence thereof, selected from the group consisting of H, acyl, n-butyryl, isobutyryl and n-octanoyl;

10 R⁴ is heptyl;

R⁶ is hexyl;

R⁷ is hexyl;

R¹⁰ is octyl;

R¹¹ is heptyl; and

15 provided that when Acc is substituted for one of the naturally-occurring residues, it is, independently for each occurrence, A3c, A4c, A5c or A6c; or pharmaceutically acceptable salts thereof.

In yet another aspect, the invention provides a preferred group of compounds according to formula (III), where the compound is:

20 (Ser(n-octanoyl)¹⁵)hGhrelin(1-28)-NH₂;

(Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;

(Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;

(Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁵)hGhrelin(1-28)-NH₂;

(Aib², Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;

25 (Aib², Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;

(Aib^{2,8}, Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;

(Aib^{2,8}, Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;

(Aib^{2,10}, Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;

(Aib^{2,10}, Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;

30 (Ser(n-octanoyl)¹⁶)hGhrelin(1-28)-NH₂;

(Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;

(Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;

(Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁶)hGhrelin(1-28)-NH₂;

- 5 (Aib², Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
 10 (Aib^{2,10}, Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
 (Ser(n-octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
 15 (Dap(octanesulfonyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Dap(octanesulfonyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Dap(octanesulfonyl)³, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Dap(octanesulfonyl)³, Ser(n-octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)³, Dap(octanesulfonyl)¹⁷)hGhrelin(1-28)-NH₂;
 20 (Cys(S-(CH₂)₉CH₃)¹⁷)hGhrelin(1-28)-NH₂;
 (Cys(S-(CH₂)₉CH₃)^{3,17})hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)³, Cys(S-(CH₂)₉CH₃)¹⁷)hGhrelin(1-28)-NH₂;
 (Cys(S-(CH₂)₉CH₃)³, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Cys(S-(CH₂)₉CH₃)³, Ser(n-octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
 25 (Aib², Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Aib², Thz⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib², 4-Hyp⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib², Dhp⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 30 (Aib², Pip⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib², Tic⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,17}, Thz⁷)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,17}, 4-Hyp⁷)hGhrelin(1-28)-NH₂;

5	(Aib ² , Glu(NH-hexyl) ^{3,17} , Dhp ⁷)hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu(NH-hexyl) ^{3,17} , Pip ⁷)hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu(NH-hexyl) ^{3,17} , Tic ⁷)hGhrelin(1-28)-NH ₂ ; (Aib ^{2,8} , Glu(NH-hexyl) ¹⁷)hGhrelin(1-28)-NH ₂ ; (Aib ^{2,8} , Glu(NH-hexyl) ^{3,17})hGhrelin(1-28)-NH ₂ ;	Example #16
10	(Aib ² , 3-Pal ⁹ , Glu(NH-hexyl) ¹⁷)hGhrelin(1-28)-NH ₂ ; (Aib ² , 4-Pal ⁹ , Glu(NH-hexyl) ¹⁷)hGhrelin(1-28)-NH ₂ ; (Aib ² , Taz ⁹ , Glu(NH-hexyl) ¹⁷)hGhrelin(1-28)-NH ₂ ; (Aib ² , 2-Thi ⁹ , Glu(NH-hexyl) ¹⁷)hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu(NH-hexyl) ^{3,17} , 3-Pal ⁹)hGhrelin(1-28)-NH ₂ ;	
15	(Aib ² , Glu(NH-hexyl) ^{3,17} , 4-Pal ⁹)hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu(NH-hexyl) ^{3,17} , Taz ⁹)hGhrelin(1-28)-NH ₂ ; (Aib ² , Glu(NH-hexyl) ^{3,17} , 2-Thi ⁹)hGhrelin(1-28)-NH ₂ ; (Aib ^{2,10} , Glu(NH-hexyl) ¹⁷)hGhrelin(1-28)-NH ₂ ; (Aib ^{2,10} , Glu(NH-hexyl) ^{3,17})hGhrelin(1-28)-NH ₂ ;	
20	(Aib ⁸ , Glu(NH-hexyl) ¹⁷)hGhrelin(1-28)-NH ₂ ; (Taz ⁹ , Glu(NH-hexyl) ¹⁷)hGhrelin(1-28)-NH ₂ ; (3-Pal ⁹ , Glu(NH-hexyl) ¹⁷)hGhrelin(1-28)-NH ₂ ; (4-Pal ⁹ , Glu(NH-hexyl) ¹⁷)hGhrelin(1-28)-NH ₂ ; (2-Thi ⁹ , Glu(NH-hexyl) ¹⁷)hGhrelin(1-28)-NH ₂ ;	
25	(Glu(NH-hexyl) ^{3,17} , Aib ⁸)hGhrelin(1-28)-NH ₂ ; (Glu(NH-hexyl) ^{3,17} , Taz ⁹)hGhrelin(1-28)-NH ₂ ; (Glu(NH-hexyl) ^{3,17} , 3-Pal ⁹)hGhrelin(1-28)-NH ₂ ; (Glu(NH-hexyl) ^{3,17} , 4-Pal ⁹)hGhrelin(1-28)-NH ₂ ; (Glu(NH-hexyl) ^{3,17} , 2-Thi ⁹)hGhrelin(1-28)-NH ₂ ;	
30	(Aib ^{1,2,10} , Glu(NH-hexyl) ¹⁷)hGhrelin(1-28)-NH ₂ ; (Aib ^{1,2,10} , Glu(NH-hexyl) ^{3,17})hGhrelin(1-28)-NH ₂ ; (A5c ² , Glu(NH-hexyl) ¹⁷)hGhrelin(1-28)-NH ₂ ; (A5c ² , Glu(NH-hexyl) ^{3,17})hGhrelin(1-28)-NH ₂ ;	

6

- 5 (Glu(1-heptanol)^{3,17})hGhrelin(1-28)-NH₂;
 (Asp(1-heptanol)^{3,17})hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Asp(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 10 (Lys(biotinyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ser(n-octanoyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁸)hGhrelin(1-28)-NH₂;
 15 (Aib², Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;
 20 (Aib^{2,10}, Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
 (Ser(n-octanoyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,19})hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁹)hGhrelin(1-28)-NH₂;
 25 (Aib², Glu(NH-hexyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,19})hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)^{3,19})hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)¹⁹)hGhrelin(1-28)-NH₂;
 30 (Aib^{2,10}, Glu(NH-hexyl)^{3,19})hGhrelin(1-28)-NH₂;
 (Ser(n-octanoyl)²⁰)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)²⁰)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,20})hGhrelin(1-28)-NH₂;

- 5 (Glu(NH-hexyl)³, Ser(n-octanoyl)²⁰)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)²⁰)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,20})hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)²⁰)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)^{3,20})hGhrelin(1-28)-NH₂;
- 10 (Aib^{2,10}, Glu(NH-hexyl)²⁰)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)^{3,20})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Ser(n-octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
- 15 (Ac-Gly¹, Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Dap(octanesulfonyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Dap(octanesulfonyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Dap(octanesulfonyl)³, Glu(NH-Hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Dap(octanesulfonyl)³, Ser(n-Octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
- 20 (Ac-Gly¹, Glu(NH-hexyl)³, Dap(octanesulfonyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Cys(S-(CH₂)₉CH₃)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Cys(S-(CH₂)₉CH₃)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)³, Cys(S-(CH₂)₉CH₃)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Cys(S-(CH₂)₉CH₃)³, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
- 25 (Ac-Gly¹, Cys(S-(CH₂)₉CH₃)³, Ser(n-octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Thz⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², 4-Hyp⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Dhp⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
- 30 (Ac-Gly¹, Aib², Pip⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Tic⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, Thz⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, 4-Hyp⁷)hGhrelin(1-28)-NH₂;

- 5 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, Dhp⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, Pip⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, Tic⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², 3-Pal⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 10 (Ac-Gly¹, Aib², 4-Pal⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Taz⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², 2-Thi⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, 4-Pal⁹)hGhrelin(1-28)-NH₂;
 15 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, Taz⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib⁸, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 20 (Ac-Gly¹, Taz⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, 3-Pal⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, 4-Pal⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, 2-Thi⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,17}, Aib⁸)hGhrelin(1-28)-NH₂;
 25 (Ac-Gly¹, Glu(NH-hexyl)^{3,17}, Taz⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,17}, 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,17}, 4-Pal⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,17}, 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Ac-Aib¹, Aib^{2,10}, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 30 (Ac-Aib¹, Aib^{2,10}, Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, A5c², Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, A5c², Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(1-heptanol)^{3,17})hGhrelin(1-28)-NH₂;

- 5 (Ac-Gly¹, Asp(1-heptanol)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Asp(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)³, Lys(biotinyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;
- 10 (Ac-Gly¹, Ser(n-octanoyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;
- 15 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
- 20 (Ac-Gly¹, Ser(n-octanoyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
- 25 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;
- 30 (Ac-Gly¹, Ser(n-octanoyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;

- 5 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
- 10 (Ac-Gly¹, Glu(NH-hexyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Ser(n-octanoyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,19})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)¹⁹)hGhrelin(1-28)-NH₂;
- 15 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,19})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)^{3,19})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)^{3,19})hGhrelin(1-28)-NH₂;
- 20 (Ac-Gly¹, Glu(NH-hexyl)²⁰)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Ser(n-octanoyl)²⁰)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,20})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)³, Ser(n-octanoyl)²⁰)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)²⁰)hGhrelin(1-28)-NH₂;
- 25 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,20})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)²⁰)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)^{3,20})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)²⁰)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)^{3,20})hGhrelin(1-28)-NH₂;
- 30 or pharmaceutically acceptable salts thereof.

In yet another aspect, the invention provides a method of treating gastrointestinal conditions such as gastroesophageal reflux disease, IBS, constipation, ileus, emesis, gastroparesis, and colonic pseudo-obstruction and the like, by administering a

5 therapeutically effective amount of the following peptidyl ghrelin analogs which do not correspond to any one of formula (I), (II) or (III):

- | | | |
|----|--|--------------|
| | (Asp ³ (NH-heptyl))hGhrelin(1-28)-NH ₂ | Example #86 |
| | (des-Ser ²)hGhrelin(1-28)-NH ₂ ; or | Example #104 |
| | (des-Gly ¹ , des-Ser ²)hGhrelin(1-28)-NH ₂ ; | Example #117 |
| 10 | (Aib ¹)hGhrelin(1-28)-NH ₂ ; | Example #6 |
| | (Asp ³ (O-hexyl))hGhrelin(1-28)-NH ₂ ; | Example #40 |
| | (Aib ¹ , Ser ³)hGhrelin(1-28)-NH ₂ ; | |
| | (A5c ⁵ , Ser ³)hGhrelin(1-28)-NH ₂ ; | |
| | (Aib ^{2,4} , Ser ³ , 4-Pal ⁹)hGhrelin(1-28)-NH ₂ ; | |
| 15 | (n-octanoyl-Gly ¹ , Ser ³)hGhrelin(1-28)-NH ₂ ; | |
| | (isobutyryl-Gly ¹ , Ser ³)hGhrelin(1-28)-NH ₂ ; | |
| | (n-butyryl-Gly ¹ , Ser ³)hGhrelin(1-28)-NH ₂ ; | |
| | (Aib ¹ , Thr ³)hGhrelin(1-28)-NH ₂ ; | |
| | (Aib ^{2,4} , Thr ³ , 4-Pal ⁹)hGhrelin(1-28)-NH ₂ ; | |
| 20 | (n-octanoyl-Gly ¹ , Thr ³)hGhrelin(1-28)-NH ₂ ; | |
| | (isobutyryl-Gly ¹ , Thr ³)hGhrelin(1-28)-NH ₂ ; | |
| | (n-butyryl-Gly ¹ , Thr ³)hGhrelin(1-28)-NH ₂ ; | |
| | (Ac-Gly ¹)hGhrelin(1-28)-NH ₂ ; | |
| | (Ac-Gly ¹ , Ser ³)hGhrelin(1-28)-NH ₂ , | |
| 25 | Aib ² , Lys(Myristyl) ¹⁷)hGhrelin-(1-28)-NH ₂ ; or | |
| | Gly(myristyl) ¹ -(Aib ² , Lys(Myristyl) ¹⁷)hGhrelin-(1-28)-NH ₂ ; | |

or pharmaceutically acceptable salts thereof.

The peptidyl analog of ghrelin or prodrug thereof may be administered
 30 parenterally, e.g., administered intravenously, subcutaneously, or by implantation of a sustained release formulation. The peptidyl analog of ghrelin may also be administered intracerebroventricular (icv) injection. In another embodiment, the peptidyl analog of ghrelin is administered via oral administration. Particularly preferred peptidyl analogs

5 of ghrelin are those compounds of formula (I) or formula (II) or formula (III), as well as the non-conforming compounds indicated above, as well as each of the compounds that are specifically enumerated herein and below in the Examples section of the present disclosure, or a pharmaceutically acceptable salt thereof.

Accordingly, in one aspect, the invention features a method of treating ileus in a
10 patient, which includes identifying a patient suffering from or at risk for ileus and administering to the patient a pharmaceutical composition comprising an effective amount of a peptidyl analog of ghrelin. Particularly preferred peptidyl analogs of ghrelin are those compounds of formula (I) or formula (II) or formula (III), as well as the non-conforming compounds indicated above and each of the compounds that are
15 specifically enumerated herein and below in the Examples section of the present disclosure, or a pharmaceutically acceptable salt thereof.

In another aspect, the invention features a method of treating post-surgical ileus in a patient. The method includes identifying a patient suffering from post-surgical ileus and administering to the patient a pharmaceutical composition comprising an
20 effective amount of a peptidyl analog of ghrelin effective to treat ileus in the patient. The ileus can be ileus of any part of the gastrointestinal tract, e.g., the stomach, small intestine, and/or large intestine (e.g., the colon). The pharmaceutical composition can be administered to the patient via any route described herein, e.g., via inhalation (of gaseous compositions); orally; and/or by direct administration to the abdominal cavity
25 of the patient. Particularly preferred peptidyl analogs of ghrelin are those compounds of formula (I) or formula (II) or formula (III), as well as the non-conforming compounds indicated above and each of the compounds that are specifically enumerated herein and below in the Examples section of the present disclosure, or a pharmaceutically acceptable salt thereof.

30 The invention also features a method of treating ileus in a patient suffering from or at risk for ileus not caused by abdominal surgery, e.g., ileus caused by any factor described herein other than abdominal surgery. The method includes identifying a patient suffering from or at risk for ileus not caused by abdominal surgery and

5 administering to the patient a pharmaceutical composition comprising an effective amount of a peptidyl analog of ghrelin effective to treat ileus in the patient. Particularly preferred peptidyl analogs of ghrelin are those compounds of formula (I) or formula (II) or formula (III), as well as the non-conforming compounds indicated above and each of the compounds that are specifically enumerated herein and below in the Examples
10 section of the present disclosure, or a pharmaceutically acceptable salt thereof.

In yet another aspect, the invention provides a method of performing surgery on a patient. The method includes identifying a patient in need of surgery, and before, during, and/or after the surgery, administering to the patient an effective amount of a peptidyl analog of ghrelin sufficient to treat ileus in the patient. The surgery can be any
15 surgery that causes and/or puts the patient at risk for ileus. For example, the surgery can involve manipulation (e.g., touching (directly or indirectly)) of the gastrointestinal tract, e.g., the stomach and/or intestines, e.g., small or large intestine (e.g., the colon), and can be a surgery involving laparotomy or not involving laparotomy (e.g., surgeries involving laparoscopy). In certain embodiments, the surgery can be transplant surgery
20 or non-transplant surgery, e.g., surgery involving any organ(s) or tissue(s) in the abdomen, e.g., surgery of the urogenital system (e.g., kidneys, ureter, and/or bladder; and reproductive organs (e.g., uterus, ovaries, and/or fallopian tubes)); the digestive system (e.g., the stomach, small intestine, large intestine (e.g., the colon), appendix, gallbladder, liver, spleen, and/or pancreas); the lymphatic system; the respiratory system
25 (e.g., the lungs); the diaphragm; surgery to treat cancer of any organ or tissue within the abdomen; endometrial surgery; and orthopedic surgeries, e.g., hip surgery. Particularly preferred peptidyl analogs of ghrelin are those compounds of formula (I) or formula (II) or formula III as well as each of the compounds that are specifically enumerated herein and below in the Examples section of the present disclosure, or a pharmaceutically
30 acceptable salt thereof.

In still another aspect, the invention provides a method of treating ileus in a patient, which includes identifying a patient suffering from or at risk for ileus and administering to the patient an effective amount of a peptidyl analog of ghrelin for

5 treatment or prevention of ileus. Particularly preferred peptidyl analogs of ghrelin are those compounds of formula (I) or formula (II) or formula (III), as well as the non-conforming compounds indicated above and each of the compounds that are specifically enumerated herein and below in the Examples section of the present disclosure, or a pharmaceutically acceptable salt thereof.

10 In another aspect, the invention features a method of treating emesis in a patient, which includes identifying a patient suffering from or at risk for emesis and administering to the patient a pharmaceutical composition comprising an effective amount of a peptidyl analog of ghrelin. Particularly preferred peptidyl analogs of ghrelin are those compounds of formula (I) or formula (II) or formula (III), as well as the
15 non-conforming compounds indicated above and each of the compounds that are specifically enumerated herein and below in the Examples section of the present disclosure, or a pharmaceutically acceptable salt thereof.

In yet another aspect, the invention features a method of treating emesis provoked by or associated with the administration of anti-cancer chemotherapeutic
20 agents in a patient, which includes identifying a patient suffering from or at risk for emesis provoked by or associated with the administration of anti-cancer chemotherapeutic agents and administering to the patient a pharmaceutical composition comprising a therapeutically effective amount of a peptidyl analog of ghrelin. Particularly preferred peptidyl analogs of ghrelin are those compounds of formula (I) or
25 formula (II) or formula (III), as well as the non-conforming compounds indicated above and each of the compounds that are specifically enumerated herein and below in the Examples section of the present disclosure, or a pharmaceutically acceptable salt thereof.

In another aspect, the invention features a method of treating gastroparesis in a patient, which includes identifying a patient suffering from or at risk for gastroparesis
30 and administering to the patient a pharmaceutical composition comprising an effective amount of a peptidyl analog of ghrelin. Particularly preferred peptidyl analogs of ghrelin are those compounds of formula (I) or formula (II) or formula (III), as well as the non-conforming compounds indicated above and each of the compounds that are

5 specifically enumerated herein and below in the Examples section of the present disclosure, or a pharmaceutically acceptable salt thereof.

In yet another aspect, the invention features a method of treating gastroparesis resulting from diabetes in a patient, which includes identifying a patient suffering from or at risk for diabetic gastroparesis and administering to the patient a pharmaceutical
10 composition comprising an effective amount of a peptidyl analog of ghrelin. The diabetes may be Type I or Type II diabetes. Particularly preferred peptidyl analogs of ghrelin are those compounds of formula (I) or formula (II) or formula (III), as well as the non-conforming compounds indicated above and each of the compounds that are specifically enumerated herein and below in the Examples section of the present
15 disclosure, or a pharmaceutically acceptable salt thereof.

In a further aspect, the present invention provides the use of a therapeutically effective amount of a peptidyl ghrelin analog compound according formula (I) or formula (II) or formula (III) as defined hereinabove, as well as the non-conforming compounds indicated above and each of the compounds specifically enumerated herein
20 and below, or pharmaceutically acceptable salts thereof, for the manufacture of a medicament useful to treat gastrointestinal conditions such as gastroesophageal reflux disease, IBS, constipation, ileus, emesis, gastroparesis, and colonic pseudo-obstruction and the like. In yet another embodiment, the gastrointestinal conditions treated are ileus, emesis and gastroparesis. In yet another embodiment, the ileus is post-operative
25 ileus, the emesis is associated with the administration of anti-cancer chemotherapeutic agents and the gastroparesis is associated with diabetes.

In yet another aspect, the present invention provides a method of eliciting an agonist or an antagonist effect from a ghrelin receptor in a subject in need thereof which comprises administering to said subject an effective amount of a compound of formula
30 (I) or formula (II) or formula (III) as defined hereinabove, as well as the non-conforming compounds indicated above and each of the compounds specifically enumerated herein and below or pharmaceutically acceptable salts thereof.

Various embodiments of this invention provide the use of peptidyl analogs of ghrelin or pharmaceutically acceptable salts thereof as described above in the various treatments of patients described above and use of such analogs or salts thereof in manufacture of pharmaceutical compositions for such use.

5

BRIEF DESCRIPTION OF THE DRAWINGS

FIG 1: shows the schematic presentation of the methods used to study gastric emptying in a rat model;

FIG 2: shows the effect on gastric emptying in normal rats for native ghrelin and
10 Example 19;

FIG 3: shows the percent decrease in gastric emptying due to post-operative ileus alone and in combination with morphine; and

FIG 4: shows the effect on gastric emptying in post-operative ileus rat model for native ghrelin and Example 19;

15 FIG 5: shows the effect on gastric emptying in post-operative ileus and morphine rat model for native ghrelin and Example 19.

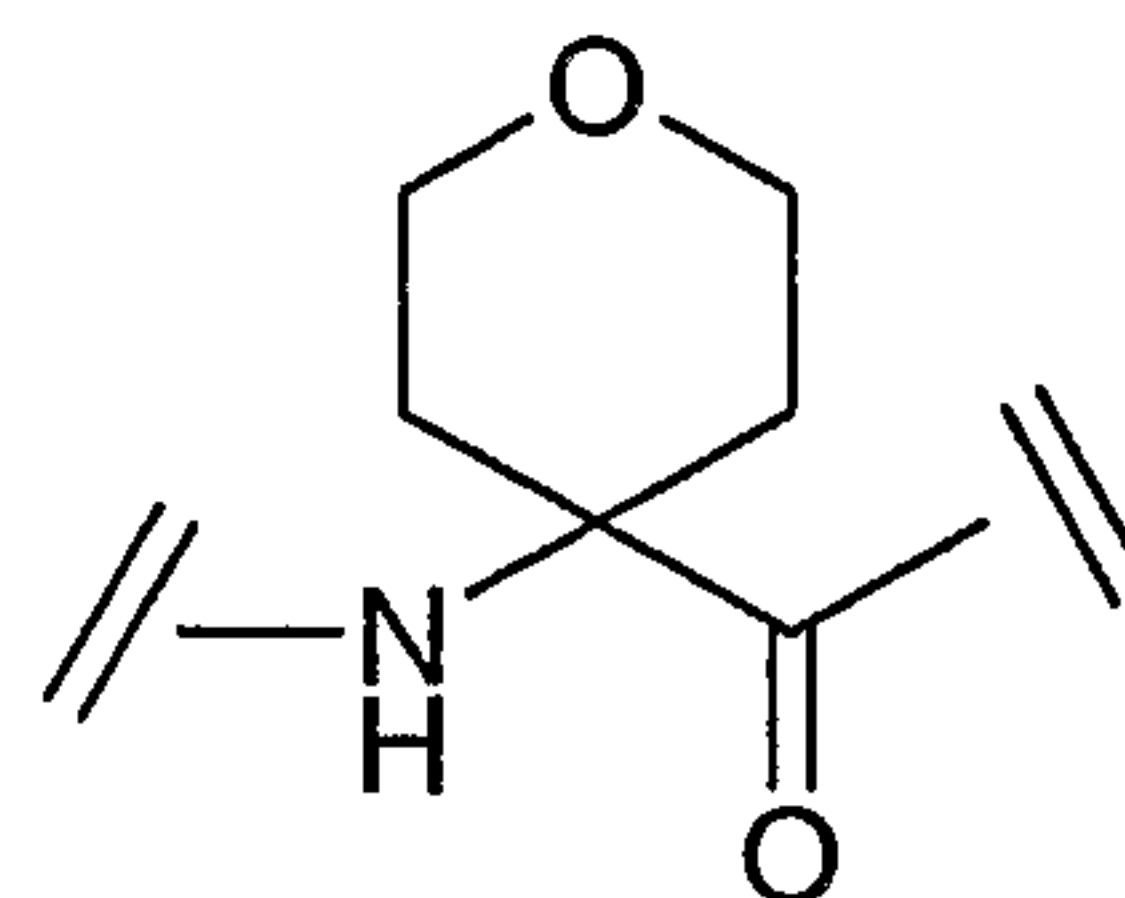
DETAILED DESCRIPTION

Unless otherwise defined, all technical and scientific terms used herein have the
20 same meaning as commonly understood by one of ordinary skill in the art to which this invention belongs. Suitable methods and materials are described below, although methods and materials similar or equivalent to those described herein can be used in the practice or testing of the present invention. In case of conflict, the present specification, including definitions, will control. The materials, methods, and examples are illustrative only and
25 not intended to be limiting.

Other features and advantages of the invention will be apparent from the following description of the preferred embodiments and from the claims. Certain amino acids present in compounds of the invention can be and are represented herein as follows:

5 *Nomenclature and Abbreviations*

Symbol	Meaning
Abu	α -aminobutyric acid
10 Acc	1-amino-1-cyclo(C ₃ -C ₉)alkyl carboxylic acid
A3c	1-amino-1-cyclopropanecarboxylic acid
A4c	1-amino-1-cyclobutanecarboxylic acid
A5c	1-amino-1-cyclopentanecarboxylic acid
A6c	1-amino-1-cyclohexanecarboxylic acid



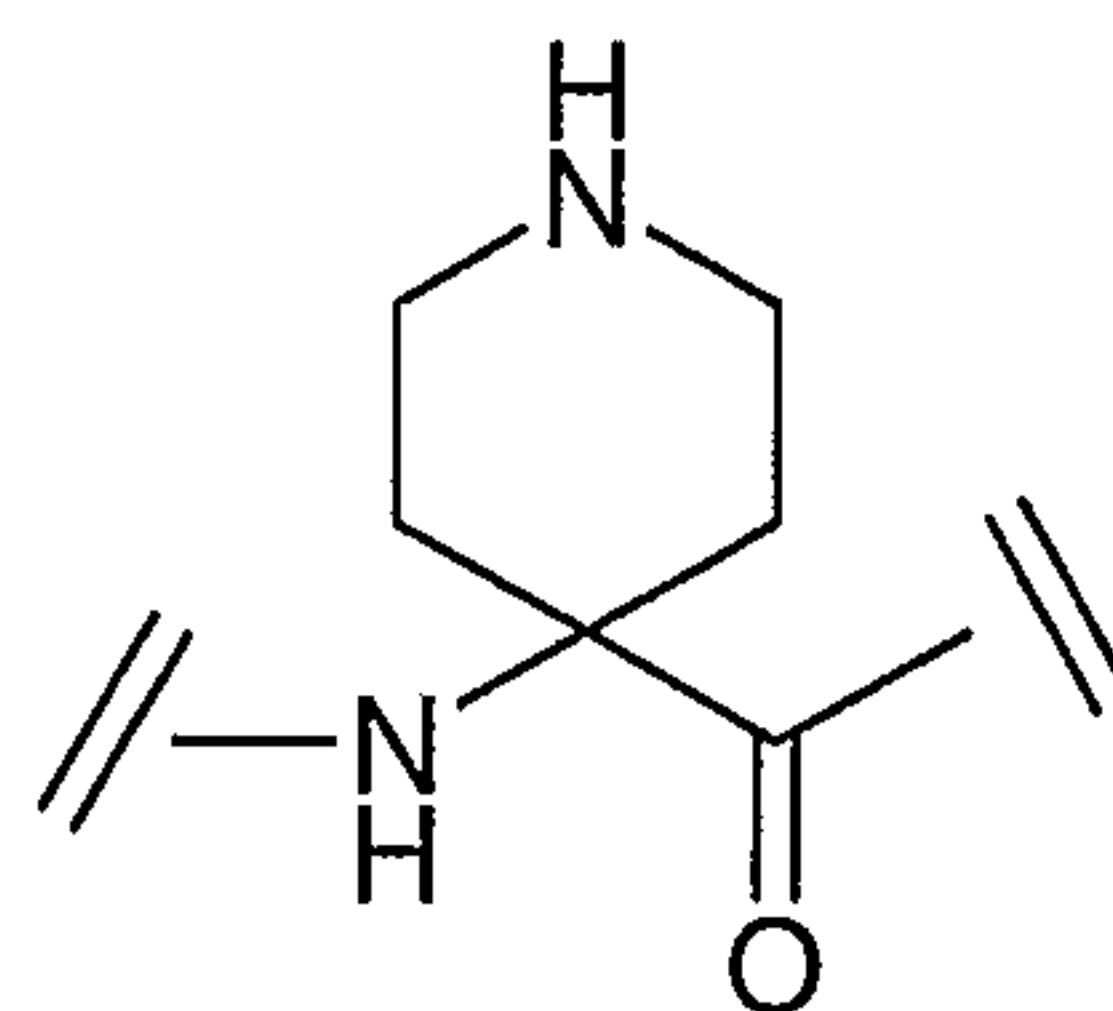
15

Act 4-amino-4-carboxytetrahydropyran having the structure:

Aib α -aminoisobutyric acid

Aic 2-aminoindan-2-carboxylic acid

Ala or A alanine

20 β -Ala beta-alanine

Apc denotes the structure:

Arg or R arginine

hArg homoarginine

Asn or N asparagine

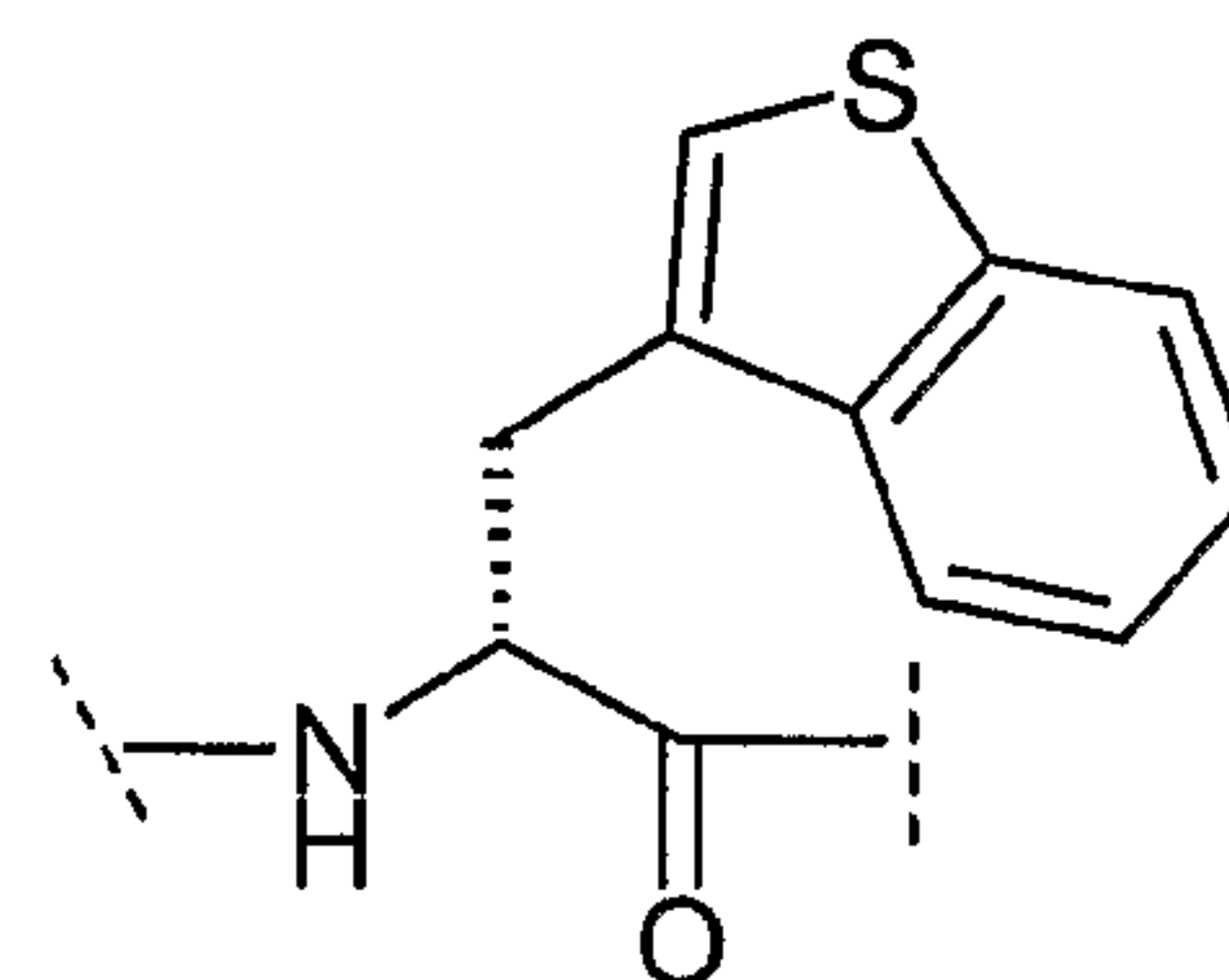
25 Asp or D aspartic acid

Ava 5-amino-n-valeric acid

5

D-Bal

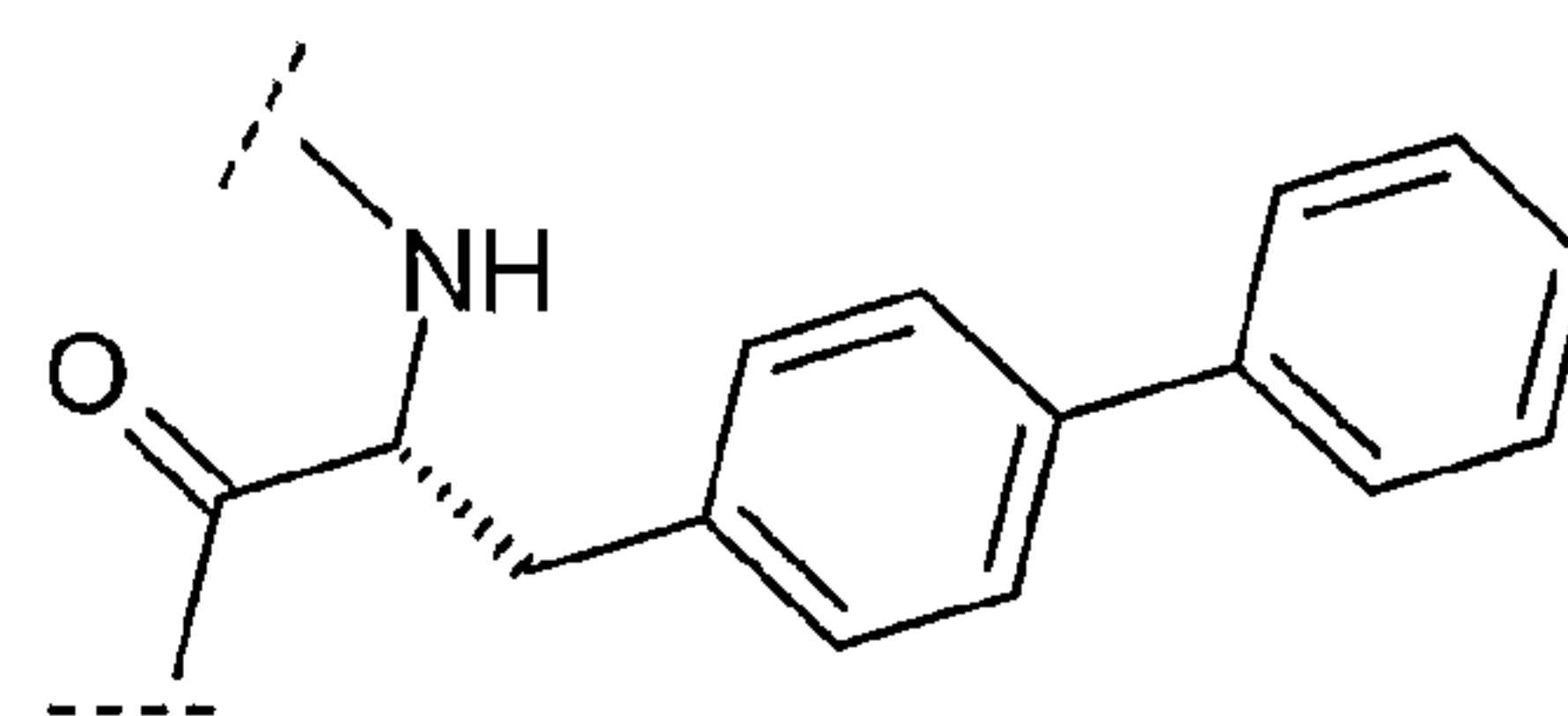
D-3-benzothiienylalanine having the structure:



10

D-Bip

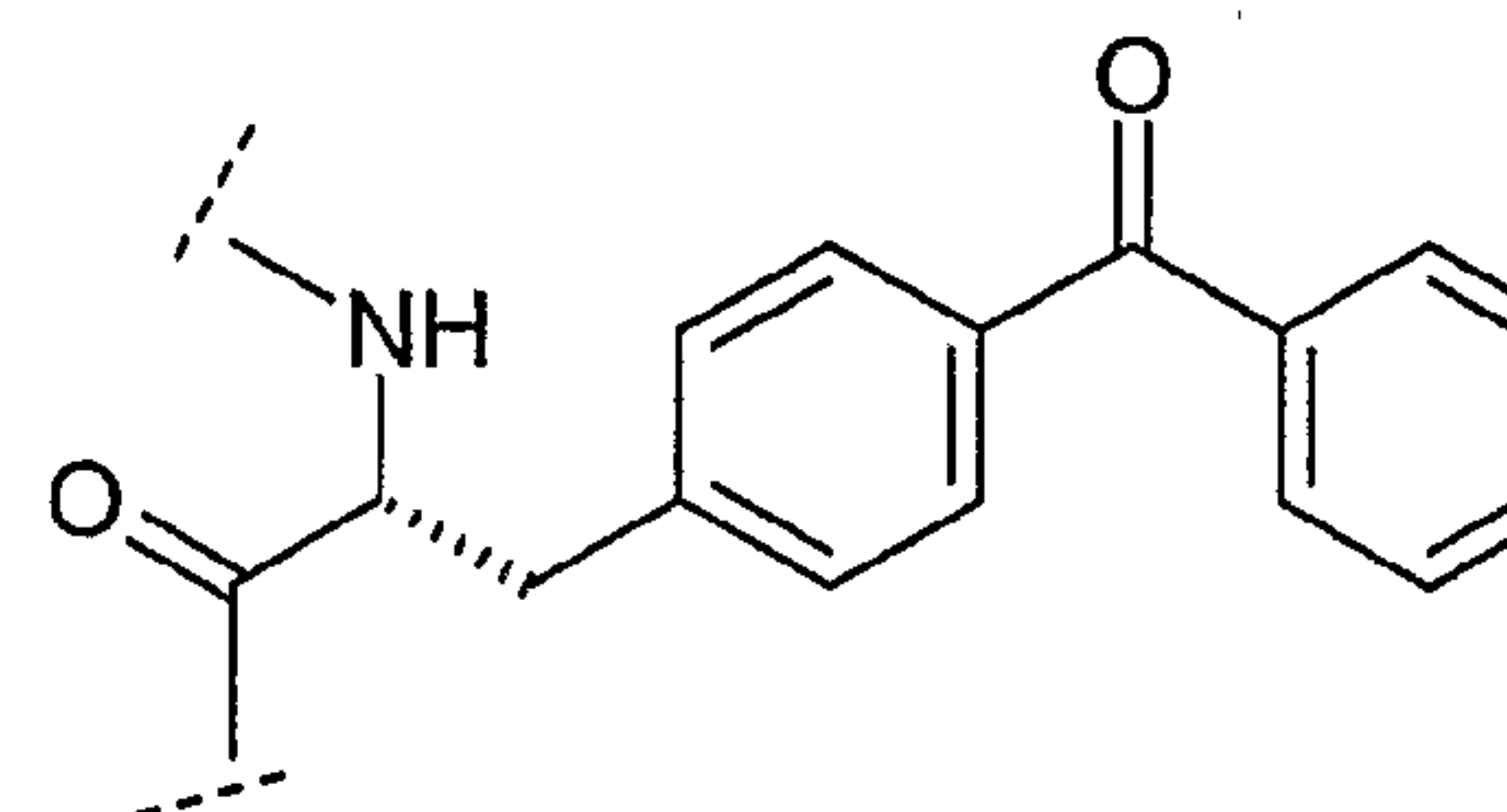
D-4,4'-biphenylalanine having the structure:



15

D-Bpa

D-4-benzoylphenylalanine having the structure:



20

Cha

 β -cyclohexylalanine

Cys or C

cysteine

hCys

L-homocysteine

Dab

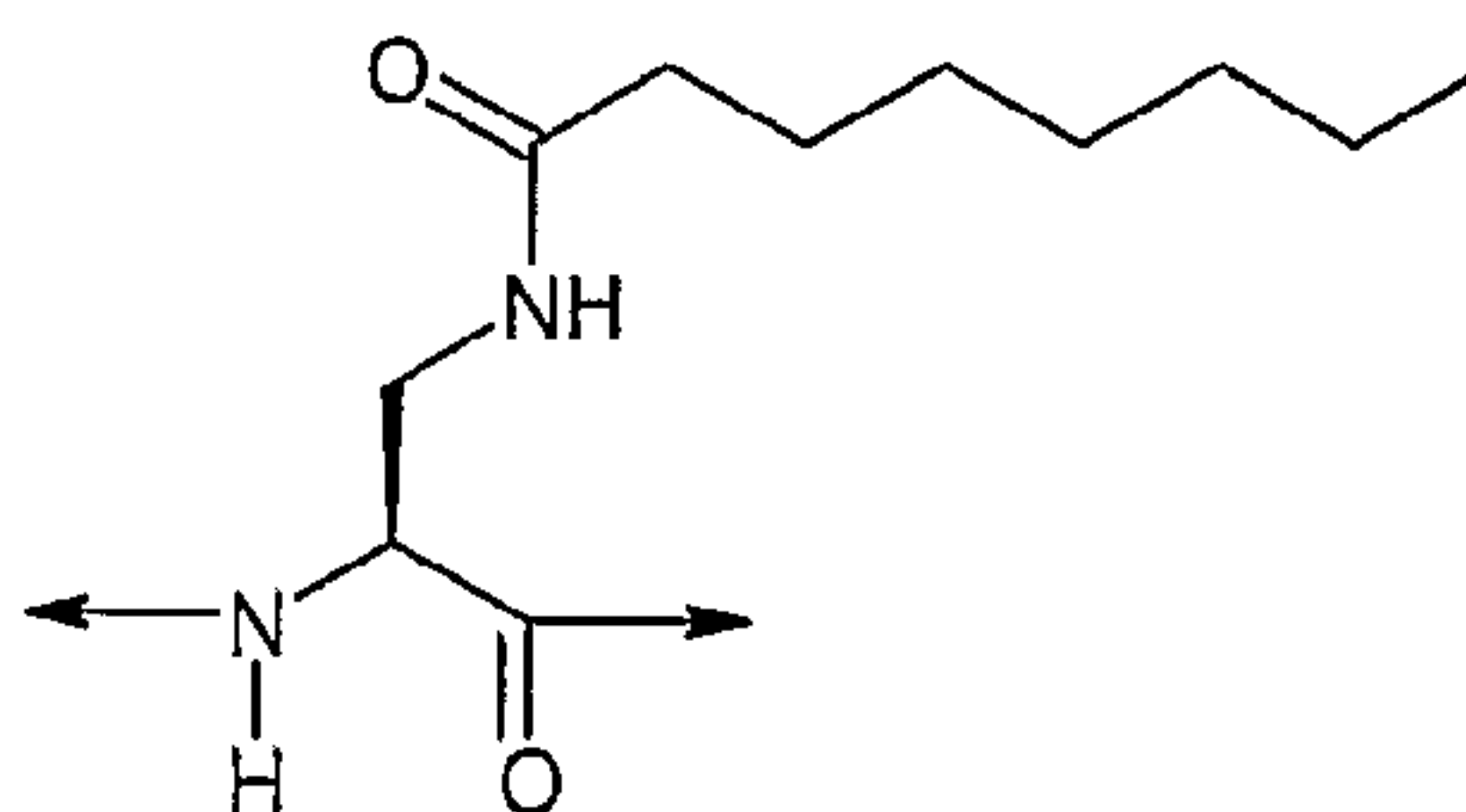
2,4-diaminobutyric acid

Dap

2,3-diaminopropionic acid

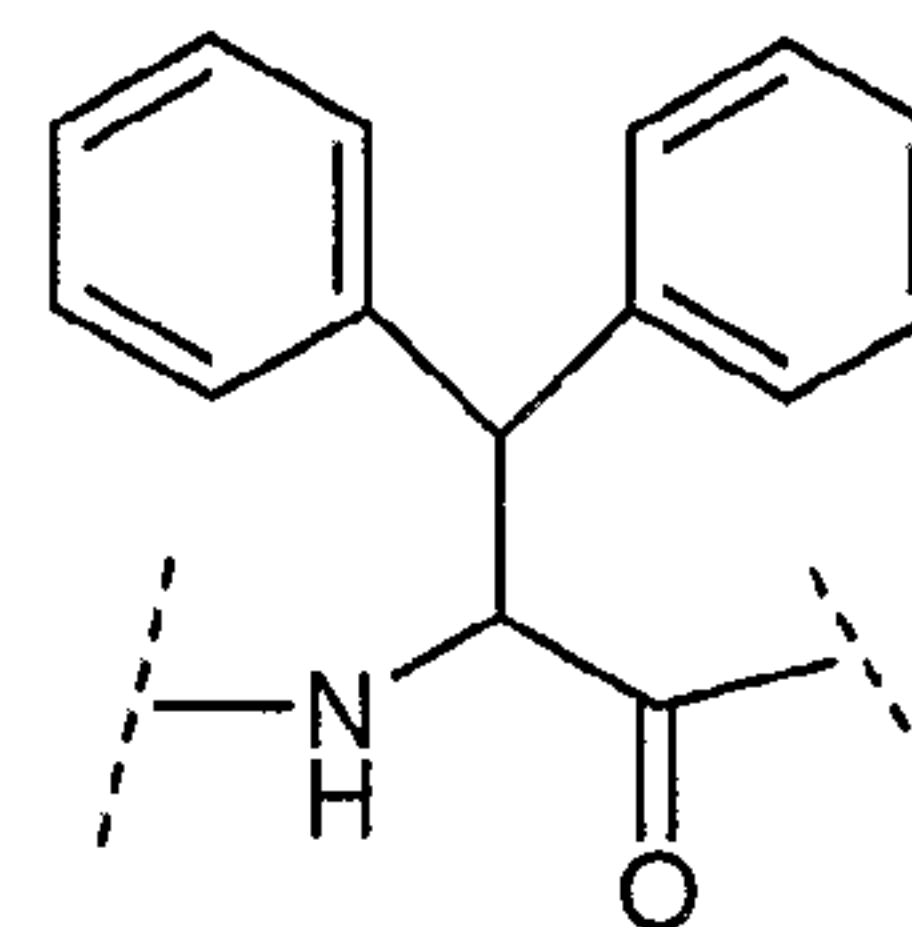
25

Dap(octanoyl) denotes the structure:

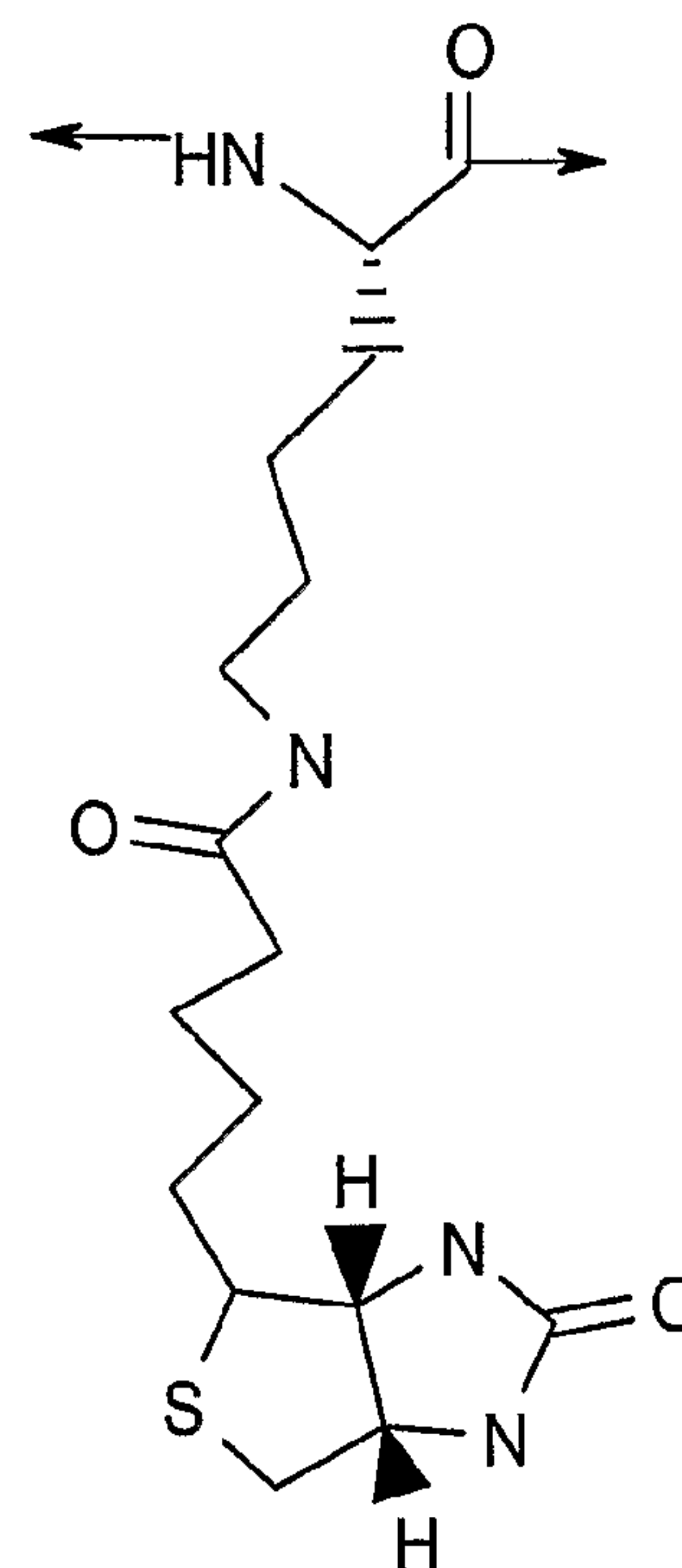


Dhp

3,4-dehydroproline

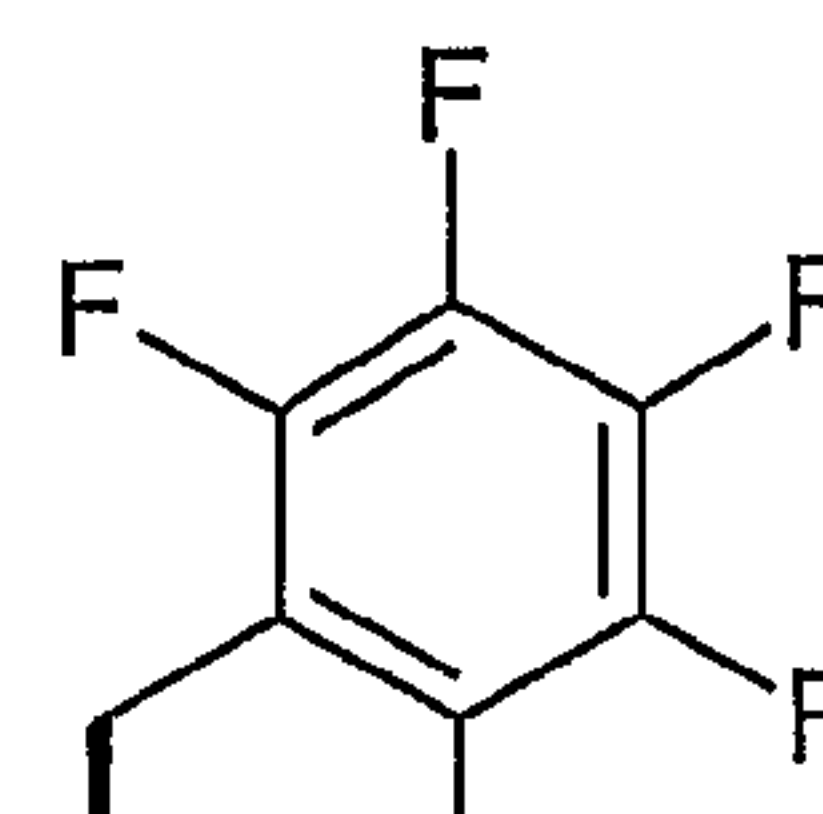


5	Dip	β,β -diphenylalanine having the structure:
	Dmt	5,5-dimethylthiazolidine-4-carboxylic acid
	2-Fua	β -(2-furyl)-alanine
	Gln or Q	glutamine
	Glu or E	glutamic acid
10	Gly or G	glycine
	His or H	histidine
	3-Hyp	trans-3-hydroxy-L-proline, i.e., (2S, 3S)-3-hydroxypyrrolidine-2-carboxylic acid
	4-Hyp	4-hydroxyproline, i.e., (2S, 4R)-4-hydroxypyrrolidine-2-carboxylic acid
	Ile or I	isoleucine
15	Inc	indoline-2-carboxylic acid
	Inp	isonipecotic acid
	Ktp	4-ketoproline
	Leu or L	leucine
	hLeu	homoleucine
20	Lys or K	lysine



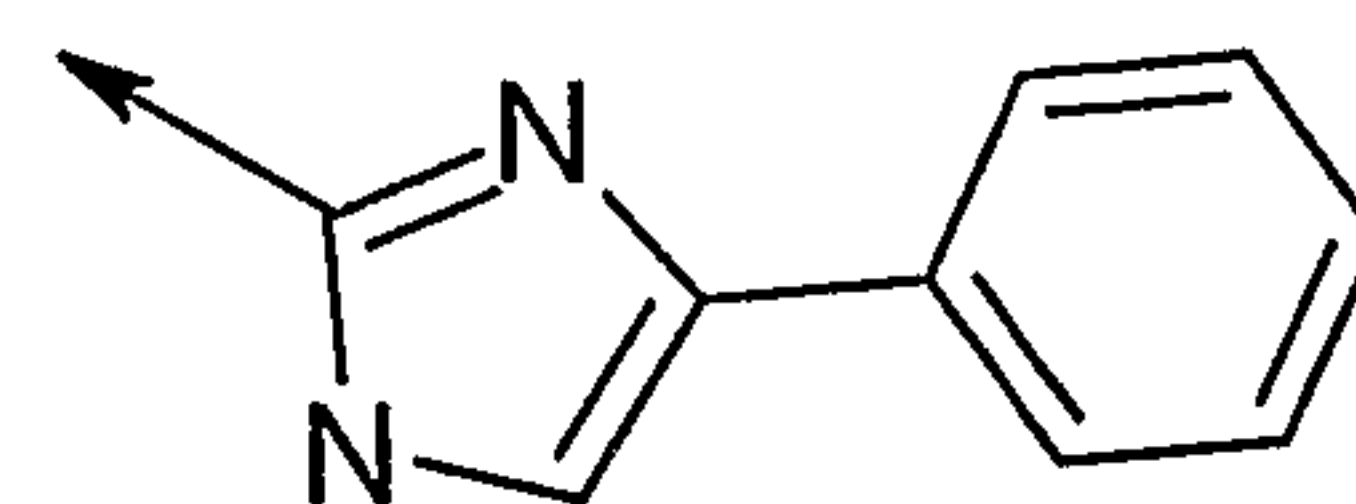
5	Lys (biotinyl)	lysine biotinyl having the structure:
	Met or M	methionine
	1-Nal	β -(1-naphthyl)-L-alanine
	2-Nal	β -(2-naphthyl)-L-alanine
10	Nle	norleucine
	Nva	norvaline
	Oic	octahydroindole-2-carboxylic acid
	Orn	ornithine
	2-Pal	β -(2-pyridiyl)alanine
15	3-Pal	β -(3-pyridiyl)alanine
	4-Pal	β -(4-pyridiyl)alanine
	Phe or F	phenylalanine
	hPhe	homophenylalanine

20



5

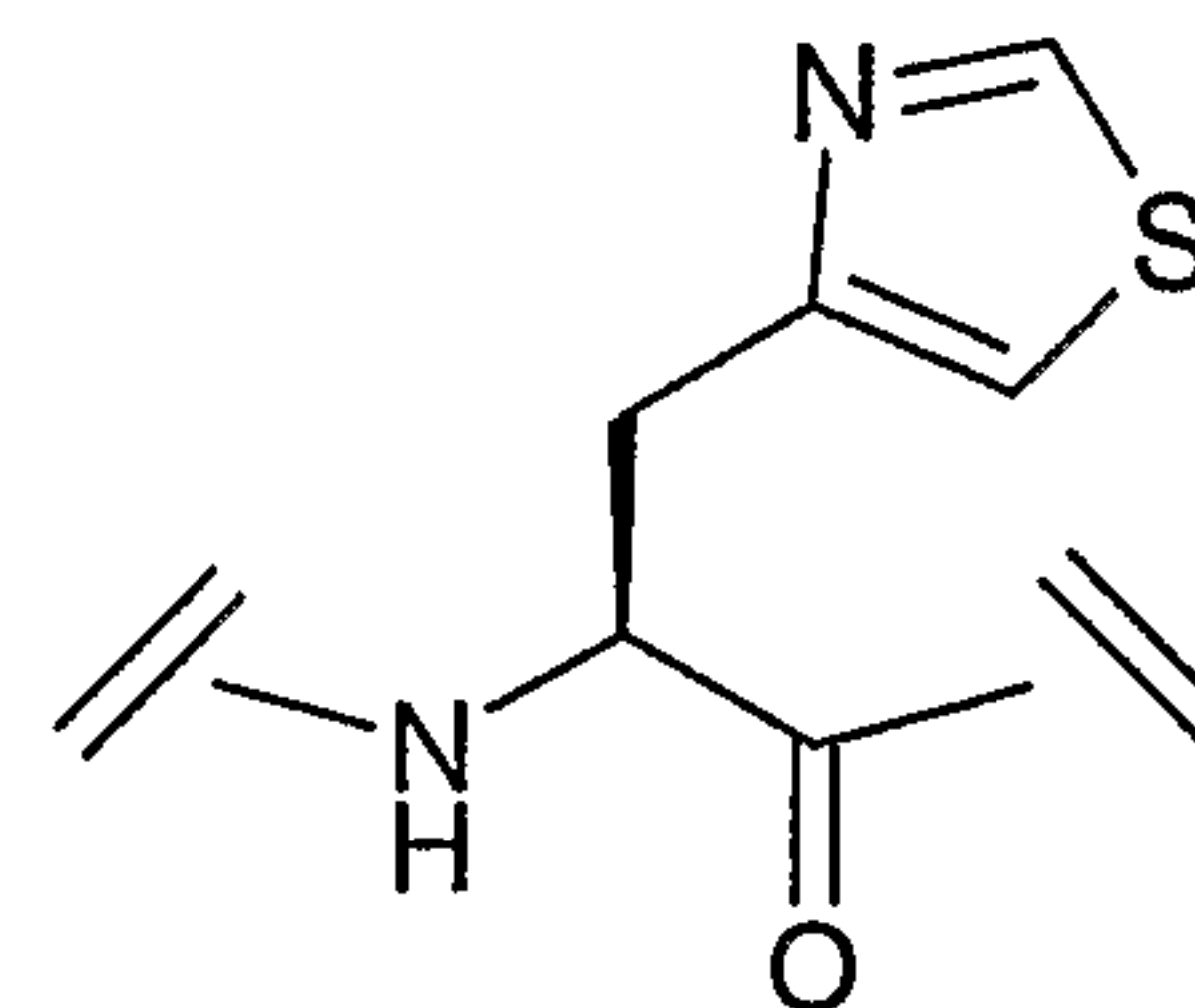
- 10 Pff pentafluorophenylalanine having the structure:
 Pip pipecolic acid



Pim 2'-(4-phenyl)imidazolyl having the structure:

Pro or P proline

- 15 Ser or S serine



Taz β -(4-thiazolyl)alanine having the structure:

2-Thi β -(2-thienyl)alanine

3-Thi β -(3-thienyl)alanine

- 20 Thr or T threonine

Thz thiazolidine-4-carboxylic acid

Tic 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

Tle tert-leucine

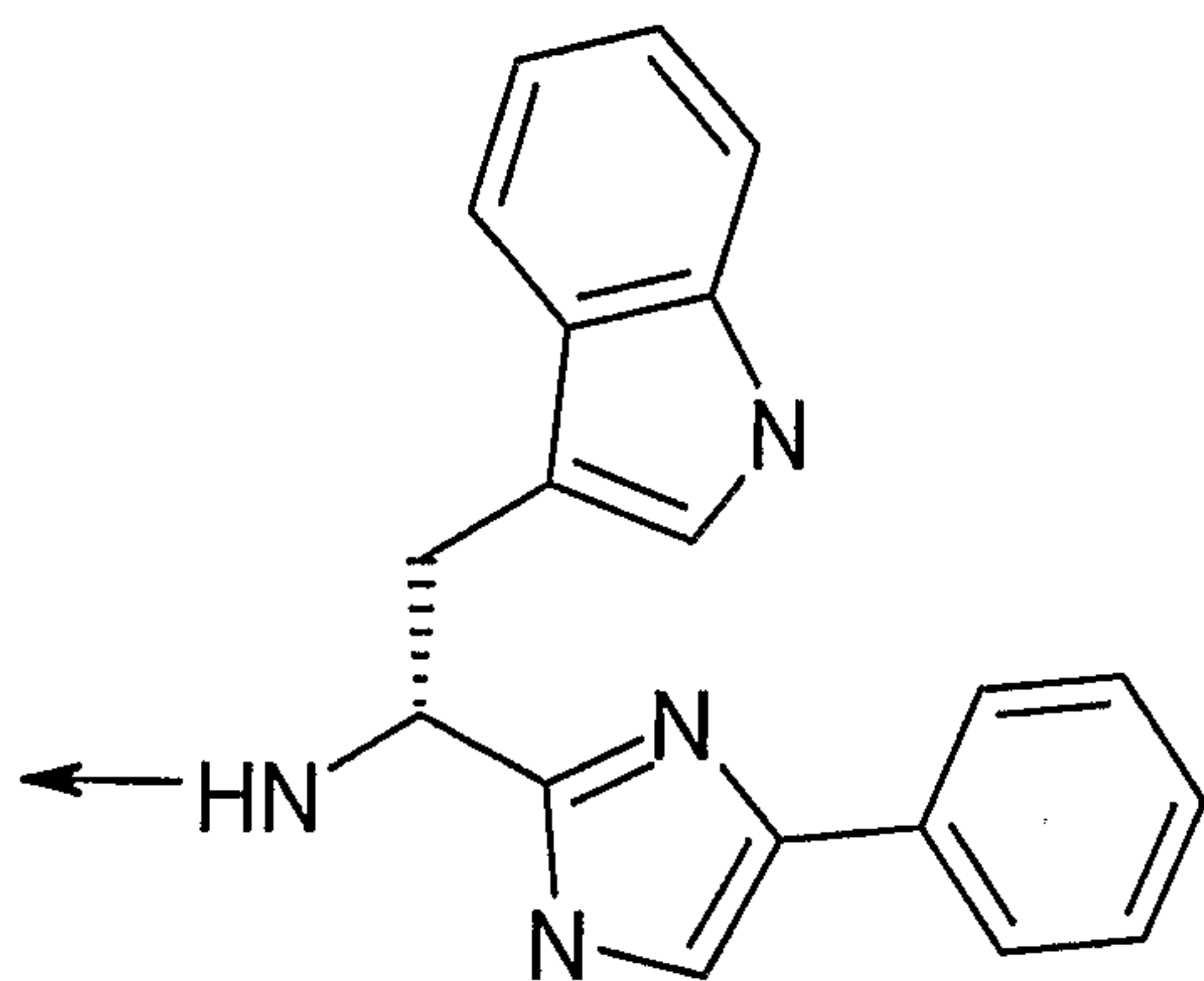
Trp or W tryptophan

- 25 Tyr or Y tyrosine

Val or V valine

When a non-amino acid imidazole moiety (e.g., Pim, defined above) is present at

5 the C-terminus of a compound of the invention, it is understood that the imidazole moiety is attached to the adjacent amino acid via a pseudo-peptide bond (ψ), wherein a bond is form between the position 2 carbon of the imidazole ring and the alpha carbon of the amino acid. For example, in the case where the adjacent amino acid is D-trptophan (D-Trp) and the imidazole moiety is Pim, the C-terminus of the peptide
 10 would appear as follows:



As used herein, Acc encompasses an amino acid selected from the group of 1-amino-1-cyclopropanecarboxylic acid (A3c); 1-amino-1-cyclobutanecarboxylic acid (A4c); 1-amino-1-cyclopentanecarboxylic acid (A5c); 1-amino-1-cyclohexanecarboxylic
 15 acid (A6c); 1-amino-1-cycloheptanecarboxylic acid (A7c); 1-amino-1-cyclooctanecarboxylic acid (A8c); and 1-amino-1-cyclononanecarboxylic acid (A9c).

As used herein, a "peptidyl analog of ghrelin" encompasses ghrelin analogues and peptidyl analogs thereof which can be used to practice the therapeutic method of the present invention including, but not limited to, the following compounds:

20 (Dap³(Octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Aib², A6c⁵)hGhrelin(1-28)-NH₂;
 (A6c⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,6})hGhrelin(1-28)-NH₂;
 (Aib², A5c¹²)hGhrelin(1-28)-NH₂;
 25 (Aib², A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Act⁶)hGhrelin(1-28)-NH₂;

- 5 (Aib², 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Dmt⁷)hGhrelin(1-28)-NH₂;
 (Aib², Thz⁷)hGhrelin(1-28)-NH₂;
 (A5c²)hGhrelin(1-28)-NH₂;
 (Act²)hGhrelin(1-28)-NH₂;
- 10 (Aib², A5c⁵)hGhrelin(1-28)-NH₂;
 (Aib², A6c⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,5})hGhrelin(1-28)-NH₂;
 (Aib², hLeu⁵)hGhrelin(1-28)-NH₂;
 (Aib², Cha⁵)hGhrelin(1-28)-NH₂;
- 15 (Aib^{2,6})hGhrelin(1-28)-NH₂;
 (Aib², Act⁶)hGhrelin(1-28)-NH₂;
 (Aib², Thr⁶)hGhrelin(1-28)-NH₂;
 (Aib², Abu⁶)hGhrelin(1-28)-NH₂;
 (Aib², 4Hyp⁷)hGhrelin(1-28)-NH₂;
- 20 (Aib², Thz⁷)hGhrelin(1-28)-NH₂;
 (Aib², Pip⁷)hGhrelin(1-28)-NH₂;
 (Aib², Dhp⁷)hGhrelin(1-28)-NH₂;
 (Aib², Ktp⁷)hGhrelin(1-28)-NH₂;
 (Aib^{2,8})hGhrelin(1-28)-NH₂;
- 25 (Aib², 2-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², 4-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Taz⁹)hGhrelin(1-28)-NH₂;
 (Aib², 2-Thi⁹)hGhrelin(1-28)-NH₂;
- 30 (Aib², 2-Fua⁹)hGhrelin(1-28)-NH₂;
 (Aib², Apc⁹)hGhrelin(1-28)-NH₂;
 (Aib^{2,9})hGhrelin(1-28)-NH₂;
 (Aib^{2,10})hGhrelin(1-28)-NH₂;

- 5 (Aib², Tic⁷)hGhrelin(1-28)-NH₂;
 (Aib⁶)hGhrelin(1-28)-NH₂;
 (A5c⁵)hGhrelin(1-28)-NH₂;
 (A6c⁵)hGhrelin(1-28)-NH₂;
 (Act⁶)hGhrelin(1-28)-NH₂;
- 10 (3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Dmt⁷)hGhrelin(1-28)-NH₂;
 (Thz⁷)hGhrelin(1-28)-NH₂;
 (Aib⁵)hGhrelin(1-28)-NH₂;
 (hLeu⁵)hGhrelin(1-28)-NH₂;
- 15 (Cha⁵)hGhrelin(1-28)-NH₂;
 (Thr⁶)hGhrelin(1-28)-NH₂;
 (Abu⁶)hGhrelin(1-28)-NH₂;
 (4Hyp⁷)hGhrelin(1-28)-NH₂;
 (Pip⁷)hGhrelin(1-28)-NH₂;
- 20 (Dhp⁷)hGhrelin(1-28)-NH₂;
 (Ktp⁷)hGhrelin(1-28)-NH₂;
 (Aib⁸)hGhrelin(1-28)-NH₂;
 (2-Pal⁹)hGhrelin(1-28)-NH₂;
 (4-Pal⁹)hGhrelin(1-28)-NH₂;
- 25 (Taz⁹)hGhrelin(1-28)-NH₂;
 (2-Thi⁹)hGhrelin(1-28)-NH₂;
 (2-Fua⁹)hGhrelin(1-28)-NH₂;
 (Apc⁹)hGhrelin(1-28)-NH₂;
 (Aib⁹)hGhrelin(1-28)-NH₂;
- 30 (Aib¹⁰)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), A6c⁵)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), A6c⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, Dap³(Octanesulfonyl))hGhrelin(1-28)-NH₂;

- 5 (Aib², Dap³(Octanesulfonyl), A5c¹²)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), Act⁶)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), 3-Pal⁹)hGhrelin(1-28)-NH₂;
- 10 (Aib², Dap³(Octanesulfonyl), Dmt⁷)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), Thz⁷)hGhrelin(1-28)-NH₂;
 (A5c², Dap³(Octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Act², Dap³(Octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), A5c⁵)hGhrelin(1-28)-NH₂;
- 15 (Aib^{2,5}, Dap³(Octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), hLeu⁵)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), Cha⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, Dap³(Octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), Thr⁶)hGhrelin(1-28)-NH₂;
- 20 (Aib², Dap³(Octanesulfonyl), Abu⁶)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), 4Hyp⁷)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), Pip⁷)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), Dhp⁷)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), Ktp⁷)hGhrelin(1-28)-NH₂;
- 25 (Aib^{2,8}, Dap³(Octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), 2-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), 4-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), Taz⁹)hGhrelin(1-28)-NH₂;
- 30 (Aib², Dap³(Octanesulfonyl), 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), 2-Fua⁹)hGhrelin(1-28)-NH₂;
 (Aib², Dap³(Octanesulfonyl), Apc⁹)hGhrelin(1-28)-NH₂;
 (Aib^{2,9}, Dap³(Octanesulfonyl))hGhrelin(1-28)-NH₂;

- 5 (Aib^{2,10}, Dap³(Octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), A6c⁵)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), Aib⁶)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), A5c¹²)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
- 10 (Dap³(Octanesulfonyl), A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), Act⁶)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), Dmt⁷)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), Thz⁷)hGhrelin(1-28)-NH₂;
- 15 (Dap³(Octanesulfonyl), A5c⁵)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), Aib⁵)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), hLeu⁵)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), Cha⁵)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), Thr⁶)hGhrelin(1-28)-NH₂;
- 20 (Dap³(Octanesulfonyl), Abu⁶)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), 4Hyp⁷)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), Pip⁷)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), Dhp⁷)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), Ktp⁷)hGhrelin(1-28)-NH₂;
- 25 (Dap³(Octanesulfonyl), Aib⁸)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), 2-Pal⁹)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), 4-Pal⁹)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), Taz⁹)hGhrelin(1-28)-NH₂;
- 30 (Dap³(Octanesulfonyl), 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), 2-Fua⁹)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), Apc⁹)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), Aib⁹)hGhrelin(1-28)-NH₂;

- 5 (Dap³(Octanesulfonyl), Aib¹⁰)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Dab³(Octanesulfonyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², A6c⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (A6c⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
- 10 (Aib^{2,6}, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Act⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², 3-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Dmt⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Thz⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
- 15 (Aib², A5c⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,5}, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², hLeu⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Cha⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
- 20 (Aib², Thr⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Abu⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², 4Hyp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Pip⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Dhp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
- 25 (Aib², Ktp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², 2-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², 3-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², 4-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
- 30 (Aib², Taz⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², 2-Thi⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², 2-Fua⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Apc⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;

- 5 (Aib^{2,9}, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Dap³(Octanesulfonyl), A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Dab³(Octanesulfonyl), A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², A6c⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
- 10 (A6c⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Act⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², 3-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Dmt⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
- 15 (Aib², Thz⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², A5c^{5,12}, Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,5}, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², hLeu⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Cha⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
- 20 (Aib^{2,6}, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Thr⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Abu⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², 4Hyp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Pip⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
- 25 (Aib², Dhp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Ktp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², 2-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², 3-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
- 30 (Aib², 4-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Taz⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², 2-Thi⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², 2-Fua⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;

- 5 (Aib², Apc⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,9}, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (A6c⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
- 10 (Act⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (3-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Dmt⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Thz⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (A5c⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
- 15 (Aib⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (hLeu⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Cha⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Thr⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
- 20 (Abu⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (4Hyp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Pip⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Dhp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Ktp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
- 25 (Aib⁸, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (2-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (3-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (4-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Taz⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
- 30 (2-Thi⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (2-Fua⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Apc⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;

- 5 (Aib¹⁰, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (A5c⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Act⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (3-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
- 10 (Dmt⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Thz⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (hLeu⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Cha⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
- 15 (Thr⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Abu⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (4Hyp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Pip⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Dhp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
- 20 (Ktp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib⁸, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (2-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (3-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (4-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
- 25 (Taz⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (2-Thi⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (2-Fua⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Apc⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
- 30 (Aib¹⁰, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), A6c⁵)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), A6c⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, Glu³(NH-Hexyl))hGhrelin(1-28)-NH₂;

- 5 (Aib², Glu³(NH-Hexyl), Act⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Dmt⁷)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Thz⁷)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), A5c⁵)hGhrelin(1-28)-NH₂;
- 10 (Aib^{2,5}, Glu³(NH-Hexyl))hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), hLeu⁵)hGhrelin(1-28)-NH₂;
 (Aib², Cha⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, Glu³(NH-Hexyl))hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Thr⁶)hGhrelin(1-28)-NH₂;
- 15 (Aib², Glu³(NH-Hexyl), Abu⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-hexyl), 4-Hyp⁷)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Pip⁷)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Dhp⁷)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Ktp⁷)hGhrelin(1-28)-NH₂;
- 20 (Aib^{2,8}, Glu³(NH-Hexyl))hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 2-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 4-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Taz⁹)hGhrelin(1-28)-NH₂;
- 25 (Aib², Glu³(NH-Hexyl), 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 2-Fua⁹)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Apc⁹)hGhrelin(1-28)-NH₂;
 (Aib^{2,9}, Glu³(NH-Hexyl))hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu³(NH-Hexyl))hGhrelin(1-28)-NH₂;
- 30 (Glu³(NH-Hexyl), Aib⁶)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), A5c⁵)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), Act⁶)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), 3-Pal⁹)hGhrelin(1-28)-NH₂;

- 5 (Glu³(NH-Hexyl), Dmt⁷)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), Thz⁷)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), Aib⁵)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), hLeu⁵)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), Cha⁵)hGhrelin(1-28)-NH₂;
- 10 (Glu³(NH-Hexyl), Thr⁶)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), Abu⁶)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), 4Hyp⁷)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), Pip⁷)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), Dhp⁷)hGhrelin(1-28)-NH₂;
- 15 (Glu³(NH-Hexyl), Ktp⁷)hGhrelin(1-28)-NH₂;
 (Glu³(NH-hexyl), Aib⁸)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), 2-Pal⁹)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), 4-Pal⁹)hGhrelin(1-28)-NH₂;
- 20 (Glu³(NH-Hexyl), Taz⁹)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), 2-Fua⁹)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), Apc⁹)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), Aib⁹)hGhrelin(1-28)-NH₂;
- 25 (Glu³(NH-Hexyl), Aib¹⁰)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), A6c⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (A6c⁵, Glu³(NH-Hexyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, Glu³(NH-Hexyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Act⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
- 30 (Aib², Glu³(NH-Hexyl), 3-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Dmt⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Thz⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), A5c⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;

- 5 (Aib^{2,5}, Glu³(NH-Hexyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², hLeu⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Cha⁵, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, Glu³(NH-Hexyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Thr⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 10 (Aib², Glu³(NH-Hexyl), Abu⁶, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 4Hyp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Pip⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Dhp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Ktp⁷, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 15 (Aib^{2,8}, Glu³(NH-Hexyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 2-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 3-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 4-Pal⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Taz⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 20 (Aib², Glu³(NH-Hexyl), 2-Thi⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 2-Fua⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Apc⁹, A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,9}, Glu³(NH-Hexyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,12}, Glu³(NH-Hexyl), 4-Pal⁹, Orn¹⁵)hGhrelin(1-28)-NH₂;
 25 (Aib^{2,10}, Glu³(NH-Hexyl), A5c¹², Orn¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), A6c⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl), A6c⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, Glu³(NH-Hexyl), A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Act⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 30 (Aib², Glu³(NH-Hexyl), 3-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Dmt⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Thz⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), A5c^{5,12}, Apc¹⁶)hGhrelin(1-28)-NH₂;

- 5 (Aib^{2,5}, Glu³(NH-Hexyl), A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), hLeu⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Cha⁵, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, Glu³(NH-Hexyl), A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Thr⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 10 (Aib², Glu³(NH-Hexyl), Abu⁶, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 4Hyp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Pip⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Dhp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Ktp⁷, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 15 (Aib^{2,8}, Glu³(NH-Hexyl), A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 2-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 3-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 4-Pal⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Taz⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 20 (Aib², Glu³(NH-Hexyl), 2-Thi⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), 2-Fua⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu³(NH-Hexyl), Apc⁹, A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,9}, Glu³(NH-Hexyl), A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu³(NH-Hexyl), A5c¹², Apc¹⁶)hGhrelin(1-28)-NH₂;
 25 (Glu³(O-hexyl))hGhrelin(1-28)-NH₂;
 (Aib²)hGhrelin(1-28)-NH₂;
 (Glu³(NH-Hexyl))hGhrelin(1-28)-NH₂;
 (Aib², Glu³(O-Hexyl))hGhrelin(1-28)-NH₂;
 (Aib¹, Glu³(O-Hexyl))hGhrelin(1-28)-NH₂;
 30 (Aib², Glu³(NH-Hexyl))hGhrelin(1-28)-NH₂;
 (Dap³(1-Octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Aib², Dap³(1-Octanesulfonyl))hGhrelin(1-28)-NH₂;
 (Aib¹, Dap³(1-Octanesulfonyl))hGhrelin(1-28)-NH₂;

- 5 (Ava², Dap³(1-Octanesulfonyl))hGhrelin(2-28)-NH₂;
 (Ac-Gly¹)hGhrelin(1-5)-NH₂;
 (Ac-Gly¹)hGhrelin(1-6)-NH₂;
 (Ac-Gly¹)hGhrelin(1-7)-NH₂;
 (Ac-Gly¹, Aib²)hGhrelin(1-28)-NH₂;
- 10 (Ac-Gly¹, Aib², Glu³(NH-Hexyl))hGhrelin(1-5)-NH₂;
 (Ac-Gly¹, Aib², Glu³(NH-Hexyl))hGhrelin(1-6)-NH₂;
 (Ac-Gly¹, Aib², Glu³(NH-Hexyl))hGhrelin(1-7)-NH₂;
 (Ac-Gly¹, Aib², Glu³(NH-Hexyl))hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu³(NH-Hexyl), Arg⁸)hGhrelin(1-8)-NH₂;
- 15 (Ac-Gly¹, Aib², Glu³(NH-Hexyl), Lys⁸)hGhrelin(1-8)-NH₂;
 (n-Butyryl-Gly¹)hGhrelin(1-28)-NH₂;
 (n-Butyryl-Gly¹, Aib², Glu³(NH-Hexyl))hGhrelin(1-28)-NH₂;
 (Isobutyryl-Gly¹)hGhrelin(1-28)-NH₂; or
 (n-Octanoyl-Gly¹)hGhrelin(1-28)-NH₂;
- 20 or a pharmaceutically acceptable salt thereof.
 Cys³(S(CH₂)₉CH₃)hGhrelin(1-28)-NH₂;
 (Aib², Ser³)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, Ser³)hGhrelin(1-28)-NH₂;
 (Aib², Ser³, 3Pal⁹)hGhrelin(1-28)-NH₂;
- 25 (Aib², Ser³, Thz⁷)hGhrelin(1-28)-NH₂;
 (Aib², Ser³, Cha⁵)hGhrelin(1-28)-NH₂;
 (Aib², Ser³, Abu⁶)hGhrelin(1-28)-NH₂;
 (Aib², Ser³, 4Hyp⁷)hGhrelin(1-28)-NH₂;
 (Aib², Ser³, Taz⁹)hGhrelin(1-28)-NH₂;
- 30 (Aib², Ser³, Dhp⁷)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Ser³)hGhrelin(1-28)-NH₂;
 (Aib², Ser³, Pip⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Ser³)hGhrelin(1-28)-NH₂;

- 5 (Aib^{2,10}, Ser³)hGhrelin(1-28)-NH₂;
 (n-Butyryl-Gly¹, Aib², Ser³)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Ser³)hGhrelin(1-28)-NH₂;
 (Aib², Ser³, Tic⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Ser³, Arg⁸)hGhrelin(1-28)-NH₂;
- 10 (Ser³, Aib⁸)hGhrelin(1-28)-NH₂;
 (Ser³, Taz⁹)hGhrelin(1-28)-NH₂;
 (Ser³, 3Pal⁹)hGhrelin(1-28)-NH₂;
 (Ser³, 4Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Ser³, 2Thi⁹)hGhrelin(1-28)-NH₂;
- 15 (Ser³, 2Thi⁹)hGhrelin(1-28)-NH₂;
 (Ser³, 4Hyp⁷)hGhrelin(1-28)-NH₂;
 (Aib², Ser³, Tic⁷)hGhrelin(1-28)-NH₂;
 (Aib², Thr³)hGhrelin(1-28)-NH₂;
 (Aib^{2,6}, Thr³)hGhrelin(1-28)-NH₂;
- 20 (A5c⁵, Thr³)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, 3Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, Thz⁷)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, Cha⁵)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, Abu⁶)hGhrelin(1-28)-NH₂;
- 25 (Aib², Thr³, 4Hyp⁷)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, Taz⁹)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, Dhp⁷)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Thr³)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, Pip⁷)hGhrelin(1-28)-NH₂;
- 30 (Ac-Gly¹, Aib^{2,10}, Thr³)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Thr³)hGhrelin(1-28)-NH₂;
 (n-Butyryl-Gly¹, Aib², Thr³)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Thr³)hGhrelin(1-28)-NH₂;

- 5 (Aib², Thr³, Tic⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Thr³, Arg⁸)hGhrelin(1-28)-NH₂;
 (Thr³, Aib⁸)hGhrelin(1-28)-NH₂;
 (Thr³, Taz⁹)hGhrelin(1-28)-NH₂;
 (Thr³, 3Pal⁹)hGhrelin(1-28)-NH₂;
 10 (Thr³, 4Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, 2Thi⁹)hGhrelin(1-28)-NH₂;
 (Thr³, 2Thi⁹)hGhrelin(1-28)-NH₂;
 (Thr³, 4Hyp⁷)hGhrelin(1-28)-NH₂;
 (Aib², Thr³, Tic⁷)hGhrelin(1-28)-NH₂;
 15 (Ac-Gly¹, Glu³(NH-Hexyl))hGhrelin(1-28)-NH₂; or
 H-Inp-D-1Nal-D-Trp-3Pal-Lys-NH₂;
 H-Inp-D-2Nal-D-Trp-4Pal-Lys-NH₂;
 H-Inp-D-2-Nal-D-Trp-Orn-Lys-NH₂;
 H-Inp-D-Bip-D-Trp-Phe-Lys-NH₂;
 20 H-Inp-D-2-Nal-D-Trp-Thr(Bzl)-Lys-NH₂;
 H-Inp-D-2-Nal-D-Trp-Pff-Lys-NH₂;
 H-Inp-D-2Nal-D-Trp-2-Thi-Lys-NH₂;
 H-Inp-D-2Nal-D-Trp-Taz-Lys-NH₂;
 H-Inp-D-Dip-D-Trp-Phe-Lys-NH₂;
 25 H-Inp-D-Bpa-D-Trp-Phe-Lys-NH₂;
 H-Inp-D-2Nal-D-Bpa-Phe-Lys-NH₂;
 H-Inp-D-2Nal-D-Trp-3Pal-NH₂;
 H-Inp-D-2Nal-D-Trp-4Pal-NH₂;
 H-Inp-D-1Nal-D-Trp-3Pal-NH₂;
 30 H-Inp-D-Bip-D-Trp-Phe-NH₂;
 H-Inp-D-2Nal-D-Trp-Thr(Bzl)-NH₂;
 H-Inp-D-2Nal-D-Trp-Pff-NH₂;
 H-Inp-D-2-Nal-D-Trp-2-Thi-NH₂;

- 5 H-Inp-D-2-Nal-D-Trp-Taz-NH₂;
H-Inp-D-Dip-D-Trp-Phe-NH₂;
H-Inp-D-2-Nal-D-Dip-Phe-NH₂;
H-Inp-D-Bal-D-Trp-Phe-NH₂;
H-Inp-D-2-Nal-D-Bal-Phe-NH₂;
- 10 H-Inp-D-2Nal-D-Trp-3Pal-Lys-NH₂;
H-Inp-D-Trp-D-2-Nal(Ψ)-Pim;
H-Inp-D-Bal-D-Trp-2-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Trp-Phe-Lys-NH₂;
H-Inp-D-1Nal-D-Trp-2Thi-Lys-NH₂;
- 15 H-Inp-D-2-Nal-D-Trp-Phe-Apc-NH₂;
H-Inp-D-1-Nal-D-Trp-Phe-Apc-NH₂;
H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂;
H-Apc-D-2Nal-D-Trp-Phe-Lys-NH₂;
H-Apc-D-1Nal-D-Trp-2Thi-Lys-NH₂;
- 20 H-Inp-D-1-Nal-D-Trp-2-Thi-NH₂;
H-Apc-D-1-Nal-D-Trp-Phe-NH₂;
H-Inp-D-2-Nal-D-Trp(Ψ)-Pim;
H-Inp-D-1Nal-D-Trp(Ψ)-Pim;
H-Inp-D-Bal-D-Trp(Ψ)-Pim;
- 25 H-Aib-D-Ser(Bzl)-D-Trp(Ψ)-Pim;
H-Inp-D-1-Nal-D-Trp-Taz-Lys-NH₂;
H-Inp-D-Bal-D-Trp-Taz-Lys-NH₂;
H-Apc-D-1Nal-D-Trp-Taz-Lys-NH₂;
H-Apc-D-Bal-D-Trp-Taz-Lys-NH₂;
- 30 H-Apc-D-Bal-D-Trp-2-Thi-Lys-NH₂;
H-Apc-D-Bal-D-Trp-Phe-Lys-NH₂;
H-Apc-D-1-Nal-D-Trp-Phe-Apc-NH₂;
H-Apc-D-Bal-D-Trp-Phe-Apc-NH₂;

- 5 H-Apc-D-1Nal-D-1Nal-Phe-Apc-NH₂;
H-Apc-D-1-Nal-D-2-Nal-Phe-Apc-NH₂;
H-Apc-D-1Nal-D-1Nal-Phe-Lys-NH₂;
H-Apc-D-Bal-D-1Nal-Phe-Apc-NH₂;
H-Apc-D-Bal-D-2-Nal-Phe-Apc-NH₂;
10 H-Apc-D-Bal-D-1Nal-Phe-Lys-NH₂;
H-Apc-D-Bal-D-2Nal-Phe-Lys-NH₂;
H-Apc-D-1Nal-D-Trp-2Thi-NH₂;
H-Apc-D-Bal-D-Trp-Phe-NH₂;
H-Apc-D-1-Nal-D-Trp-Taz-NH₂;
15 H-Apc-D-Bal-D-Trp-2Thi-NH₂;
H-Apc-D-Bal-D-Trp-Taz-NH₂;
H-Apc-D-2Nal-D-Trp-2-Thi-NH₂;
H-Apc-D-2-Nal-D-Trp-Taz-NH₂;
H-Inp-D-1Nal-D-Trp-Taz-Apc-NH₂;
20 H-Inp-D-Bal-D-Trp-Taz-Apc-NH₂;
H-Apc-D-1-Nal-D-Trp-Taz-Apc-NH₂;
H-Apc-D-Bal-D-Trp-Taz-Apc-NH₂;
H-Apc-D-1-Nal-D-Trp-2-Fua-Apc-NH₂;
H-Apc-D-1-Nal-D-Trp-2-Fua-Lys-NH₂;
25 H-Apc-D-1-Nal-D-Trp-2-Fua-NH₂;
H-Apc-D-1-Nal-D-Trp-2-Pal-NH₂;
H-Apc-D-1-Nal-D-Trp-3-Pal-NH₂;
H-Apc-D-1-Nal-D-Trp-3-Thi-Apc-NH₂;
H-Apc-D-1-Nal-D-Trp-3-Thi-Lys-NH₂;
30 H-Apc-D-1-Nal-D-Trp-3-Thi-NH₂;
H-Apc-D-1-Nal-D-Trp-4-Pal-NH₂;
H-Apc-D-1-Nal-D-Trp-Pff-Apc-NH₂;
H-Apc-D-1-Nal-D-Trp-Pff-Lys-NH₂;

- 5 H-Apc-D-1-Nal-D-Trp-Pff-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Fua-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Fua-Lys-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Fua-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Pal-NH₂;
10 H-Apc-D-2-Nal-D-Trp-2-Thi-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Thi-Lys-NH₂;
H-Apc-D-2-Nal-D-Trp-3-Pal-NH₂;
H-Apc-D-2-Nal-D-Trp-3-Thi-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-3-Thi-Lys-NH₂;
15 H-Apc-D-2-Nal-D-Trp-3-Thi-NH₂;
H-Apc-D-2-Nal-D-Trp-4-Pal-NH₂;
H-Apc-D-2-Nal-D-Trp-Pff-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-Pff-Lys-NH₂;
H-Apc-D-2-Nal-D-Trp-Pff-NH₂;
20 H-Apc-D-2-Nal-D-Trp-Taz-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-Taz-Lys-NH₂;
H-Apc-D-Bal-D-Bal-2-Fua-Apc-NH₂;
H-Apc-D-Bal-D-Bal-2-Fua-Lys-NH₂;
H-Apc-D-Bal-D-Bal-2-Fua-NH₂;
25 H-Apc-D-Bal-D-Bal-2-Pal-NH₂;
H-Apc-D-Bal-D-Bal-2-Thi-Apc-NH₂;
H-Apc-D-Bal-D-Bal-2-Thi-Lys-NH₂;
H-Apc-D-Bal-D-Bal-2-Thi-NH₂;
H-Apc-D-Bal-D-Bal-3-Pal-NH₂;
30 H-Apc-D-Bal-D-Bal-3-Thi-Apc-NH₂;
H-Apc-D-Bal-D-Bal-3-Thi-Lys-NH₂;
H-Apc-D-Bal-D-Bal-3-Thi-NH₂;
H-Apc-D-Bal-D-Bal-4-Pal-NH₂;

- 5 H-Apc-D-Bal-D-Bal-Pff-Apc-NH₂;
H-Apc-D-Bal-D-Bal-Pff-Lys-NH₂;
H-Apc-D-Bal-D-Bal-Pff-NH₂;
H-Apc-D-Bal-D-Bal-Phe-Apc-NH₂;
H-Apc-D-Bal-D-Bal-Phe-Lys-NH₂;
10 H-Apc-D-Bal-D-Bal-Phe-NH₂;
H-Apc-D-Bal-D-Bal-Taz-Apc-NH₂;
H-Apc-D-Bal-D-Bal-Taz-Lys-NH₂;
H-Apc-D-Bal-D-Bal-Taz-NH₂;
H-Apc-D-Bal-D-Trp-2-Fua-Apc-NH₂;
15 H-Apc-D-Bal-D-Trp-2-Fua-Lys-NH₂;
H-Apc-D-Bal-D-Trp-2-Fua-NH₂;
H-Apc-D-Bal-D-Trp-2-Pal-NH₂;
H-Apc-D-Bal-D-Trp-3-Pal-NH₂;
H-Apc-D-Bal-D-Trp-3-Thi-Apc-NH₂;
20 H-Apc-D-Bal-D-Trp-3-Thi-Lys-NH₂;
H-Apc-D-Bal-D-Trp-3-Thi-NH₂;
H-Apc-D-Bal-D-Trp-4-Pal-NH₂;
H-Apc-D-Bal-D-Trp-Pff-Apc-NH₂;
H-Apc-D-Bal-D-Trp-Pff-Lys-NH₂;
25 H-Apc-D-Bal-D-Trp-Pff-NH₂;
H-Inp-D-1-Nal-D-Bal-2-Fua-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-2-Fua-NH₂;
H-Inp-D-1-Nal-D-Bal-2-Thi-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-3-Thi-Lys-NH₂;
30 H-Inp-D-1-Nal-D-Bal-Pff-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-Pff-NH₂;
H-Inp-D-1-Nal-D-Bal-Phe-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-Taz-Lys-NH₂;

- 5 H-Inp-D-1-Nal-D-Bal-Taz-NH₂;
H-Inp-D-1-Nal-D-Trp-2-Fua-Apc-NH₂;
H-Inp-D-1-Nal-D-Trp-2-Fua-Lys-NH₂;
H-Inp-D-1-Nal-D-Trp-2-Fua-NH₂;
H-Inp-D-1-Nal-D-Trp-3-Thi-Apc-NH₂;
10 H-Inp-D-1-Nal-D-Trp-3-Thi-Lys-NH₂;
H-Inp-D-1-Nal-D-Trp-Pff-Apc-NH₂;
H-Inp-D-1-Nal-D-Trp-Pff-Lys-NH₂;
H-Inp-D-1-Nal-D-Trp-Pff-NH₂;
H-Inp-D-1-Nal-D-Trp-Taz-NH₂;
15 H-Inp-D-2-Nal-D-Trp-2-Fua-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-2-Fua-NH₂;
H-Inp-D-2-Nal-D-Trp-2-Thi-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-3-Thi-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-3-Thi-Lys-NH₂;
20 H-Inp-D-2-Nal-D-Trp-3-Thi-NH₂;
H-Inp-D-2-Nal-D-Trp-Pff-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-Pff-NH₂;
H-Inp-D-2-Nal-D-Trp-Taz-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-Taz-NH₂;
25 H-Inp-D-Bal-D-Bal-2-Fua-Lys-NH₂;
H-Inp-D-Bal-D-Bal-2-Fua-NH₂;
H-Inp-D-Bal-D-Bal-2-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Bal-3-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Bal-Pff-Lys-NH₂;
30 H-Inp-D-Bal-D-Bal-Pff-NH₂;
H-Inp-D-Bal-D-Bal-Phe-Lys-NH₂;
H-Inp-D-Bal-D-Bal-Taz-Lys-NH₂;
H-Inp-D-Bal-D-Bal-Taz-NH₂;

- 5 H-Inp-D-Bal-D-Trp-2-Fua-Apc-NH₂;
H-Inp-D-Bal-D-Trp-2-Fua-Lys-NH₂;
H-Inp-D-Bal-D-Trp-2-Fua-NH₂;
H-Inp-D-Bal-D-Trp-3-Thi-Apc-NH₂;
H-Inp-D-Bal-D-Trp-3-Thi-Lys-NH₂;
10 H-Inp-D-Bal-D-Trp-Pff-Apc-NH₂;
H-Inp-D-Bal-D-Trp-Pff-Lys-NH₂;
H-Inp-D-Bal-D-Trp-Pff-NH₂;
H-Inp-D-Bal-D-Trp-Taz-NH₂;
H-Inp-D-Bip-D-Bal-2-Fua-Lys-NH₂;
15 H-Inp-D-Bip-D-Bal-2-Fua-NH₂;
H-Inp-D-Bip-D-Bal-2-Thi-Lys-NH₂;
H-Inp-D-Bip-D-Bal-3-Thi-Lys-NH₂;
H-Inp-D-Bip-D-Bal-Pff-Lys-NH₂;
H-Inp-D-Bip-D-Bal-Pff-NH₂; or
20 H-Inp-D-Bip-D-Bal-Taz-Lys-NH₂;
H-Inp-D-Bip-D-Bal-Taz-NH₂;
H-Inp-D-Bip-D-Trp-2-Fua-Lys-NH₂;
H-Inp-D-Bip-D-Trp-2-Fua-NH₂;
H-Inp-D-Bip-D-Trp-2-Thi-Lys-NH₂;
25 H-Inp-D-Bip-D-Trp-3-Thi-Lys-NH₂;
H-Inp-D-Bip-D-Trp-Pff-Lys-NH₂;
H-Inp-D-Bip-D-Trp-Pff-NH₂;
H-Inp-D-Bip-D-Trp-Taz-Lys-NH₂; or
H-Inp-D-Bip-D-Trp-Taz-NH₂;
30 H-Inp-D-1-Nal-D-Trp-3-Pal-Lys-NH₂;
H-Inp-D-2-Nal-D-Trp-4-Pal-Lys-NH₂;
H-Inp-D-2-Nal-D-Trp-Orn-Lys-NH₂;
H-Inp-D-Bip-D-Trp-Phe-Lys-NH₂;

- 5 H-Inp-D-2-Nal-D-Trp-Thr(Bzl)-Lys-NH₂;
H-Inp-D-2-Nal-D-Trp-Pff-Lys-NH₂;
H-Inp-D-2-Nal-D-Trp-2-Thi-Lys-NH₂;
H-Inp-D-2-Nal-D-Trp-Taz-Lys-NH₂;
H-Inp-D-Dip-D-Trp-Phe-Lys-NH₂;
- 10 H-Inp-D-Bpa-D-Trp-Phe-Lys-NH₂;
H-Inp-D-2-Nal-D-Bpa-Phe-Lys-NH₂;
H-Inp-D-2-Nal-D-Trp-Thr(Bzl)-NH₂;
H-Inp-D-2-Nal-D-Trp-Pff-NH₂;
H-Inp-D-2-Nal-D-Trp-Taz-NH₂;
- 15 H-Inp-D-2-Nal-D-Dip-Phe-NH₂;
H-Inp-D-2-Nal-D-Trp-3-Pal-Lys-NH₂;
H-Inp-D-Trp-D-2-Nal(Ψ)-Pim;
H-Inp-D-Bal-D-Trp-2-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Trp-Phe-Lys-NH₂;
- 20 H-Inp-D-1-Nal-D-Trp-2-Thi-Lys-NH₂;
H-Inp-D-2-Nal-D-Trp-Phe-Apc-NH₂;
H-Inp-D-1-Nal-D-Trp-Phe-Apc-NH₂;
H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-Phe-Lys-NH₂;
- 25 H-Apc-D-1-Nal-D-Trp-2-Thi-Lys-NH₂;
H-Inp-D-2-Nal-D-Trp(Ψ)-Pim;
H-Inp-D-1-Nal-D-Trp(Ψ)-Pim;
H-Inp-D-Bal-D-Trp(Ψ)-Pim;
H-Aib-D-Ser(Bzl)-D-Trp(Ψ)-Pim;
- 30 H-Inp-D-1-Nal-D-Trp-Taz-Lys-NH₂;
H-Inp-D-Bal-D-Trp-Taz-Lys-NH₂;
H-Apc-D-1-Nal-D-Trp-Taz-Lys-NH₂;
H-Apc-D-Bal-D-Trp-Taz-Lys-NH₂;

- 5 H-Apc-D-Bal-D-Trp-2-Thi-Lys-NH₂;
H-Apc-D-Bal-D-Trp-Phe-Lys-NH₂;
H-Apc-D-1-Nal-D-Trp-Phe-Apc-NH₂;
H-Apc-D-Bal-D-Trp-Phe-Apc-NH₂;
H-Apc-D-1-Nal-D-1-Nal-Phe-Apc-NH₂;
10 H-Apc-D-1-Nal-D-2-Nal-Phe-Apc-NH₂;
H-Apc-D-1-Nal-D-1-Nal-Phe-Lys-NH₂;
H-Apc-D-Bal-D-1-Nal-Phe-Apc-NH₂;
H-Apc-D-Bal-D-2-Nal-Phe-Apc-NH₂;
H-Apc-D-Bal-D-1-Nal-Phe-Lys-NH₂;
15 H-Apc-D-Bal-D-2-Nal-Phe-Lys-NH₂;
H-Apc-D-1-Nal-D-Trp-2-Thi-NH₂;
H-Apc-D-Bal-D-Trp-Phe-NH₂;
H-Apc-D-1-Nal-D-Trp-Taz-NH₂;
H-Apc-D-Bal-D-Trp-2-Thi-NH₂;
20 H-Apc-D-Bal-D-Trp-Taz-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Thi-NH₂;
H-Apc-D-2-Nal-D-Trp-Taz-NH₂;
H-Inp-D-1-Nal-D-Trp-Taz-Apc-NH₂;
H-Inp-D-Bal-D-Trp-Taz-Apc-NH₂;
25 H-Apc-D-1-Nal-D-Trp-Taz-Apc-NH₂;
H-Apc-D-Bal-D-Trp-Taz-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-3-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Trp-3-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Trp-2-Fua-Lys-NH₂;
30 H-Inp-D-Bal-D-Trp-Pff-Lys-NH₂;
H-Inp-D-Bal-D-Trp-3-Thi-Apc-NH₂;
H-Inp-D-Bal-D-Trp-2-Fua-Apc-NH₂;
H-Inp-D-Bal-D-Trp-Pff-Apc-NH₂;

- 5 H-Apc-D-Bal-D-Trp-3-Thi-Lys-NH₂;
H-Apc-D-Bal-D-Trp-2-Fua-Lys-NH₂;
H-Apc-D-Bal-D-Trp-Pff-Lys-NH₂;
H-Inp-D-Bal-D-Bal-Phe-Lys-NH₂;
H-Inp-D-Bal-D-Bal-2-Thi-Lys-NH₂;
10 H-Inp-D-Bal-D-Bal-3-Thi-Lys-NH₂;
H-Inp-D-Bal-D-Bal-Taz-Lys-NH₂;
H-Inp-D-Bal-D-Bal-2-Fua-Lys-NH₂;
H-Inp-D-Bal-D-Bal-Pff-Lys-NH₂;
H-Apc-D-Bal-D-Bal-Phe-Lys-NH₂;
15 H-Apc-D-Bal-D-Bal-2-Thi-Lys-NH₂;
H-Apc-D-Bal-D-Bal-3-Thi-Lys-NH₂;
H-Apc-D-Bal-D-Bal-Taz-Lys-NH₂;
H-Apc-D-Bal-D-Bal-2-Fua-Lys-NH₂;
H-Apc-D-Bal-D-Bal-Pff-Lys-NH₂;
20 H-Inp-D-1-Nal-D-Trp-3-Thi-Lys-NH₂;
H-Inp-D-1-Nal-D-Trp-2-Fua-Lys-NH₂;
H-Inp-D-1-Nal-D-Trp-Pff-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-Phe-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-2-Thi-Lys-NH₂;
25 H-Inp-D-1-Nal-D-Bal-3-Thi-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-Taz-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-2-Fua-Lys-NH₂;
H-Inp-D-1-Nal-D-Bal-Pff-Lys-NH₂;
H-Inp-D-2-Nal-D-Trp-2-Thi-Apc-NH₂;
30 H-Inp-D-2-Nal-D-Trp-3-Thi-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-Taz-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-2-Fua-Apc-NH₂;
H-Inp-D-2-Nal-D-Trp-Pff-Apc-NH₂;

- 5 H-Inp-D-1-Nal-D-Trp-3-Thi-Apc-NH₂;
H-Inp-D-1-Nal-D-Trp-2-Fua-Apc-NH₂;
H-Inp-D-1-Nal-D-Trp-Pff-Apc-NH₂;
H-Apc-D-1-Nal-D-Trp-3-Thi-Lys-NH₂;
H-Apc-D-1-Nal-D-Trp-2-Fua-Lys-NH₂;
10 H-Apc-D-1-Nal-D-Trp-Pff-Lys-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Thi-Lys-NH₂;
H-Apc-D-2-Nal-D-Trp-3-Thi-Lys-NH₂;
H-Apc-D-2-Nal-D-Trp-Taz-Lys-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Fua-Lys-NH₂;
15 H-Apc-D-2-Nal-D-Trp-Pff-Lys-NH₂;
H-Inp-D-Bip-D-Trp-2-Thi-Lys-NH₂;
H-Inp-D-Bip-D-Trp-3-Thi-Lys-NH₂;
H-Inp-D-Bip-D-Trp-Taz-Lys-NH₂;
H-Inp-D-Bip-D-Trp-2-Fua-Lys-NH₂;
20 H-Inp-D-Bip-D-Trp-Pff-Lys-NH₂;
H-Inp-D-Bip-D-Bal-2-Thi-Lys-NH₂;
H-Inp-D-Bip-D-Bal-3-Thi-Lys-NH₂;
H-Inp-D-Bip-D-Bal-Taz-Lys-NH₂;
H-Inp-D-Bip-D-Bal-2-Fua-Lys-NH₂;
25 H-Inp-D-Bip-D-Bal-Pff-Lys-NH₂;
H-Apc-D-Bal-D-Trp-3-Thi-Apc-NH₂;
H-Apc-D-Bal-D-Trp-2-Fua-Apc-NH₂;
H-Apc-D-Bal-D-Trp-Pff-Apc-NH₂;
H-Apc-D-Bal-D-Bal-Phe-Apc-NH₂;
30 H-Apc-D-Bal-D-Bal-2-Thi-Apc-NH₂;
H-Apc-D-Bal-D-Bal-3-Thi-Apc-NH₂;
H-Apc-D-Bal-D-Bal-Taz-Apc-NH₂;
H-Apc-D-Bal-D-Bal-2-Fua-Apc-NH₂;

- 5 H-Apc-D-Bal-D-Bal-Pff-Apc-NH₂;
H-Apc-D-1-Nal-D-Trp-3-Thi-Apc-NH₂;
H-Apc-D-1-Nal-D-Trp-2-Fua-Apc-NH₂;
H-Apc-D-1-Nal-D-Trp-Pff-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Thi-Apc-NH₂;
10 H-Apc-D-2-Nal-D-Trp-3-Thi-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-Taz-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Fua-Apc-NH₂;
H-Apc-D-2-Nal-D-Trp-Pff-Apc-NH₂;
H-Inp-D-Bal-D-Trp-Taz-NH₂;
15 H-Inp-D-Bal-D-Trp-2-Fua-NH₂;
H-Inp-D-Bal-D-Trp-Pff-NH₂;
H-Apc-D-Bal-D-Trp-3-Thi-NH₂;
H-Apc-D-Bal-D-Trp-2-Fua-NH₂;
H-Apc-D-Bal-D-Trp-Pff-NH₂;
20 H-Apc-D-Bal-D-Trp-4-Pal-NH₂;
H-Apc-D-Bal-D-Trp-3-Pal-NH₂;
H-Apc-D-Bal-D-Trp-2-Pal-NH₂;
H-Inp-D-Bal-D-Bal-Taz-NH₂;
H-Inp-D-Bal-D-Bal-2-Fua-NH₂;
25 H-Inp-D-Bal-D-Bal-Pff-NH₂;
H-Apc-D-Bal-D-Bal-Phe-NH₂;
H-Apc-D-Bal-D-Bal-2-Thi-NH₂;
H-Apc-D-Bal-D-Bal-3-Thi-NH₂;
H-Apc-D-Bal-D-Bal-Taz-NH₂;
30 H-Apc-D-Bal-D-Bal-2-Fua-NH₂;
H-Apc-D-Bal-D-Bal-Pff-NH₂;
H-Apc-D-Bal-D-Bal-4-Pal-NH₂;
H-Apc-D-Bal-D-Bal-3-Pal-NH₂;

- 5 H-Apc-D-Bal-D-Bal-2-Pal-NH₂;
H-Inp-D-1-Nal-D-Trp-Taz-NH₂;
H-Inp-D-1-Nal-D-Trp-2-Fua-NH₂;
H-Inp-D-1-Nal-D-Trp-Pff-NH₂;
H-Inp-D-1-Nal-D-Bal-Taz-NH₂;
- 10 H-Inp-D-1-Nal-D-Bal-2-Fua-NH₂;
H-Inp-D-1-Nal-D-Bal-Pff-NH₂;
H-Inp-D-2-Nal-D-Trp-Taz-NH₂;
H-Inp-D-2-Nal-D-Trp-2-Fua-NH₂;
H-Inp-D-2-Nal-D-Trp-Pff-NH₂;
- 15 H-Apc-D-1-Nal-D-Trp-3-Thi-NH₂;
H-Apc-D-1-Nal-D-Trp-2-Fua-NH₂;
H-Apc-D-1-Nal-D-Trp-Pff-NH₂;
H-Apc-D-1-Nal-D-Trp-4-Pal-NH₂;
H-Apc-D-1-Nal-D-Trp-3-Pal-NH₂;
- 20 H-Apc-D-1-Nal-D-Trp-2-Pal-NH₂;
H-Apc-D-2-Nal-D-Trp-3-Thi-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Fua-NH₂;
H-Apc-D-2-Nal-D-Trp-Pff-NH₂;
H-Apc-D-2-Nal-D-Trp-4-Pal-NH₂;
- 25 H-Apc-D-2-Nal-D-Trp-3-Pal-NH₂;
H-Apc-D-2-Nal-D-Trp-2-Pal-NH₂;
H-Inp-D-Bip-D-Trp-Taz-NH₂;
H-Inp-D-Bip-D-Trp-2-Fua-NH₂;
H-Inp-D-Bip-D-Trp-Pff-NH₂;
- 30 H-Inp-D-Bip-D-Bal-Taz-NH₂;
H-Inp-D-Bip-D-Bal-2-Fua-NH₂; or
H-Inp-D-Bip-D-Bal-Pff-NH₂;
H-Inp-D-1Nal-D-Trp-2-Thi-Apc-NH₂;

- 5 H-Inp-D-Bal-D-Trp-2-Thi-Apc-NH₂;
 H-Apc-D-1Nal-D-Trp-2-Thi-Apc-NH₂;
 H-Apc-D-Bal-D-Trp-2-Thi-Apc-NH₂; or
 H-Apc-D-1-Nal-D-Trp-Phe-Lys-NH₂;
 (Ser(n-octanoyl)¹⁵)hGhrelin(1-28)-NH₂;
- 10 (Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;
- 15 (Aib^{2,8}, Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;
 (Ser(n-octanoyl)¹⁶)hGhrelin(1-28)-NH₂;
- 20 (Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
- 25 (Aib^{2,8}, Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
 (Ser(n-octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
- 30 (Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Dap(octanesulfonyl)¹⁷)hGhrelin(1-28)-NH₂;

- 5 (Dap(octanesulfonyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Dap(octanesulfonyl)³, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Dap(octanesulfonyl)³, Ser(n-octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)³, Dap(octanesulfonyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Cys(S-(CH₂)₉CH₃)¹⁷)hGhrelin(1-28)-NH₂;
- 10 (Cys(S-(CH₂)₉CH₃)^{3,17})hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)³, Cys(S-(CH₂)₉CH₃)¹⁷)hGhrelin(1-28)-NH₂;
 (Cys(S-(CH₂)₉CH₃)³, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Cys(S-(CH₂)₉CH₃)³, Ser(n-octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
- 15 (Aib², Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Aib², Thz⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib², 4-Hyp⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib², Dhp⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib², Pip⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
- 20 (Aib², Tic⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,17}, Thz⁷)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,17}, 4-Hyp⁷)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,17}, Dhp⁷)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,17}, Pip⁷)hGhrelin(1-28)-NH₂;
- 25 (Aib², Glu(NH-hexyl)^{3,17}, Tic⁷)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Aib², 3-Pal⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib², 4-Pal⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
- 30 (Aib², Taz⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib², 2-Thi⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,17}, 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,17}, 4-Pal⁹)hGhrelin(1-28)-NH₂;

- 5 (Aib², Glu(NH-hexyl)^{3,17}, Taz⁹)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,17}, 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Aib⁸, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
- 10 (Taz⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (3-Pal⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (4-Pal⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (2-Thi⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,17}, Aib⁸)hGhrelin(1-28)-NH₂;
- 15 (Glu(NH-hexyl)^{3,17}, Taz⁹)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,17}, 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,17}, 4-Pal⁹)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,17}, 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Aib^{1,2,10}, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
- 20 (Aib^{1,2,10}, Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (A5c², Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (A5c², Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Glu(1-heptanol)^{3,17})hGhrelin(1-28)-NH₂;
 (Asp(1-heptanol)^{3,17})hGhrelin(1-28)-NH₂;
- 25 (Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Asp(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Lys(biotinyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ser(n-octanoyl)¹⁸)hGhrelin(1-28)-NH₂;
- 30 (Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;

- 5 (Aib², Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
- 10 (Ser(n-octanoyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,19})hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)¹⁹)hGhrelin(1-28)-NH₂;
- 15 (Aib², Glu(NH-hexyl)^{3,19})hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)^{3,19})hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)^{3,19})hGhrelin(1-28)-NH₂;
- 20 (Ser(n-octanoyl)²⁰)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)²⁰)hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)^{3,20})hGhrelin(1-28)-NH₂;
 (Glu(NH-hexyl)³, Ser(n-octanoyl)²⁰)hGhrelin(1-28)-NH₂;
 (Aib², Glu(NH-hexyl)²⁰)hGhrelin(1-28)-NH₂;
- 25 (Aib², Glu(NH-hexyl)^{3,20})hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)²⁰)hGhrelin(1-28)-NH₂;
 (Aib^{2,8}, Glu(NH-hexyl)^{3,20})hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)²⁰)hGhrelin(1-28)-NH₂;
 (Aib^{2,10}, Glu(NH-hexyl)^{3,20})hGhrelin(1-28)-NH₂;
- 30 (Ac-Gly¹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Ser(n-octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁷)hGhrelin(1-28)-NH₂;

- 5 (Ac-Gly¹, Dap(octanesulfonyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Dap(octanesulfonyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Dap(octanesulfonyl)³, Glu(NH-Hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Dap(octanesulfonyl)³, Ser(n-Octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)³, Dap(octanesulfonyl)¹⁷)hGhrelin(1-28)-NH₂;
- 10 (Ac-Gly¹, Cys(S-(CH₂)₉CH₃)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Cys(S-(CH₂)₉CH₃)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)³, Cys(S-(CH₂)₉CH₃)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Cys(S-(CH₂)₉CH₃)³, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Cys(S-(CH₂)₉CH₃)³, Ser(n-octanoyl)¹⁷)hGhrelin(1-28)-NH₂;
- 15 (Ac-Gly¹, Aib², Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Thz⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², 4-Hyp⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Dhp⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Pip⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
- 20 (Ac-Gly¹, Aib², Tic⁷, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, Thz⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, 4-Hyp⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, Dhp⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, Pip⁷)hGhrelin(1-28)-NH₂;
- 25 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, Tic⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², 3-Pal⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², 4-Pal⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Taz⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
- 30 (Ac-Gly¹, Aib², 2-Thi⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, 4-Pal⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, Taz⁹)hGhrelin(1-28)-NH₂;

- 5 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,17}, 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib⁸, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Taz⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
- 10 (Ac-Gly¹, 3-Pal⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, 4-Pal⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, 2-Thi⁹, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,17}, Aib⁸)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,17}, Taz⁹)hGhrelin(1-28)-NH₂;
- 15 (Ac-Gly¹, Glu(NH-hexyl)^{3,17}, 3-Pal⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,17}, 4-Pal⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,17}, 2-Thi⁹)hGhrelin(1-28)-NH₂;
 (Ac-Aib¹, Aib^{2,10}, Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Aib¹, Aib^{2,10}, Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
- 20 (Ac-Gly¹, A5c², Glu(NH-hexyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, A5c², Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(1-heptanol)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Asp(1-heptanol)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
- 25 (Ac-Gly¹, Asp(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)³, Lys(biotinyl)¹⁷)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Ser(n-octanoyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;
- 30 (Ac-Gly¹, Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;

- 5 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)¹⁵)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)^{3,15})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Ser(n-octanoyl)¹⁶)hGhrelin(1-28)-NH₂;
- 10 (Ac-Gly¹, Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
- 15 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)¹⁶)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)^{3,16})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Ser(n-octanoyl)¹⁸)hGhrelin(1-28)-NH₂;
- 20 (Ac-Gly¹, Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;
- 25 (Ac-Gly¹, Aib^{2,8}, Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)¹⁸)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib^{2,10}, Glu(NH-hexyl)^{3,18})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Ser(n-octanoyl)¹⁹)hGhrelin(1-28)-NH₂;
- 30 (Ac-Gly¹, Glu(NH-hexyl)^{3,19})hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Glu(NH-hexyl)³, Ser(n-octanoyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)¹⁹)hGhrelin(1-28)-NH₂;
 (Ac-Gly¹, Aib², Glu(NH-hexyl)^{3,19})hGhrelin(1-28)-NH₂;

5	(Ac-Gly ¹ , Aib ^{2,8} , Glu(NH-hexyl) ¹⁹)hGhrelin(1-28)-NH ₂ ;	
	(Ac-Gly ¹ , Aib ^{2,8} , Glu(NH-hexyl) ^{3,19})hGhrelin(1-28)-NH ₂ ;	
	(Ac-Gly ¹ , Aib ^{2,10} , Glu(NH-hexyl) ¹⁹)hGhrelin(1-28)-NH ₂ ;	
	(Ac-Gly ¹ , Aib ^{2,10} , Glu(NH-hexyl) ^{3,19})hGhrelin(1-28)-NH ₂ ;	
	(Ac-Gly ¹ , Glu(NH-hexyl) ²⁰)hGhrelin(1-28)-NH ₂ ;	
10	(Ac-Gly ¹ , Ser(n-octanoyl) ²⁰)hGhrelin(1-28)-NH ₂ ;	
	(Ac-Gly ¹ , Glu(NH-hexyl) ^{3,20})hGhrelin(1-28)-NH ₂ ;	
	(Ac-Gly ¹ , Glu(NH-hexyl) ³ , Ser(n-octanoyl) ²⁰)hGhrelin(1-28)-NH ₂ ;	
	(Ac-Gly ¹ , Aib ² , Glu(NH-hexyl) ²⁰)hGhrelin(1-28)-NH ₂ ;	
	(Ac-Gly ¹ , Aib ² , Glu(NH-hexyl) ^{3,20})hGhrelin(1-28)-NH ₂ ;	
15	(Ac-Gly ¹ , Aib ^{2,8} , Glu(NH-hexyl) ²⁰)hGhrelin(1-28)-NH ₂ ;	
	(Ac-Gly ¹ , Aib ^{2,8} , Glu(NH-hexyl) ^{3,20})hGhrelin(1-28)-NH ₂ ;	
	(Ac-Gly ¹ , Aib ^{2,10} , Glu(NH-hexyl) ²⁰)hGhrelin(1-28)-NH ₂ ;	
	(Ac-Gly ¹ , Aib ^{2,10} , Glu(NH-hexyl) ^{3,20})hGhrelin(1-28)-NH ₂ ;	
	(Asp ³ (NH-heptyl))hGhrelin(1-28)-NH ₂	Example #86
20	(des-Ser ²)hGhrelin(1-28)-NH ₂ ; or	Example #104
	(des-Gly ¹ , des-Ser ²)hGhrelin(1-28)-NH ₂ ;	Example #117
	(Aib ¹)hGhrelin(1-28)-NH ₂ ;	Example #6
	(Asp ³ (O-hexyl))hGhrelin(1-28)-NH ₂ ;	Example #40
	(Aib ¹ , Ser ³)hGhrelin(1-28)-NH ₂ ;	
25	(A5c ⁵ , Ser ³)hGhrelin(1-28)-NH ₂ ;	
	(Aib ^{2,4} , Ser ³ , 4-Pal ⁹)hGhrelin(1-28)-NH ₂ ;	
	(n-octanoyl-Gly ¹ , Ser ³)hGhrelin(1-28)-NH ₂ ;	
	(isobutyryl-Gly ¹ , Ser ³)hGhrelin(1-28)-NH ₂ ;	
	(n-butyryl-Gly ¹ , Ser ³)hGhrelin(1-28)-NH ₂ ;	
30	(Aib ¹ , Thr ³)hGhrelin(1-28)-NH ₂ ;	
	(Aib ^{2,4} , Thr ³ , 4-Pal ⁹)hGhrelin(1-28)-NH ₂ ;	
	(n-octanoyl-Gly ¹ , Thr ³)hGhrelin(1-28)-NH ₂ ;	
	(isobutyryl-Gly ¹ , Thr ³)hGhrelin(1-28)-NH ₂ ;	

5 (n-butyryl-Gly¹, Thr³)hGhrelin(1-28)-NH₂;
(Ac-Gly¹)hGhrelin(1-28)-NH₂;
(Ac-Gly¹, Ser³)hGhrelin(1-28)-NH₂,
Aib², Lys(Myristyl)¹⁷)hGhrelin-(1-28)-NH₂; or
Gly(myristyl)¹-(Aib², Lys(Myristyl)¹⁷)hGhrelin-(1-28)-NH₂;

10 The present invention includes diastereomers as well as their racemic and resolved enantiomerically pure forms. Ghrelin analogs can contain D-amino acids, L-amino acids or a combination thereof. Preferably, amino acids present in a ghrelin analog are the L-enantiomers.

Preferred derivatives of analogs of the invention comprise D-amino acids, N-alkyl-amino acids, β-amino acids and/or one or more labeled amino acids (including a
15 labeled version of a D-amino acid, N-alkyl-amino acids, or a β-amino acid). A labeled derivative indicates the alteration of an amino acid or amino acid derivative with a detectable label. Examples of detectable labels include luminescent, enzymatic and radioactive labels. Both the type of label and the position of the label can affect analog
20 activity. Labels should be selected and positioned so as not to substantially alter the activity of the ghrelin analog at the GHS receptor. The effect of a particular label and position on ghrelin activity can be determined using assays measuring ghrelin activity and/or binding.

A therapeutically effective amount depends upon the condition being treated,
25 the route of administration chosen, and the specific activity of the compound used and ultimately will be decided by the attending physician or veterinarian (e.g., between 5 g/day to 5 mg/day). In one embodiment, the peptidyl analog of ghrelin is administered to the patient until the symptoms associated with gastrointestinal dysmotility, for example the abdominal nausea, distension, vomiting, obstipation, inability to eat and
30 cramps often associated with postoperative ileus, observed in patient have been alleviated or ceased.

The ileus treatable by the method of the invention can be ileus of any portion of the gastrointestinal tract, e.g., the stomach, small intestine and/or the colon. The ileus

5 can result from any factor that causes ileus, e.g., surgery, e.g., abdominal surgery such as transplantation surgery (e.g., small intestinal transplantation (SITx)) or abdominal surgery other than transplantation surgery (e.g., abdominal surgery involving laparotomy or not involving laparotomy, e.g., laproscopic procedures); orthopedic surgeries (e.g., hip surgery); parturition; intestinal ischaemia; retroperitoneal
10 haematoma; intraabdominal sepsis; intraperitoneal inflammation, e.g., acute appendicitis, choecystitis, pancreatitis; fractures of the spine; ureteric colic; thoracic lesions; basal pneumonia; rib fractures; myocardial infarction; metabolic disturbances; or any combination thereof.

The peptidyl analog of ghrelin may be injected parenterally, e.g., intravenously,
15 into the bloodstream of the subject being treated, however, it will be readily appreciated by those skilled in the art that the route, such as intravenous, subcutaneous, intramuscular, intraperitoneal, enterally, transdermally, transmucously, sustained released polymer compositions (e.g., a lactic acid polymer or copolymer microparticle or implant), profusion, nasal, oral, etc., will vary with the condition being treated and the
20 activity and bioavailability of the peptidyl analog of ghrelin being used.

While it is possible for the peptidyl analog of ghrelin to be administered as the pure or substantially pure compound, it may also be presented as a pharmaceutical formulation or preparation. The formulations to be used in the present invention, for both humans and animals, comprise any of the peptidyl analog of ghrelin to be
25 described below, together with one or more pharmaceutically acceptable carriers thereof, and optionally other therapeutic ingredients.

The carrier must be "acceptable" in the sense of being compatible with the active ingredient(s) of the formulation (e.g., capable of stabilizing peptides) and not deleterious to the subject to be treated. Desirably, the formulation should not include oxidizing
30 agents or other substances with which peptides are known to be incompatible. Highly oxidative conditions can lead to the formation of cysteine sulfoxide and to the oxidation of tryptophan. Consequently, it is important to carefully select the excipient.

The pharmaceutical formulation can be administered to the patient by any

5 method known in the art for administering gases, liquids, and/or solids to patients, e.g.,
via inhalation, insufflation, infusion, injection, and/or ingestion. For example, in one
embodiment of the present invention, the pharmaceutical composition is administered
to the patient by inhalation. In another embodiment, the pharmaceutical composition is
administered to the patient orally. In yet another embodiment, the pharmaceutical
10 composition is administered directly to the abdominal cavity of the patient.

The formulations may conveniently be presented in unit dosage form and may
be prepared by any of the methods well known in the art of pharmacy. All methods
include the step of bringing the active ingredient(s) into association with the carrier
which constitutes one or more accessory ingredients.

15 In general, the formulations for tablets or powders are prepared by uniformly
and intimately blending the active ingredient with finely divided solid carriers, and
then, if necessary, as in the case of tablets, forming the product into the desired shape
and size.

Formulations suitable for parenteral (e.g., intravenous) administration, on the
20 other hand, conveniently comprise sterile aqueous solutions of the active ingredient(s).
Preferably, the solutions are isotonic with the blood of the subject to be treated. Such
formulations may be conveniently prepared by dissolving solid active ingredient(s) in
water to produce an aqueous solution, and rendering said solution sterile. The
formulation may be presented in unit or multi-dose containers, for example, sealed
25 ampoules or vials.

Formulations suitable for sustained release parenteral administrations (e.g.,
biodegradable polymer formulations such as polyesters containing lactic or glycolic acid
residues) are also well known in the art (see, e.g., U.S. Patent Nos. 3,773,919 and
4,767,628 and PCT Publication WO 94/15587).

30 In addition to treating postoperative ileus, patients suffering from ileus
undergoing the method of the instant application also benefit from other known
therapeutic effects of ghrelin such as orexigenic effects, inhibition of inflammatory
cytokines, promotion of slow wave sleep and immune enhancing properties.

5

EXAMPLESA. Synthesis of ghrelin analogs

The ghrelin analogues and compounds of the invention can be produced using the techniques disclosed in the examples herein as well as techniques that are well known in the art. For example, a polypeptide region of a ghrelin analog can be chemically or biochemically synthesized and modified. Examples of techniques for biochemical synthesis involving the introduction of a nucleic acid into a cell and expression of nucleic acids are provided in Ausubel, Current Protocols in Molecular Biology, John Wiley, 1987-1998 and Sambrook et al., in Molecular Cloning, A Laboratory Manual, 2nd Edition, Cold Spring Harbor Laboratory Press, 1989. Techniques for chemical synthesis of polypeptides are also well known in the art (See e.g., Vincent in Peptide and Protein Drug Delivery, New York, N.Y., Dekker, 1990). For example, the peptides of this invention can be prepared by standard solid phase peptide synthesis (See, e.g., Stewart, J.M., et al., Solid Phase Synthesis, Pierce Chemical Co., 2d ed. 1984).

The substituents R² and R³ of the above generic formula may be attached to the free amine of the N-terminal amino acid by standard methods known in the art. For example, alkyl groups, e.g., (C₁-C₃₀)alkyl, may be attached using reductive alkylation. Hydroxyalkyl groups, e.g., (C₁-C₃₀)hydroxyalkyl, may also be attached using reductive alkylation wherein the free hydroxy group is protected with a t-butyl ester. Acyl groups, e.g., COE¹, may be attached by coupling the free acid, e.g., E¹COOH, to the free amine of the N-terminal amino acid by mixing the completed resin with 3 molar equivalents of both the free acid and diisopropylcarbodiimide in methylene chloride for 1 hour. If the free acid contains a free hydroxy group, e.g., p-hydroxyphenylpropionic acid, then the coupling should be performed with an additional 3 molar equivalents of HOBT.

When R¹ is NH-X²-CH₂-CONH₂, (i.e., Z⁰=CONH₂), the synthesis of the peptide starts with Fmoc-HN-X²-CH₂-COOH coupled to a Rink Amide-MBHA resin (Amide-4-methylbenzylhydrazide amine obtained from Novabiochem®, San Diego, CA). If R¹ is NH-

5 X²-CH₂-COOH (i.e., Z⁰-COOH) the synthesis of the peptide starts with Fmoc-HN-X²-CH₂-COOH which is coupled to Wang resin.

In the synthesis of a ghrelin analogue of this invention containing A5c, A6c and/or Aib, the coupling time is 2 hours for these residues and the residue immediately following them.

10 A protecting group covalently joined to the C-terminal carboxy group reduces the reactivity of the carboxy terminus under in vivo conditions. The carboxy terminus protecting group is preferably attached to the α-carbonyl group of the last amino acid. Preferred carboxy terminus protecting groups include amide, methylamide, and ethylamide.

15 Examples are provided below to further illustrate different features of the present invention. The examples also illustrate useful methodology for practicing the invention. These examples do not limit the claimed invention.

Synthesis of short amino acid sequences is well established in the peptide art. For example, synthesis of compounds according to formula I such as (Glu³(O-hexyl))hGhrelin(1-28)-NH₂, (Aib²)hGhrelin(1-28)-NH₂, (Glu³(NH-hexyl))hGhrelin(1-28)-NH₂ and (Cys³(S-decyl))hGhrelin(1-28)-NH₂ described above, can be achieved by following the protocol set forth in International Patent Publication WO04/009616 at pages 46 to 56 at follows:

Example 1: (Glu³(O-Hexyl))hGhrelin(1-28)-NH₂

25 The titled peptide was synthesized on an Applied Biosystems (Foster City, CA) model 433A peptide synthesizer. 4-(2',4'-Dimethoxyphenyl-Fmoc-aminomethyl)-phenoxyacetamido-norleucyl-MBHA resin (Rink Amide MBHA resin, Novabiochem, San Diego, CA) was used with a substitution of 0.72 mmol/g. The Fmoc amino acids (AnaSpec, San Jose, CA) were used with the following side chain protection: Fmoc-Arg(Pbf)-OH, Fmoc-Pro-OH, Fmoc-Gln-OH, Fmoc-Leu-OH, Fmoc-Lys(Boc)-OH, Fmoc-Ala-OH, Fmoc-Ser(tBu)-OH, Fmoc-Glu(OtBu)-OH, Fmoc-Val-OH, Fmoc-His(Trt)-OH, Fmoc-Phe-OH, and Fmoc-Asp(OtBu)-OH. Boc-Gly-OH (Midwest Bio-Tech, Fishers, IN) was used in position 1. N-α-Fmoc-L-glutamic acid γ-4-{N-(1-(4,4-dimethyl-2,6-

30

5 dioxocyclohexylidene)-3-methylbutyl)-amino} benzyl ester (Fmoc-Glu(ODmab)-OH) (Chem-Inpex International, Wood Dale, IL) was used in position 3. The synthesis was carried out on a 0.25 mmol scale. The Fmoc groups were removed by treatment with 20% piperidine in N-methylpyrrolidone (NMP) for 30 min. In each coupling step, the Fmoc amino acid (1 mmol) was first pre-activated with HBTU (0.9 mmol) and HOBt (0.9
10 mmol) in DMF and then added to the resin. The ABI 433A peptide synthesizer was programmed to perform the following reaction cycle: (1) washing with NMP, (2) removing Fmoc protecting group with 20% piperidine in NMP for 30 min, (3) washing with NMP, (4) coupling with pre-activated Fmoc amino acid for 1h.

At the end of assembly of the peptide chain on the Applied Biosystems (ABI)
15 433A peptide synthesizer, the resin was transferred into a reaction vessel on a shaker for manual synthesis. The Dmab protecting group in the side chain of the Glu residue was removed with a solution of 2% hydrazine in DMF for 2h. After washing with DMF, the resin was treated with 2.5 mmol of tetramethylfluoroformamidinium hexafluorophosphate (TFFH) (Perseptive Biosystems, Warrington, UK) in
20 dichloromethane (DCM) for 25 min to convert the free carboxylic acid functional group in the side chain of the Glu residue to its acid fluoride. To the mixture were added 5.0 mmol of hexanol, 2.5 mmol of O-(7-azabenzotriazol-1-yl)-1,1,3,3-tetramethyluronium hexafluorophosphate (HOAT)(Anaspec, San Jose, CA), 5.0 mmol of diisopropylethyl amine (DIEA)(Aldrich, Milwaukee, WI) and catalytic amount of 4-
25 (dimethylamino)pyridine (DMAP)(Aldrich, Milwaukee, WI). The mixture was shaken at room temperature for 2h. The resin was washed with DMF and DCM and treated overnight with 2.5 mmol of N, N-diisopropylcarbodiimide (DIC)(Chem-Inpex International, Wood Dale, IL), 2.5 mmol of 1-hexanol, 2.5 mmol of HOBt, and 0.025 mmol of DMAP. After washing and drying, the peptide was cleaved off from the resin
30 by using a mixture of TFA (9.5 mL), H₂O (0.85 mL) and triisopropylsilane (TIS) (0.85 mL) for 2h. The resin was filtered off and the filtrate was poured into 70 mL of ether. The precipitate formed was filtered off and washed thoroughly with ether. This crude product was dissolved into 5% acetic acid and purified on a reverse-phase preparative

5 HPLC using a column (4 x 43 cm) of C₁₈ DYNAMAX-100A^o™ (Varian, Walnut Creek, CA).
The column was eluted with a linear gradient from 75% A and 25% B to 55% A and 45%
B in an hour where A was 0.1% TFA in water and B was 0.1% TFA in acetonitrile. The
fractions were checked by an analytical HPLC. Those containing pure product were
combined and lyophilized to dryness. The purity of the compound was 92.8%. Yield
10 was 8.6%. Electro-spray ionization mass spectrometry (ESI MS) analysis gave a
molecular weight for the product of 3369.4 (in agreement with the calculated molecular
weight of 3369.9).

Example 2: (Aib²)hGhrelin(1-28)-NH₂

15 The titled peptide was synthesized according to the procedure described in
Example 1 for the synthesis of (Glu³(O-Hexyl))hGhrelin(1-28)-NH₂, except as follows:
Fmoc-Ser-OH was used at position 3, Fmoc-Aib-OH was used at position 2 and Boc-Gly-
OH was used at position 1. After the peptide chain was assembled, the peptide-resin
was treated with 25% piperidine in DMF for 3 x 2h. The resin was washed with DMF
20 and treated with octanoic acid (2.5 mmol, 10 fold excess), HBTU (2.2 mmol), HOBt (2.2
mmol) and DIEA (7.5 mmol) in DMF for 2h. The resin was washed with DMF and then
treated with octanoic acid (2.5 mmol), DIC (2.5 mmol), HOBt (2.5 mmol) and DMAP
(0.025 mmol) in DMF for 2h. The final cleavage and purification procedures were the
same as those in Example 1. The product was found to be

- 5 homogenous by analytical HPLC, with a purity of 99% in 18.5% yield. Electro-spray ionization mass spectrometry (ESI MS) analysis gave a molecular weight for the product of 3367.6 (in agreement with the calculated molecular weight of 3367.0).

Example 3: (Glu³(NH-Hexyl))hGhrelin(1-28)-NH₂

- 10 The titled peptide was synthesized on an Applied Biosystems (Foster City, CA) model 430A peptide synthesizer which was modified to do accelerated Boc-chemistry solid phase peptide synthesis. See Schnolzer, *et al.*, Int. J. Peptide Protein Res., 40:180 (1992). 4-Methylbenzhydrylamine (MBHA) resin (Peninsula, Belmont, CA), with a substitution of 0.91 mmol/g was used. Boc amino acids (Midwest Bio-Tech, Fishers, IN; 15 Novabiochem., San Diego, CA) were used with the following side chain protection: Boc-Ala-OH, Boc-Arg(Tos)-OH, Boc-His(DNP)-OH, Boc-Val-OH, Boc-Leu-OH, Boc-Gly-OH, Boc-Gln-OH, Boc-Lys(2ClZ)-OH, Boc-Ser(Bzl)-OH, Boc-Phe-OH, Boc-Glu(OcHex)-OH and Boc-Pro-OH. Fmoc-Glu(OtBu)-OH (Novabiochem., San Diego, CA) was used for the residue at position 3 in the sequence. The synthesis was carried out on a 0.25 mmol 20 scale. The Boc groups were removed by treatment with 100% TFA for 2 x 1 min. Boc amino acids (2.5 mmol) were pre-activated with HBTU (2.0 mmol) and DIEA (1.0 mL) in 4 mL of DMF and were coupled without prior neutralization of the peptide-resin TFA salt. Coupling times were 5 min.

- At the end of the assembly of the first 25 residues on the ABI 430A peptide 25 synthesizer and before the coupling of Fmoc-Glu(OtBu)-OH, the protected peptide-resin was transferred into a reaction vessel on a shaker for manual synthesis. After removing the Boc protecting group by using 100% TFA for 2 x 1 min and washing with DMF, the resin was mixed with Fmoc-Glu(OtBu)-OH (2.5 mmol) which was pre-activated with HBTU (2.0 mmol), HOBt (2.0 mmol) and DIEA (1.0 mL) in 4 mL of DMF. The mixture 30 was shaken for 2h. This coupling step was repeated. After washing with DMF, the resin was treated with a TFA solution containing 5% water and 5% TIS for 2h to remove the tBu protecting group in the side chain of the Glu residue. The resin was neutralized with 10% DIEA in DMF and washed with DMF and DCM. The resin was then treated

5 with hexylamine (2.0 mmol), DIC (2.0 mmol), HOBt (2.0 mmol) in 5ml of DCM for 2 x 2h. The resin was washed with DMF and treated with 25% piperidine in DMF for 30 min to remove the Fmoc protecting group. After washing with DMF and DCM, the resin was transferred into the reaction vessel on the ABI 430A peptide synthesizer for the assembly of the rest two residues.

10 At the end of the assembly of the whole peptide chain, the resin was treated with a solution of 20% mercaptoethanol/10% DIEA in DMF for 2 x 30 min to remove the DNP group on the His side chain. The N-terminal Boc group was then removed by treatment with 100% TFA for 2 x 2 min. The peptide-resin was washed with DMF and DCM and dried under reduced pressure. The final cleavage was done by stirring the peptide-resin
15 in 10 mL of HF containing 1 mL of anisole and dithiothreitol (50 mg) at 0°C for 75 min. HF was removed by a flow of nitrogen. The residue was washed with ether (6 x 10 mL) and extracted with 4N HOAc (6 x 10 mL). This crude product was purified on a reverse-phase preparative HPLC using a column (4 x 43 cm) of C₁₈ DYNAMAX-100A⁰ (Varian, Walnut Creek, CA). The column was eluted with a linear gradient from 75% A and 25%
20 B to 55% A and 45% B at flow rate of 10 mL/min in an hour where A was 0.1% TFA in water and B was 0.1% TFA in acetonitrile. Fractions were collected and checked on an analytical HPLC. Those containing pure product were combined and lyophilized to dryness. 31.8 mg of a white solid were obtained. Purity was 89% based on

5 analytical HPLC analysis. Electro-spray ionization mass spectrometry (ESI MS) analysis gave the molecular weight at 3368.4 (in agreement with the calculated molecular weight of 3368.9).

Example 4: (Cys³(S-Decyl))hGhrelin(1-28)-NH₂

10 (i) The titled peptide was synthesized according to the procedure described in Example 3 for the synthesis of (Glu³(NH-Hexyl))hGhrelin(1-28)-NH₂ with the following modifications: After the assembly of the first 25 residues using Boc chemistry, the last 3 residues were assembled by employing Fmoc chemistry. The following 3 Fmoc amino acids were used: N- α -Fmoc-S-(p-methoxytrityl)-L-cysteine (Fmoc-Cys(Mmt)-OH), Fmoc-15 Ser(Bzl)-OH and Fmoc-Gly-OH, which were purchased from Novabiochem (San Diego, CA). The Fmoc amino acid (1 mmol) was first pre-activated with HBTU (0.9 mmol) and HOBT (0.9 mmol) in DMF before it was coupled to the peptide-resin. The synthesis cycle for the Fmoc amino acids included: (1) washing with NMP, (2) removing Fmoc protecting group with 20% piperidine in NMP for 30 min, (3) washing with NMP, and 20 (4) coupling with pre-activated Fmoc amino acid for 1h.

(ii) At the end of the assembly of the entire peptide chain, the protected peptide-resin was treated with a solution of 20% mercaptoethanol and 10% DIEA in DMF for 2 x 30 min to remove the DNP group on the side-chain of the His residue. The Mmt protecting group in the side-chain of the Cys residue was then removed by using a 25 solution of 1% TFA and 5% TIS in DCM for 30 minutes and the peptide-resin was washed with DMF.

(iii) 1-(2-pyridyldithio)decane was prepared by stirring 2, 2'-dipyridyl disulfide (1.06g, 4.8 mmol), 1-decanethiol (0.83 mL, 4 mmol) and triethylamine (2 mL) in propanol and acetonitrile (1/9, v/v) at room

5 temperature for about 3 hours (See Carlsson *et al.*, *Biochem. J.*, 1978, 173, 723-737).

Purification of the crude 1-(2-pyridyldithio)decane was performed using flash chromatography, eluting with a mixed solvent system of DCM/MeOH (10:0.4).

(iv) The peptide-resin from step (ii) was treated with the 1-(2-pyridyldithio)decane from step (iii) and DIEA (3 eq., 0.75 mmol) overnight in a mixed
10 solvent system of DMF/1-propanol (7:3). The resin was then washed with DMF and the N-terminal Fmoc protecting group was removed by treatment with 25% piperidine in DMF for 30 min. The peptide-resin was then washed with DMF and DCM and dried under reduced pressure.

(v) Final cleavage was performed by stirring the peptide-resin in 10 mL of HF
15 containing 1mL anisole at about 0 °C for about 70 min. The purification procedure was the same as that described in Example 3. The target product (yield 10.2 %) was found by analytical HPLC to have a purity of 99.9%. Electro-spray ionization mass spectrometry (ESI-MS) analysis gave the molecular weight at 3432.1 (in agreement with the calculated molecular weight of 3432.1).

20 Other peptides of the invention can be prepared by a person of ordinary skill in the art using synthetic procedures analogous to those disclosed generally hereinabove in using the protocols set forth in International Patent Publication WO04/009616. Other peptides of the invention can be prepared by a person of ordinary skill in the art using synthetic procedures analogous to those disclosed generally hereinabove.

25 The synthesis of peptidyl analogs according to formula II, such as H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂, H-Inp-D-2-Nal-D-Trp(Ψ)-Pim and H-Inp-D-Trp-D-2-Nal(Ψ)-Pim can be achieved by following the protocol set forth in International Patent Publication WO04/014415 at pages 33-44 as follows:

Example 1: H-Apc-D-1-Nal-D-1-Nal-Phe-Apc-NH₂

30 Each of the reaction wells contained 0.0675 mmol of Rink Amide MBHA resin (substitution = 0.72 mmol/g, Novabiochem, San Diego, CA). The following Fmoc amino acids (Novabiochem, San Diego, CA; Chem-Impex International, Wood Dale, IL; SyntheTech, Albany, OR; Pharma Core, High Point, NC) were used: Fmoc-Lys(Boc)-OH,

5 Fmoc-Phe-OH, Fmoc-H-Inp-OH, Fmoc-D-1Nal-OH, Fmoc-D-2Nal-OH, Fmoc-D-Trp(Boc)-OH, Fmoc-3Pal-OH, Fmoc-4Pal-OH, Fmoc-Orn(Boc)-OH, Fmoc-D-Bip-OH, Fmoc-Thr(Bzl)-OH, Fmoc-Pff-OH, Fmoc-2Thi-OH, Fmoc-Taz-OH, Fmoc-D-Dip-OH, Fmoc-D-Bpa-OH, Fmoc-D-Bal-OH, and Fmoc-Apc(Boc)-OH.

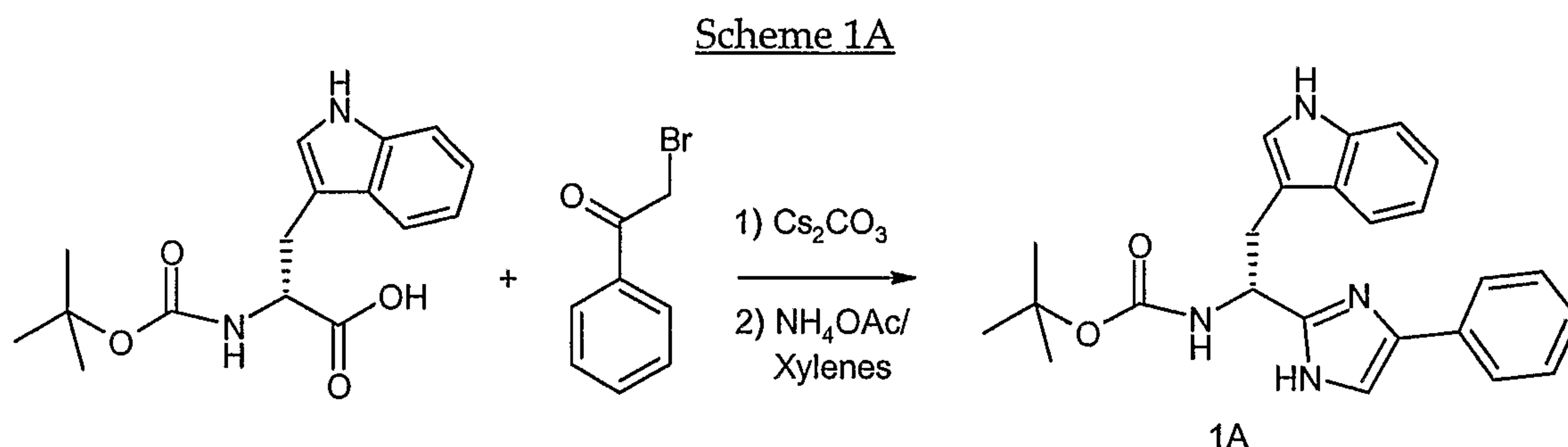
Each of the Fmoc amino acids was dissolved in a 0.3 N solution of HOBt in DMF
 10 wherein the concentration of the resulting Fmoc amino acid was 0.3 N. A four fold excess (0.27 mmol, 0.9 mL of the 0.3 N solution) of Fmoc amino acid was used for each coupling. DIC (0.27 mmol, 0.6 mL of 0.45N DIC solution in DMF) was used as the coupling reagent for each coupling. Deprotection was performed by using 20% piperidine in DMF (2 X 1.5 mL per residue).

15 The peptides were cleaved from the resin by treating the peptide-resins with 8% triisopropylsilane (TIP) in trifluoroacetic acid (TFA) (1.5 mL per reaction well) at room temperature for 2h. The resin was removed by filtration. Each filtrate was diluted to 25 mL with ether in a centrifuge tube. The resulting precipitate in each tube was centrifuged and the solvents were decanted from the precipitate. The precipitate in each
 20 tube was then dissolved in methanol (3 mL) and diluted with water (1 mL). The purification of the crude products was done on a reverse-phase preparative HPLC using a column (100 X 21.20 mm, 5 μ) of LUNA 5 μ C8(2) (Phenomenex, Torrance, CA). For each peptide, the column was eluted with a linear gradient from 85% A and 15% B to 25% A and 75% B in 15 min with a flow rate of 25 mL/min. A was 0.1% TFA in water and B was 0.1% TFA in acetonitrile/water (80/20, v/v). The fractions were checked by
 25 analytical HPLC and those containing the pure product were combined and lyophilized to dryness.

Yields ranged from 13% to 71% and purity of each of Examples 1 - 65 exceeded 94% based upon analytical HPLC analysis. Electro-spray ionization mass spectrometry
 30 (ES-MS) analysis was performed and observed molecular weights were in agreement with calculated molecular weights. The results are detailed in Table I, below.

Example 2: H-Inp-D-2-Nal-D-Trp(Ψ)-Pim

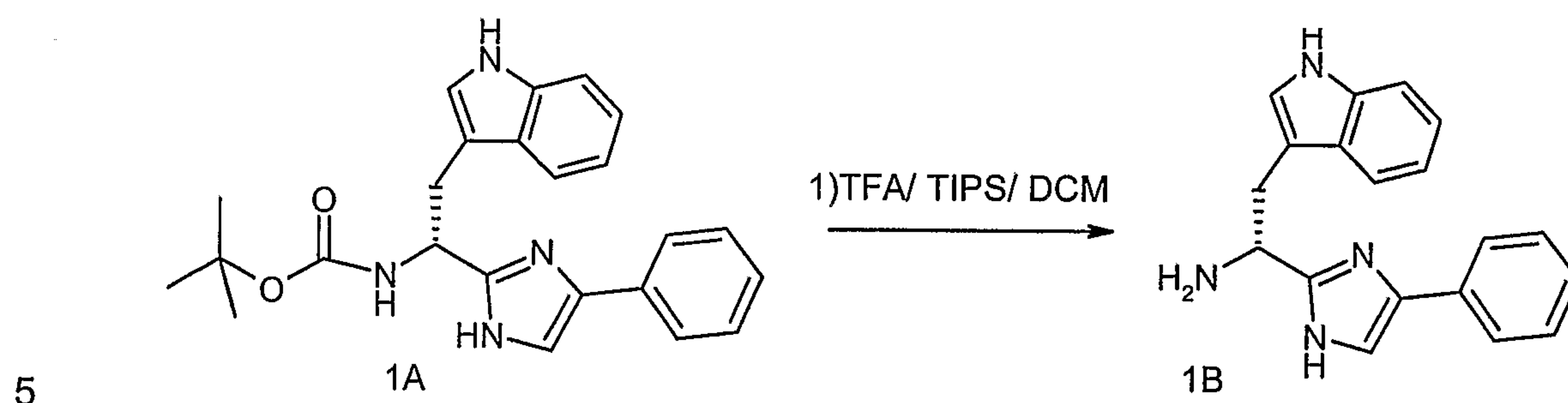
5 1.a. BOC-(D)-Trp-OH (4.0g, 13.1mmole) (Novabiochem San Diego, Calif.) in methanol (36ml) and Cs₂CO₃ (2.14g, 6.57mmole) in water (10 ml) were combined and the mixture was swirled until a homogeneous mixture was obtained. Solvents were removed *in vacuo* and the residue was dissolved in DMF (45 ml). 2-bromoacetophenone (2.61g, 13.1mmole) in DMF (9 ml) was added to the solution and the solution was stirred
10 for 30 min. at room temperature. Cesium bromide was removed by filtration and the filtrate was concentrated *in vacuo*. The resulting concentrate was dissolved in xylenes (45ml), NH₄OAc (17.1 g) was added, and the solution was heated at reflux for 1 hr. The cooled solution was washed two times with saturated NaHCO₃ solution (45 ml) and then with saturated NaCl. The resulting organic layer was purified by flash
15 chromatography to yield 4.1g (77%) of intermediate 1A depicted in Scheme 1A, ("Compound 1A").



1b. Compound 1A (403mg) was deprotected using a mixture of trifluoroacetic acid (TFA) (8ml) dichloromethane (DCM) (8ml) and triisopropylsilane (TIPS) (1.4ml). After
20 mixing for one hour the solution was concentrated under a stream of nitrogen. The residue was dissolved in DCM (40ml), washed two times with a saturated solution of NaHCO₃ (40ml), and then dried over Na₂SO₄ to yield a solution of the intermediate product 1B, depicted in Scheme 1B, below.

25

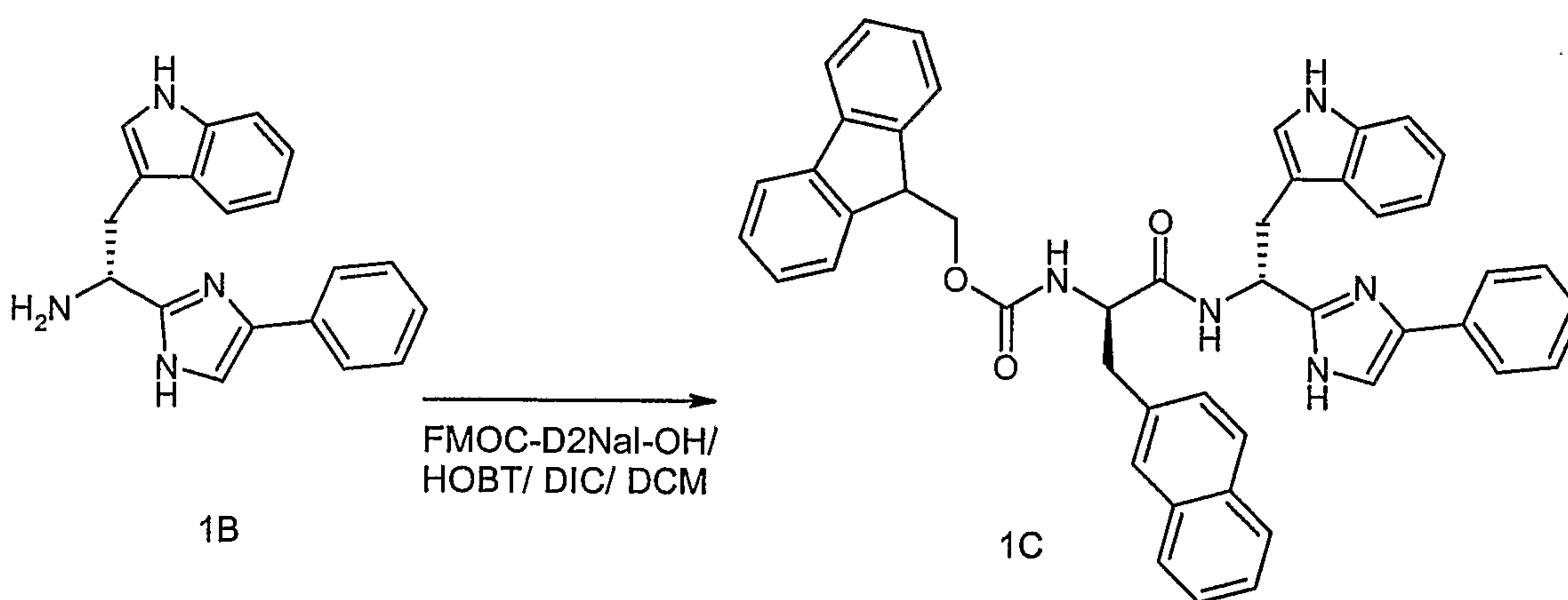
Scheme 1B



1c.-f. The forgoing solution of the intermediate product 1B was divided into four equal portions and coupled with the pre-activated HOBT esters of FMOC protected amino acids, as summarized in reaction schemes 1C, 1D, 1E, and 1F, below. The amino acid used: FMOC-D-2NaI-OH (130mg, 0.30mmole) (Synthetech Albany, Oregon)

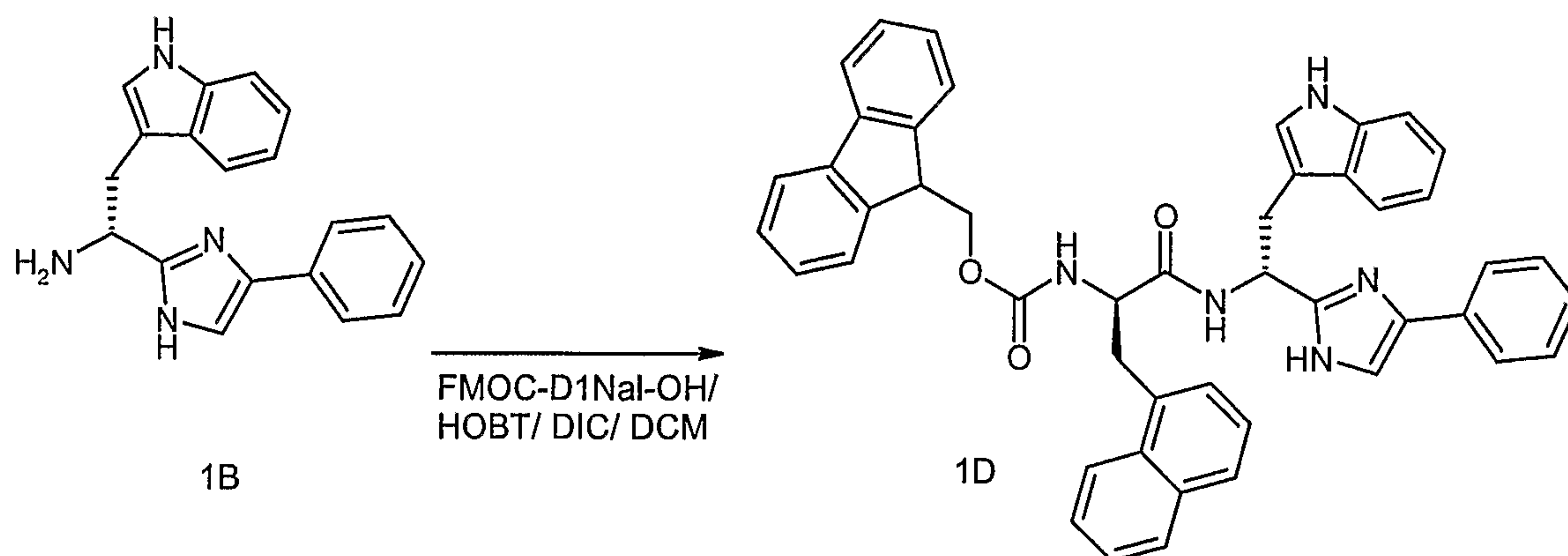
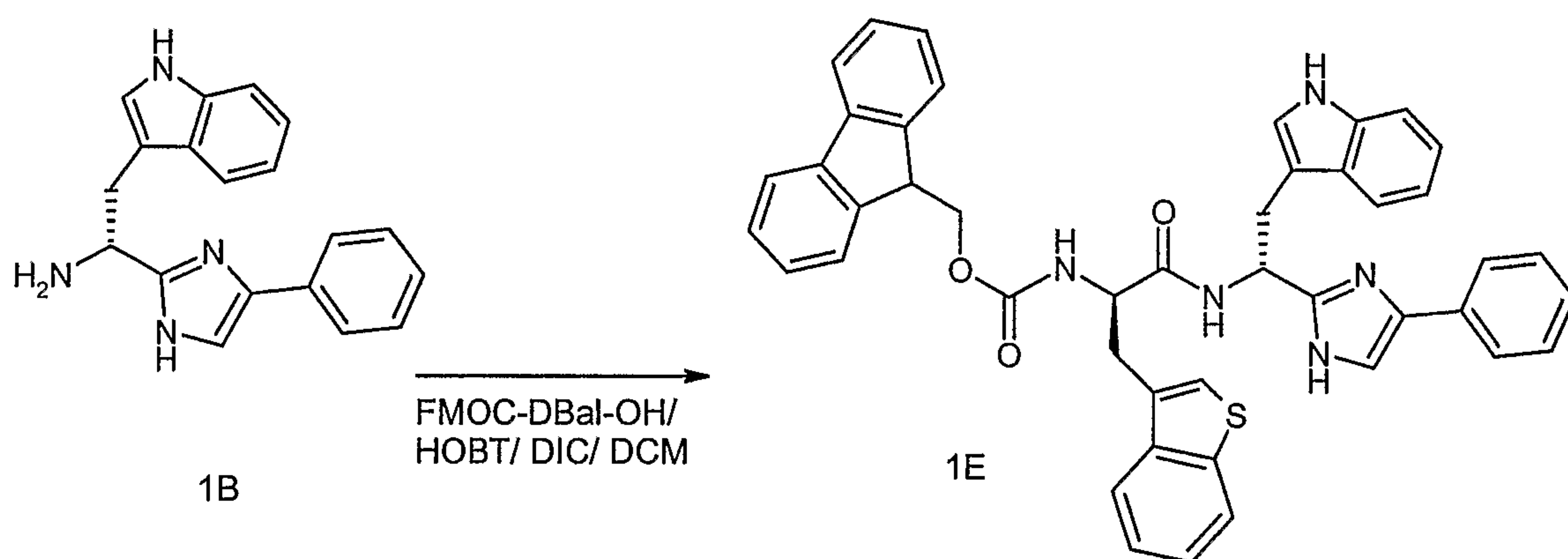
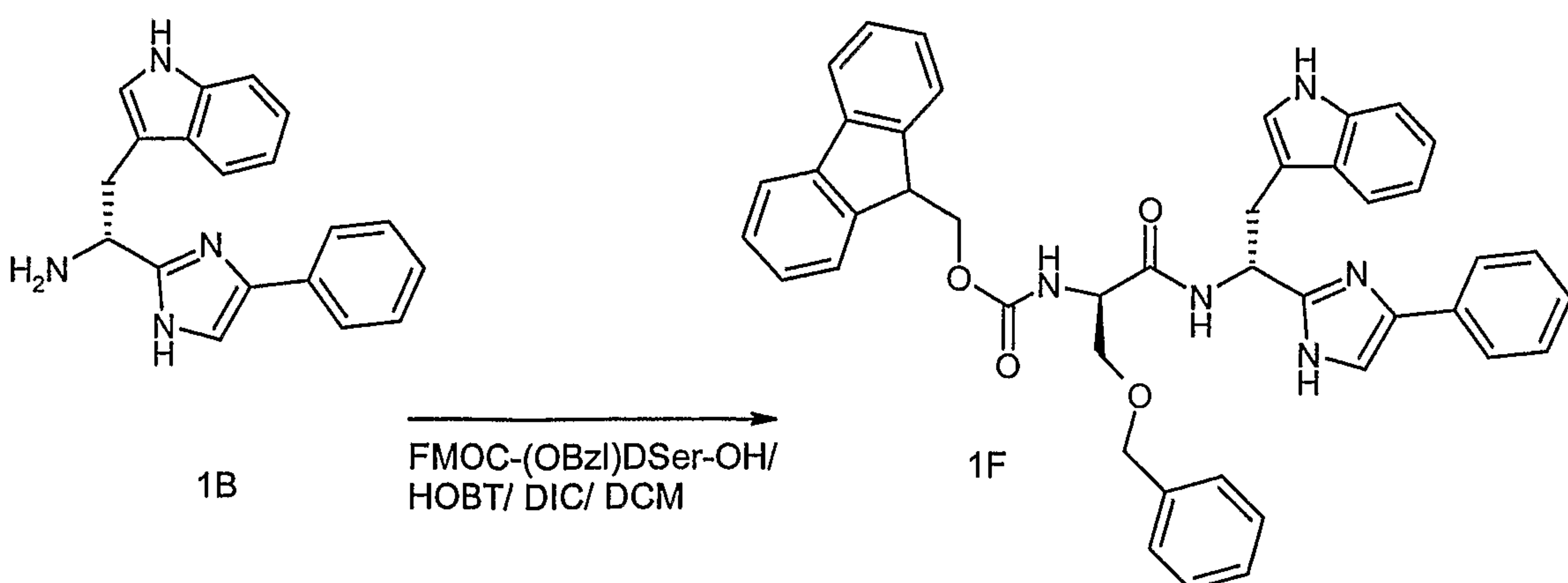
10 Each of the immediately foregoing amino acids was pre-activated with HOBT (46mg, 0.30mmole) and DIC (38mg, 0.30mmole) in DCM (5ml) for ten minutes before addition to one of the four portions of the forgoing solution of the intermediate product 1B. The coupling reaction was then allowed to proceed for 30 minutes at room temperature.

Scheme 1C



15

5

Scheme 1DScheme 1EScheme 1F

10

1.g-j. The Fmoc group is removed from each of the resulting compounds 1C, 1D, 1E and 1F by addition of tris(2-aminoethyl)amine (0.9ml) to the respective reaction mixtures from the previous step and mixing for 30 minutes at room temperature. The reaction

5 mixtures containing the deblocked compounds were then washed three times with 10% pH 5.5 phosphate buffer (10ml).

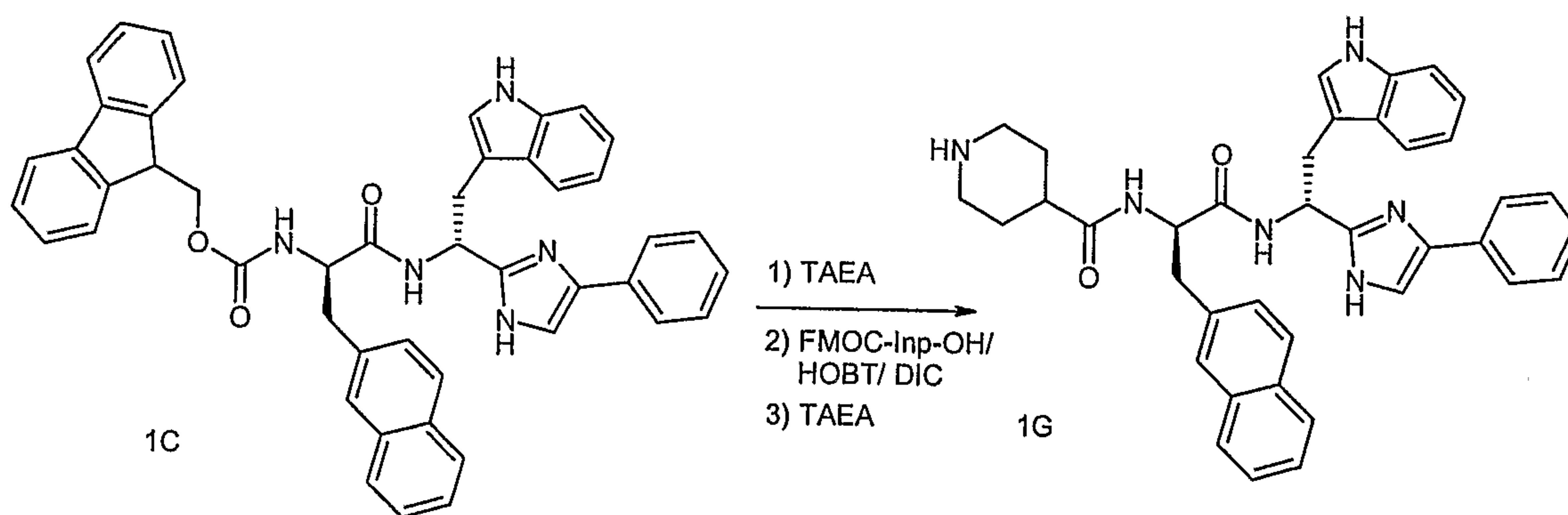
The resulting free amine solutions were coupled with pre-activated HOBT esters of FMOC-Inp-OH (105mg, 0.30mmole) (Chem Impex Wood Dale, IL) and was pre-activated with HOBT (46mg, 0.30mmole) and DIC (38mg, 0.30mmole) in DCM (5ml) for
10 ten minutes before addition to the appropriate deprotected amine. The coupling reaction was then allowed to proceed for one hour at room temperature.

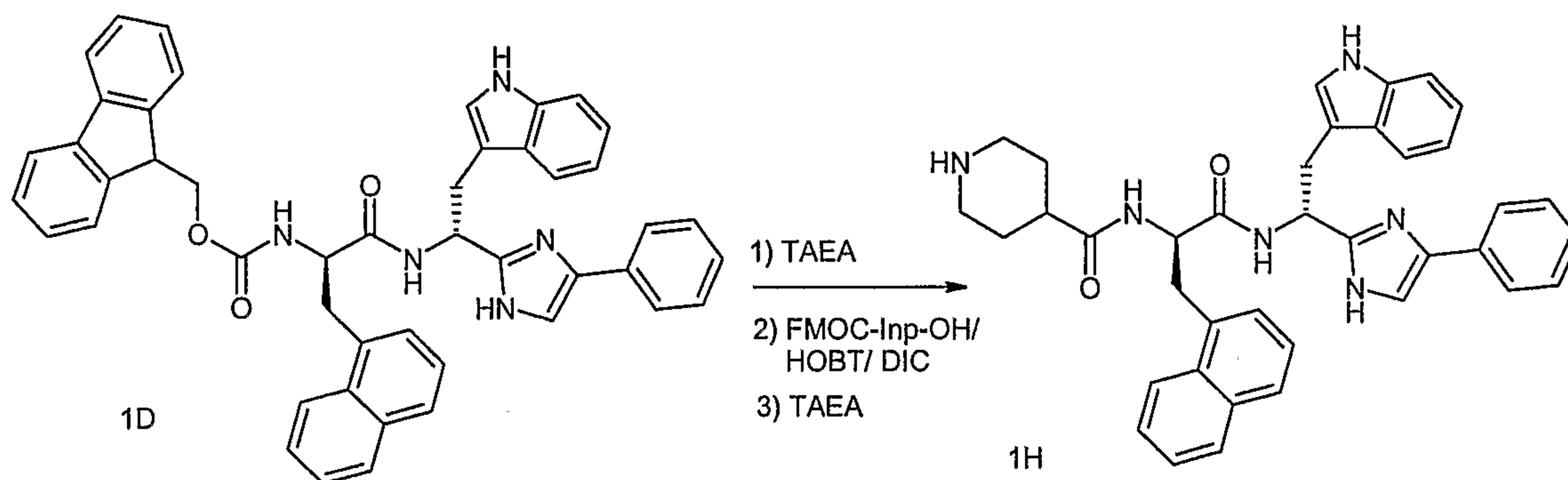
The FMOC group was removed from the resulting FMOC-protected compounds by addition of tris(2-aminoethyl)amine (0.9ml) and mixing for 30 minutes. The deblocked compounds were washed three times with 10% pH 5.5 phosphate buffer
15 (10ml) and the crude products were collected as a precipitate.

The BOC-protected compounds were purified by flash chromatography and then deblocked for one hour with TIPS (0.50ml), TFA (0.50ml), in DCM (2.75ml). The crude products were then concentrated and dried under vacuum.

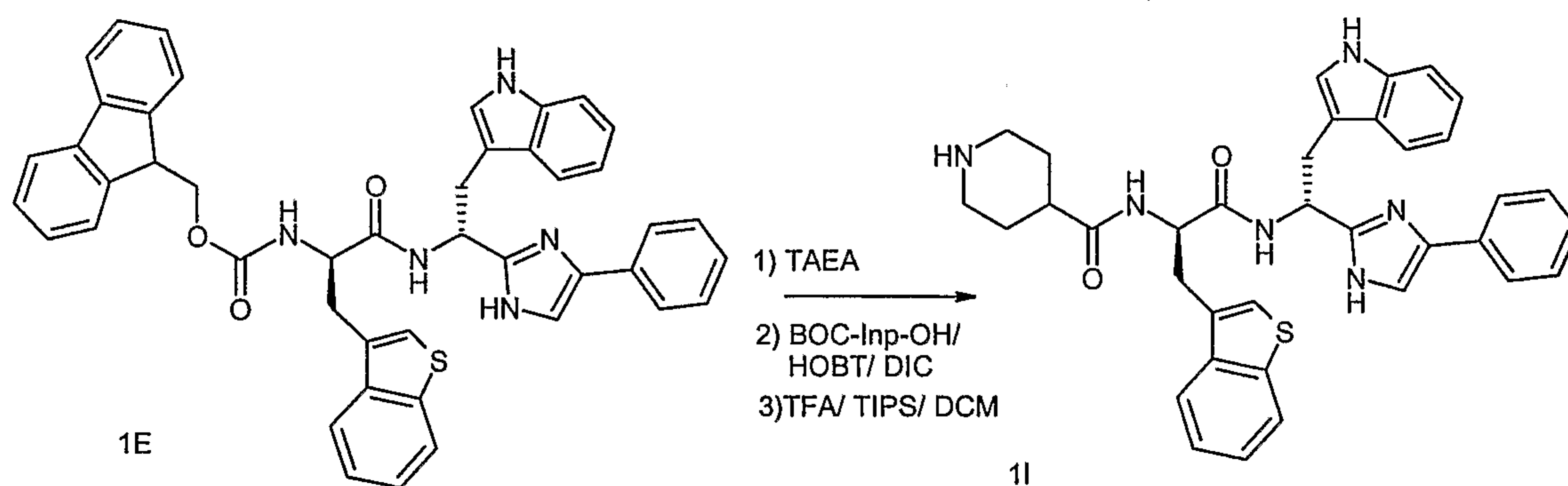
The foregoing deprotection, coupling, and deprotection steps are summarized in
20 reaction schemes 1G, 1H, 1I and 1J, below

Scheme 1G

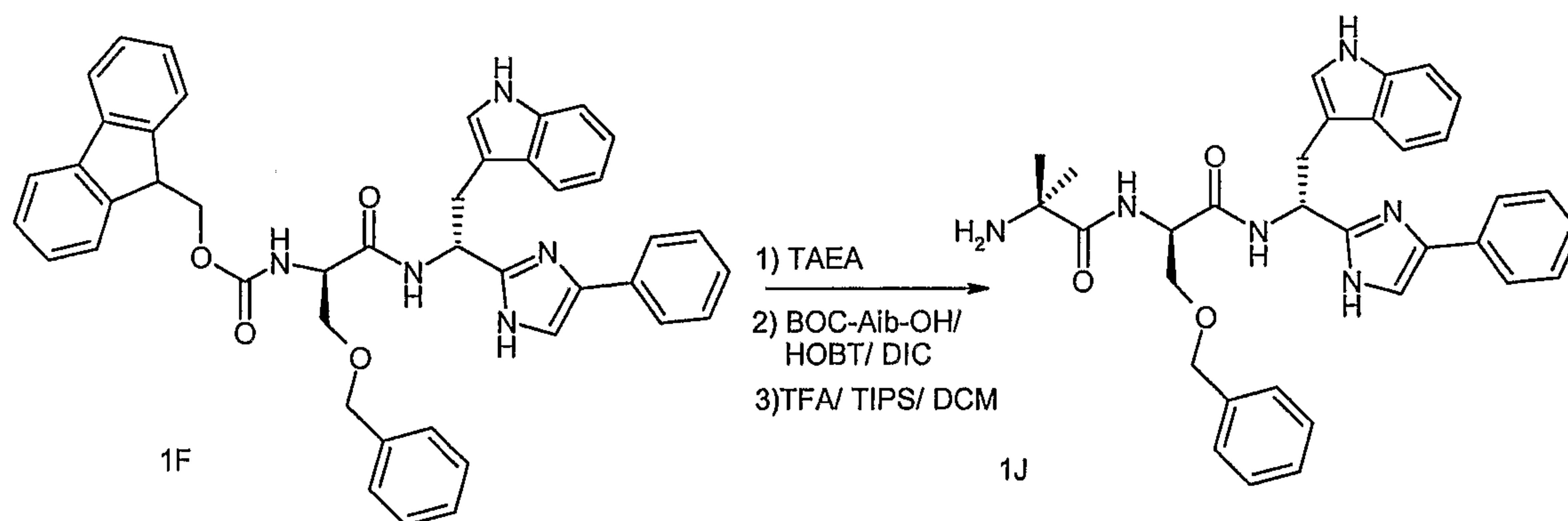




Scheme 1I



Scheme 1J



Example 3: H-Inp-D-Trp-D-2-Nal(Ψ)-Pim

2.a.1 and 2.a.2.: Compound 2A was made in an analogous manner as was Compound 1A, using BOC-D-2Nal-OH and 2-bromoacetophenone as starting materials.

Steps 2.a.1. and 2.a.2. are summarized in Scheme 2A, below.

Scheme 2A



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Steps 2.b.1. and 2.b.2. are summarized in Scheme 2B, below.

Scheme 2B



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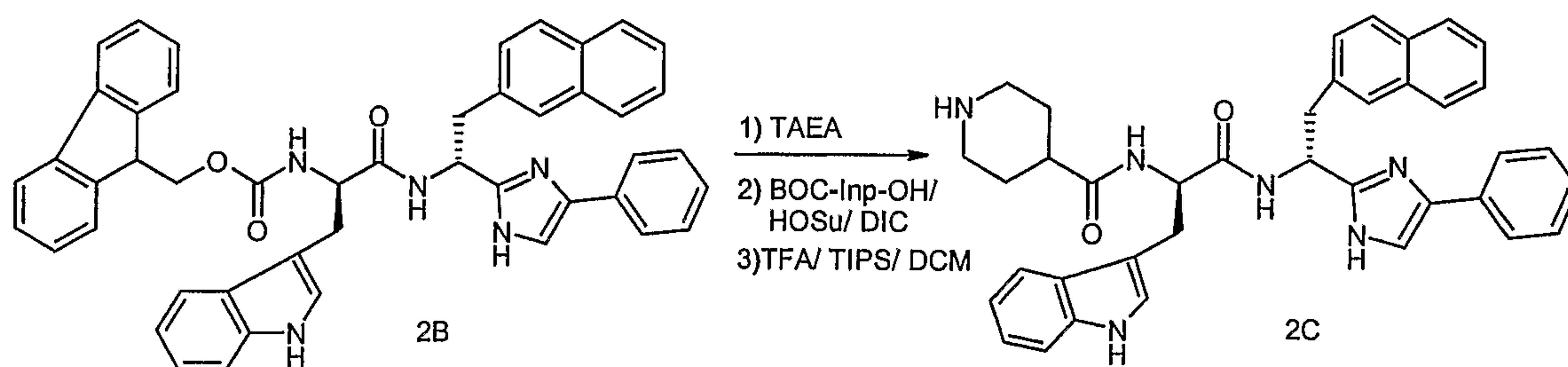
5 2.c.2. The active ester of BOC-Inp-OH (66.5mg, 0.290mmole) was preformed with HOSu (33mg, 0.290mmole) and DIC (37mg 0.290mmole) in DCM (1.5ml). After one hour diisopropylurea was removed by filtration and the filtrate was added to the Compound 2B (free amine) solution. The resulting solution was diluted with DCM to 4ml and the coupling reaction was allowed to proceed for 12 hours.

10 The reaction mixture was then washed three times with 10% pH 5.5 phosphate buffer (10ml) and dried over Na₂SO₄. Solvent was removed under vacuum and the concentrate was purified by flash chromatography.

2.c.3. The intermediate was deblocked using TFA (2.75ml) and TIPS (0.5ml) in DCM (2.75ml) for 30 minutes. Volatiles were removed from the reaction mixture under a stream of nitrogen and the residue was triturated with ether (15ml). After centrifugation the ether was decanted and the resulting solid was subjected to HPLC to yield purified Compound 70 in 39% yield.

Steps 2.c.1. and 2.c.2. and 2.c.3. are summarized in Scheme 2C, below.

Scheme 2C



Additional examples for synthesizing compounds according to formula III are provided below to further illustrate different features of the present invention. The examples also illustrate useful methodology for practicing the invention. These examples do not limit the claimed invention.

(Ac-Aib¹, Aib^{2,10}, Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂

The title peptide was synthesized on an Applied Biosystems® model 433A peptide synthesizer (obtained from Applied Biosystems®, Foster City, CA, U.S.A.) using Fluorenylmethyloxycarbonyl (Fmoc) chemistry. A Rink Amide-4-

5 methylbenzylhydramine (MBHA) resin (obtained from Novabiochem®, San Diego, CA) with substitution of 0.64 mmol/g was employed. The Fmoc amino acids (obtained from AnaSpec®, San Jose, CA, U.S.A.) used were Fmoc-Ala-OH, Fmoc-Arg(Pbf)-OH, Fmoc-Aib-OH, Fmoc-Gln(Trt)-OH, Fmoc-Glu(tBu)-OH, Fmoc-His(Trt)-OH, Fmoc-Leu-OH, Fmoc-Lys(Boc)-OH, Fmoc-Phe-OH, Fmoc-Pro-OH, Fmoc-Ser(tBu)-OH and Fmoc-Val-OH. In addition, Fmoc-Glu(O-2-PhiPr)-OH (obtained from Novabiochem®, San Diego, CA) was used for the amino acids in 3rd and 17th positions. The synthesis was carried out on a 0.1 mmol scale. The Fmoc groups were removed by treating the resin with a solution of 20% piperidine in N-methylpyrrolidone (NMP) for a period of approximately 30 minutes. In each coupling step, the Fmoc amino acid (3 eq, 0.3 mmol) was first pre-activated in 2 mL solution of 0.45M 2-(1-H-benzotriazole-1-yl)-1,1,2,3-tetramethyluronium-hexafluorophosphate/1-hydroxy-benzotriazole (HBTU/HOBT) in NMP. A solution containing the activated amino acid ester together with 1 mL of diisopropylethylamine (DIEA) and 1 mL of NMP was introduced to the resin. The ABI 433A® peptide synthesizer was programmed to perform the following reaction cycle:

20 (1) washing with NMP;
(2) removing Fmoc protecting group with 20% piperidine in NMP for 30 minutes;
(3) washing with NMP; and
(4) coupling with pre-activated Fmoc amino acid for approximately 1 or 3 hours.

The resin was coupled successively according to the sequence of the title peptide. After 25 the peptide chain was assembled, the resin was washed completely with N,N-dimethylformamide (DMF) and dichloromethane (DCM).

At the end of the assembly of the peptide chain on the ABI 433A® peptide synthesizer (without the Fmoc-Aib residue in A¹), the peptide-resin was transferred to a reaction vessel on a shaker and the Fmoc was removed using 25% piperidine in DMF for 30 30 minutes. The resin was then washed with DMF. The Fmoc-Aib-OH (0.4 mmole) was coupled using TFFH (Tetramethylfluoroformamidinium Hexafluorophosphate) (obtained from Perceptive Biosystems®, Warrington, U.K.) (0.4mmole), HOAt (0.4mmol), DMAP (Dimethylaminopyridine) (0.1g) and DIEA (1.2 mmole) once for 4 hours and

5 once overnight.

The Fmoc group was removed as above and the peptide was capped using Ac₂O (acetic anhydride) (5 mmole) and DIEA (5 mmole) in DMF for approximately 30 minutes. The PhiPr (γ -2-phenylisopropyl ester) groups were removed from the Glutamine residues at A³ and A¹⁷ by washing with a solution of 3% TFA in DCM twice
10 for a period of 10 minutes for each washing. The Boc that was partially removed from the side chain of Lysine was replaced by using Boc₂O (0.8 mmole) and DIEA (0.8 mmole) in DCM overnight. The resin was treated with PyAOP (7-Azabenzotriazol-1-yloxytris(pyrrolidino)phosphonium-hexafluorophosphate) (obtained from Applied Biosystems®, Foster City, CA, U.S.A.) (0.6 mmole), HOAt (0.6 mmole), DMAP (0.1g) and
15 DIEA (1.8 mmole) for 10 minutes. Hexyl-NH₂(Hexylamine) (obtained from Sigma-Aldrich Chemicals®, St. Louis, MO, U.S.A.) (2.0 mmole) was then added to the resin solution which was then shaken and allowed to stand overnight.

To cleave the title peptide from the resin, the peptide-resin was treated with a mixture of TFA, H₂O and triisopropylsilane (TIS) (9.5 mL / 0.85 mL / 0.8 mL, respectively)
20 for approximately 4 hours. The cleaved resin was filtered off and the remaining filtrate was poured into 200 mL of ether. A precipitate formed which was then collected by centrifugation. The crude product was dissolved in a mixture of acetonitrile and water which was purified on a reverse-phase preparative HPLC system with a column (4 x 43 cm) of C₁₈ DYNAMAX-100 A⁰® (obtained from Varian®, Walnut Creek, CA, U.S.A.). The
25 column was eluted over approximately 1 hour using a linear gradient of 85% A:15% B to 60% A:40% B, where A was 0.1% TFA in water and B was 0.1% TFA in acetonitrile. The fractions were analyzed by HPLC and those fractions found to contain pure product were pooled and lyophilized to dryness. Approximately 27.1 mg (6.3%) of a white solid was recovered which was assayed using HPLC and found to be approximately 97.5%
30 pure. Electro-spray ionization mass spectrometry (ESI-MS) analysis determined the molecular weight to be 3477.4 which was in agreement with the calculated molecular weight of 3477.19.

5 (Aib^{1,2,10}, Glu(NH-hexyl)^{3,17})hGhrelin(1-28)-NH₂

The titled peptide was synthesized according to the procedure described for (Ac-Aib¹, Aib^{2,10}, Glu(NH-Hexyl)^{3,17})hGhrelin(1-28)-NH₂) with the following exception: After coupling the last Fmoc-Aib-OH in the 1st position on a shaker, the PhiPr protecting groups were removed from the Glutamine residues at A³ and A¹⁷ by washing with a 3% TFA in DCM twice for intervals lasting approximately 10 minutes. The Boc that was partially removed from the side chain of Lysine was replaced using a solution of Boc₂O (0.8 mmole) and DIEA (0.8 mmole) in DCM. After being shaken and standing overnight, the resin was treated with a solution of PyAOP (7-Azabenzotriazol-1-yloxytris(pyrrolidino)phosphonium-hexafluorophosphate) (obtained from Applied Biosystems®, Foster City, CA, U.S.A.) (0.6 mmole), HOAt (0.6 mmole), DMAP (0.1g) and DIEA (1.8 mmole) for 10 minutes after which Hexyl-NH₂(Hexylamine) (obtained from Sigma-Aldrich, St. Louis, MO, U.S.A.) (2.0 mmole) was then added to the solution which was then shaken and allowed to stand overnight. The Fmoc protecting group was then removed using 25% piperidine in DMF. The peptide was cleaved off from the resin and purified on a HPLC system, as detailed in the discussion of the synthesis above.

Using an HPLC assay, the purity of the resulting produce was found to be approximately 96.5%. Electro-spray ionization mass spectrometry (ESI-MS) analysis determined the molecular weight to 3435.00 which was in agreement with the calculated molecular weight of 3435.16.

B. Biological Assays

The activities of the compounds of the invention at the GHS receptor can be and were determined using techniques such as those described in the examples provided below. In different embodiments a ghrelin analog has at least about 50%, at least about 60%, at least about 70%, at least about 80%, or at least about 90%, at least about 95%, at least about 98% or more, functional activity relative to ghrelin as determined using one or more of the functional activity assays described below; and/or has an IC_{50} greater than about 1,000 nM, greater than about 100 nM, or greater than about 50 nM, using the

5 receptor binding assay described below. With respect to IC_{50} , greater refers to potency and thus indicates a lesser amount is needed to achieve binding inhibition.

Assays measuring the ability of a compound to bind a GHS receptor employ a GHS receptor, a fragment of the receptor comprising a ghrelin binding site, a polypeptide comprising such a fragment, or a derivative of the polypeptide. Preferably,
10 the assay uses the GHS receptor or a fragment thereof.

A polypeptide comprising a GHS receptor fragment that binds ghrelin can also contain one or more polypeptide regions not found in a GHS receptor. A derivative of such a polypeptide comprises a GHS receptor fragment that binds ghrelin along with one or more non-peptide components.

15 The GHS receptor amino acid sequence involved in ghrelin binding can be readily identified using labeled ghrelin or ghrelin analogs and different receptor fragments. Different strategies can be employed to select fragments to be tested to narrow down the binding region. Examples of such strategies include testing consecutive fragments of about 15 amino acids in length starting at the N-terminus, and
20 testing longer length fragments. If longer length fragments are tested, a fragment binding ghrelin can be subdivided to further locate the ghrelin binding region. Fragments used for binding studies can be generated using recombinant nucleic acid techniques.

Binding assays can be performed using individual compounds or preparations
25 containing different numbers of compounds. A preparation containing different numbers of compounds having the ability to bind to the GHS receptor can be divided into smaller groups of compounds that can be tested to identify the compound(s) binding to the GHS receptor. In an embodiment of the present invention, a test preparation containing at least 10 compounds is used in a binding assay.

30 Binding assays can be performed using recombinantly produced GHS receptor polypeptides present in different environments. Such environments include, for example, cell extracts and purified cell extracts containing the GHS receptor polypeptide expressed from recombinant nucleic acid or naturally occurring nucleic

- 5 acid; and also include, for example, the use of a purified GHS receptor polypeptide produced by recombinant means or from naturally occurring nucleic acid which is introduced into a different environment.

B.1 Screening for GHS Receptor Active Compounds

- 10 Screening for GHS receptor active compounds is facilitated using a recombinantly expressed receptor. Using a recombinantly expressed GHS receptor offers several advantages such as the ability to express the receptor in a defined cell system so that a response to a compound at the GHS receptor can be more readily differentiated from responses at other receptors. For example, the GHS receptor can be
15 expressed in a cell line such as HEK 293, COS 7, or CHO not normally expressing the receptor by an expression vector, wherein the same cell line without the expression vector can act as a control.

- Screening for compounds reducing GHS receptor activity is facilitated through the use of a ghrelin analog in the assay. The use of a ghrelin analog in a screening assay
20 provides for GHS receptor activity. The effect of test compounds on such activity can be measured to identify, for example, allosteric modulators and antagonists.

- GHS receptor activity can be measured using different techniques such as detecting a change in the intracellular conformation of the GHS receptor, in the G-protein coupled activities, and/or in the intracellular messengers. Preferably, GHS
25 receptor activity is measured using techniques such as those measuring intracellular Ca^{2+} . Examples of techniques well known in the art that can be employed to measure Ca^{2+} include the use of dyes such as Fura-2 and the use of Ca^{2+} -bioluminescent sensitive reporter proteins such as aequorin. An example of a cell line employing aequorin to measure G-protein activity is HEK293/aeq17 (Button, D. *et al.*, *Cell Calcium*, (1993),
30 14(9):663-71; and Feighner, S. D. *et al.*, *Science*, (1999), 284(5423):2184-8).

Chimeric receptors containing a ghrelin binding region functionally coupled to a different G-protein can also be used to measure GHS receptor activity. A chimeric GHS receptor contains an N-terminal extracellular domain; a transmembrane domain made

5 up of transmembrane regions, extracellular loop regions, and intracellular loop regions; and an intracellular carboxy terminus. Techniques for producing chimeric receptors and measuring G-protein coupled responses are provided in, for example, International Application Number WO 97/05252, and U.S. Patent Number 5,264,565.

10 Ghrelin analogs can be used to stimulate GHS receptor activity. Such stimulation can be used, for example, to study the effect of GHS receptor modulation, to study the effect of growth hormone secretion, to look for or study ghrelin antagonists, or to achieve a beneficial effect in a subject. It is contemplated that the ghrelin analogs of the instant invention are useful for stimulating gastrointestinal motility.

15 B.1.a. Preparation of CHO-K1 cells expressing the human recombinant GHS receptor

The cDNA for human growth hormone secretagogue receptor (hGHS-R, or ghrelin receptor) was cloned by Polymerase Chain Reaction (PCR) using human brain RNA as a template (Clontech, Palo Alto, CA), gene specific primers flanking the full-
 20 length coding sequence of hGHS-R, (S: 5' - A T G T G G A A C G C G A C G C C C A G C G A A G A G - 3' and AS: 5' - T C A T G T A T T A A T A C T A G A T T C T G T C C A - 3'), and Advantage 2 PCR Kit (Clontech, Palo Alto, CA). The PCR product was cloned into the pCR2.1[®] vector using Original TA[®] Cloning Kit (Invitrogen, Carlsbad, CA). The full length human GHS-R was subcloned into the mammalian expression vector pcDNA
 25 3.1[®] (Invitrogen, Carlsbad, CA). The plasmid was transfected into the Chinese hamster ovary cell line, CHO-K1 (American Type Culture Collection, Rockville, MD) by calcium phosphate method (Wigler, M. *et al.*, *Cell*, (1977), 11(1):223-32). Single cell clones stably expressing the hGHS-R were obtained by selecting transfected cells grown in cloning rings in RPMI 1640 media supplemented with 10 % fetal bovine serum and 1 mM
 30 sodium pyruvate containing 0.8 mg/ml G418 (Gibco[®], Grand Island, NY, U.S.A.).

B.1.b GHS-Receptor Binding Assay:

Membranes for radioligand binding studies can be and were prepared by

5 homogenization of the foregoing CHO-K1 cells expressing the human recombinant GHS
 receptor. The cells were homogenized in 20 ml of ice-cold 50 mM Tris-HCl using a
 Brinkman Polytron® (Westbury, NY; setting 6, 15 sec). The homogenates were washed
 twice by centrifugation (39,000 g / 10 min) and the final pellets were resuspended in 50
 mM Tris-HCl containing 2.5 mM MgCl₂ and 0.1% bovine serum albumin (BSA). For the
 10 assay, 0.4 ml aliquots were incubated with 0.05 nM (¹²⁵I)ghrelin (~2000 Ci/mmol, Perkin
 Elmer Life Sciences, Boston, MA) with and without 0.05 ml of unlabeled competing test
 peptide. After a 60 min incubation at 4°C, the bound (¹²⁵I)ghrelin was separated from
 free (¹²⁵I)ghrelin by rapid filtration through GF/C filters (Brandel, Gaithersburg, MD)
 which had been previously soaked in 0.5% polyethyleneimine/0.1% BSA. The filters
 15 were then washed three times with 5-ml aliquots of ice-cold 50 mM Tris-HCl and 0.1%
 BSA, and the bound radioactivity trapped on the filters was counted by gamma
 spectrometry (Wallac LKB, Gaithersburg, MD). Specific binding was defined as the total
 (¹²⁵I)ghrelin bound minus that bound in the presence of 1000 nM ghrelin (Bachem,
 Torrence, CA).

20 A selection of the preferred embodiments was tested using the receptor binding
 assay discussed above and the results are reported in Table 1 presented below.

TABLE 1 - Receptor Binding Ki Values for Selected Compounds

Example #	COMPOUND	Ki(nM)
#1	H-Apc-D-1-Nal-D-Trp-2-Thi-Lys-NH ₂ ;	0.29
#2	Inp-D-2-Nal-D-Trp-Phe-Lys-NH ₂	0.30
#3	H-Inp-D-1-Nal-D-Trp-2-Thi-Lys-NH ₂	0.31
#4	H-Apc-D-Bal-D-Trp-Phe-Lys-NH ₂	0.32
#5	H-Inp-D-Bal-D-Trp-Phe-Lys-NH ₂	0.33
#6	H-Inp-D-1Nal-D-Trp-Phe-Apc-NH ₂	0.36
#7	H-Apc-D-Bal-D-Trp-2-Thi-Lys-NH ₂	0.36
#8	(Aib ² , Glu ³ (NH-hexyl))hGhrelin(1-28)-NH ₂	0.38
#9	H-Inp-D-Bal-D-Trp-2-Thi-Apc-NH ₂	0.40
#10	(Aib ⁸)hGhrelin(1-28)-NH ₂	0.41
#11	H-Apc-D-2-Nal-D-Trp-Phe-Lys-NH ₂	0.42

#12	H-Inp-D-Bal-D-Trp-2-Thi-Lys-NH ₂	0.42
#13	H-Apc-D-1-Nal-D-Trp-Phe-Lys-NH ₂	0.42
#14	H-Apc-D-1-Nal-D-Trp-Taz-Lys-NH ₂	0.45
#15	H-Inp-D-2-Nal-D-Trp-2-Thi-Lys-NH ₂	0.45
#16	(Aib ^{2,8} , Glu(NH-hexyl) ^{3,17})hGhrelin(1-28)-NH ₂	0.45
#17	H-Apc-D-1-Nal-D-Trp-2-Thi-Apc-NH ₂	0.46
#18	H-Apc-D-1-Nal-D-Trp-Phe-Apc-NH ₂	0.46
#19	H-Inp-D-Bal-D-Trp-Phe-Apc-NH ₂	0.47
#20	H-Apc-D-Bal-D-Trp-Taz-Lys-NH ₂	0.50
#21	(Glu ³ (O-hexyl))hGhrelin(1-28)-NH ₂	0.50
#22	H-Apc-D-Bal-D-Trp-2-Thi-Apc-NH ₂	0.51
#23	H-Inp-D-Bal-D-Trp-Taz-Lys-NH ₂ ;	0.52
#24	H-Inp-D-1-Nal-D-Trp-2-Thi-Apc-NH ₂	0.53
#25	(Aib ²)hGhrelin(1-28)-NH ₂	0.57
	rGhrelin	0.59
#26	(2-Thi ⁹)hGhrelin(1-28)-NH ₂	0.63
#27	(Aib ² , Taz ⁹)hGhrelin(1-28)-NH ₂	0.63
#28	H-Inp-D-2-Nal-D-Trp-Phe-Apc-NH ₂	0.64
#29	(Aib ² , 3-Pal ⁹)hGhrelin(1-28)-NH ₂	0.65
#30	H-Apc-D-Bal-D-2-Nal-Phe-Lys-NH ₂	0.68
#31	H-Apc-D-1-Nal-D-Trp-Phe-NH ₂	0.70
#32	(3-Pal ⁹)hGhrelin(1-28)-NH ₂	0.70
#33	H-Apc-D-Bal-D-Trp-Phe-Apc-NH ₂	0.71
#34	H-Apc-D-1-Nal-D-Trp-2-Thi-NH ₂	0.73
#35	(Glu ³ (NH-Hexyl), Aib ⁸)hGhrelin(1-28)-NH ₂	0.74
#36	(Aib ² , 4-Hyp ⁷)hGhrelin(1-28)-NH ₂	0.75
#37	H-Inp-D-2-Nal-D-Trp-Taz-Lys-NH ₂	0.80
#38	H-Inp-D-Bal-D-Trp-Taz-Apc-NH ₂	0.83
#39	H-Inp-D-1-Nal-D-Trp-2-Thi-NH ₂	0.87
#40	(Asp ³ (O-hexyl))hGhrelin(1-28)-NH ₂	0.88
#41	H-Apc-D-Bal-D-Trp-Phe-NH ₂	0.89
#42	(Lys ⁵)hGhrelin(1-28)-NH ₂	0.89
#43	(Aib ² , Glu ³ (NH-hexyl), Taz ⁹)hGhrelin(1-28)-NH ₂	0.90
#44	(Aib ² , Dhp ⁷)hGhrelin(1-28)-NH ₂	0.91
#45	H-Apc-D-2-Nal-D-Trp-2-Thi-NH ₂	0.95
#46	H-Apc-D-1-Nal-D-Trp-Taz-Apc-NH ₂	0.98
#47	H-Apc-D-Bal-D-Trp-2-Thi-NH ₂	0.98
#48	(Aib ^{2,10})hGhrelin(1-28)-NH ₂	1.02
#49	(Aib ^{2,8})hGhrelin(1-28)-NH ₂	1.02
#50	H-Inp-D-1-Nal-D-Trp-3-Pal-Lys-NH ₂	1.05
#51	(Aib ² , Glu ³ (NH-hexyl), 2-Thi ⁹)hGhrelin(1-28)-NH ₂	1.06
#52	(A5c ²)hGhrelin(1-28)-NH ₂	1.07

#53	(Aib ² , Tic ⁷)hGhrelin(1-28)-NH ₂	1.08
#54	(Aib ² , Thz ⁷)hGhrelin(1-28)-NH ₂	1.08
#55	(Aib ² , 4-Pal ⁹)hGhrelin(1-28)-NH ₂	1.09
#56	(Aib ^{2,8} , Glu ³ (NH-hexyl))hGhrelin(1-28)-NH ₂	1.09
#57	H-Inp-D-1-Nal-D-Trp-Taz-Lys-NH ₂	1.11
#58	H-Apc-D-Bal-D-Trp-Taz-Apc-NH ₂	1.13
#59	(Aib ^{2,10} , Glu ³ (NH-hexyl))hGhrelin(1-28)-NH ₂	1.14
#60	H-Inp-D-1-Nal-D-Trp-Taz-Apc-NH ₂	1.19
#61	Cys ³ (S(CH ₂) ₉ CH ₃)hGhrelin(1-28)-NH ₂	1.24
#62	(Aib ¹)hGhrelin(1-28)-NH ₂	1.28
#63	(Ac-Gly ¹ , Aib ²)hGhrelin(1-28)-NH ₂	1.29
#64	H-Apc-D-1-Nal-D-1-Nal-Phe-Lys-NH ₂	1.32
#65	(Aib ² , Pip ⁷)hGhrelin(1-28)-NH ₂	1.34
#66	H-Inp-D-Bip-D-Trp-Phe-Lys-NH ₂	1.35
#67	H-Apc-D-1-Nal-D-Trp-Taz-NH ₂	1.41
#68	H-Apc-D-Bal-D-1-Nal-Phe-Lys-NH ₂	1.46
#69	H-Apc-D-Bal-D-2-Nal-Phe-Apc-NH ₂	1.49
#70	H-Inp-D-2-Nal-D-Trp-Thr(Bzl)-Lys-NH ₂	1.55
#71	H-Inp-D-2-Nal-D-Trp-3-Pal-Lys-NH ₂	1.58
#72	H-Apc-D-Bal-D-Trp-Taz-NH ₂	1.62
#73	H-Apc-D-1-Nal-D-2-Nal-Phe-Apc-NH ₂	1.71
#74	H-Apc-D-1-Nal-D-1-Nal-Phe-Apc-NH ₂	1.99
#75	(Dap ³ (octanesulfonyl))hGhrelin(1-28)-NH ₂	2.00
#76	(Glu ³ (NH-hexyl))hGhrelin(1-28)-NH ₂	2.03
#77	H-Apc-D-2-Nal-D-Trp-Taz-NH ₂	2.11
#78	H-Inp-D-Bal-D-Trp-Phe-NH ₂	2.30
#79	(Aib ² , Glu ³ (NH-hexyl), 4-Hyp ⁷)hGhrelin(1-28)-NH ₂	2.34
#80	(Aib ² , Glu ³ (NH-hexyl), 3-Pal ⁹)hGhrelin(1-28)-NH ₂	2.35
#81	(Aib ² , Cha ⁵)hGhrelin(1-28)-NH ₂	2.98
#82	(Glu ³ (NH-hexyl), 4-Hyp ⁷)hGhrelin(1-28)-NH ₂	3.36
#83	H-Apc-D-Bal-D-1-Nal-Phe-Apc-NH ₂	3.48
#84	H-Inp-D-2-Nal-D-Trp-2-Thi-NH ₂	4.11
#85	(Aib ² , Glu ³ (NH-hexyl), 4-Pal ⁹)hGhrelin(1-28)-NH ₂	4.15
#86	(Asp ³ (NH-heptyl))hGhrelin(1-28)-NH ₂	4.27
#87	H-Inp-D-2-Nal-D-Trp-Thr(Bzl)-NH ₂	4.46
#88	(Aib ² , Abu ⁶)hGhrelin(1-28)-NH ₂	4.60
#89	(Aib ^{2,12} , Glu ³ (NH-hexyl), 4-Pal ⁹ , Orn ¹⁵)hGhrelin(1-28)-NH ₂	4.83
#90	H-Inp-D-2-Nal-D-Trp-Taz-NH ₂	6.17
#91	H-Inp-D-2-Nal-D-Trp-4-Pal-Lys-NH ₂	7.35
#92	(n-octanoyl-Gly ¹)hGhrelin(1-28)-NH ₂	10.19
#93	H-Inp-D-2-Nal-D-Trp-3-Pal-NH ₂	11.35
#94	(Act ²)hGhrelin(1-28)-NH ₂	12.72

#95	(n-butyryl-Gly ¹)hGhrelin(1-28)-NH ₂	12.78
#96	(Aib ² , A6c ⁵)hGhrelin(1-28)-NH ₂	14.77
#97	H-Inp-D-1-Nal-D-Trp-3-Pal-NH ₂	16.10
#98	H-Inp-D-Bip-D-Trp-Phe-NH ₂	20.00
#99	(isobutyryl-Gly ¹)hGhrelin(1-28)-NH ₂	21.85
	hGhrelin(1-28)-NH ₂	24.16
#100	H-Inp-D-2-Nal-D-Trp-Pff-Lys-NH ₂	25.43
#101	H-Inp-D-2-Nal-D-Bal-Phe-NH ₂	27.40
#102	(A6c ⁵)hGhrelin(1-28)-NH ₂	35.82
#103	H-Inp-D-2-Nal-D-Trp-Pff-NH ₂	36.31
#104	(des-Ser ²)hGhrelin(1-28)-NH ₂	39.10
#105	H-Inp-D-Dip-D-Trp-Phe-Lys-NH ₂	46.78
#106	H-Inp-D-Bal-D-Trp(Ψ)-Pim	48.73
#107	H-Inp-D-1-Nal-D-Trp(Ψ)-Pim	50.55
#108	(Aib ^{2,6})hGhrelin(1-28)-NH ₂	71.55
#109	H-Inp-D-Bpa-D-Trp-Phe-Lys-NH ₂	93.75
#110	H-Inp-D-2-Nal-D-Dip-Phe-NH ₂	104.80
#111	H-Inp-D-Dip-D-Trp-Phe-NH ₂	104.83
#112	H-Inp-D-2-Nal-D-Trp-4-Pal-NH ₂	113.50
#113	H-Inp-D-2-Nal-D-Trp(Ψ)-Pim	116.68
#114	Aib ² ,Act ⁶)hGhrelin(1-28)-NH ₂	155.43
#115	H-Inp-D-Trp-D-2-Nal(Ψ)-Pim	182.00
#116	H-Inp-D-2-Nal-D-Trp-Orn-Lys-NH ₂	243.00
#117	(des-Gly ¹ , des-Ser ²)hGhrelin(1-28)-NH ₂	283.33
#118	H-Inp-D-2-Nal-D-Bpa-Phe-Lys-NH ₂	419.00
#119	H-Aib-D-Ser(Bzl)-D-Trp(Ψ)-Pim	753.33

5

B.2. GHS-R Functional Activity Assays

B.2.a. In vitro GSH Receptor Mediated Intracellular iCa²⁺ Mobilization

The foregoing CHO-K1 cells expressing the human GSH receptor were harvested by incubation in a 0.3% EDTA/phosphate buffered saline solution (25° C) and washed twice by centrifugation. The washed cells were resuspended in Hank's - buffered saline solution (HBSS) for loading of the fluorescent Ca²⁺ indicator Fura-2AM. Cell suspensions of approximately 10⁶ cells/ml were incubated with 2 μM Fura-2AM for 30 min at about 25 °C. Unloaded Fura-2AM was removed by centrifugation twice in HBBS, and the final suspensions were transferred to a spectrofluorometer (Hitachi F-2000) equipped with a magnetic stirring mechanism and a temperature-regulated cuvette

15

5 holder. After equilibration to 37 °C, the ghrelin analogs were added for measurement of intracellular Ca²⁺ mobilization. The excitation and emission wavelengths were 340 and 510 nm, respectively.

B.2.b. In vivo GH Release/Suppression

As is well known in the art, compounds may be tested for their ability to
10 stimulate or suppress release of growth hormone (GH) *in vivo* (Deghenghi, R. *et al.*, *Life Sciences*, (1994), 54(18):1321-8; and International Patent Application No. PCT/EP01/07929 [WO 02/08250]). Thus for example in order to ascertain a compound's ability to stimulate GH release in vivo the compound may be injected subcutaneously in 10-day old rats at a dose of, e.g., 300 mg/kg. The circulating GH may be determined at, e.g., 15
15 minutes after injection and compared to GH levels in rats injected with a solvent control.

B.3. Effect upon gastrointestinal motility

Ghrelin has been shown to increase gastric motility and improve gastric emptying in subjects suffering from gastroparesis. Selected compounds of the invention can be and were tested to determine the effect of the compounds upon gastric emptying
20 and intestinal transit.

B.3.a. In vivo study of ghrelin on intestinal transit

The effect of native ghrelin and a peptidyl analog of ghrelin, H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂ (Example 19) on intestinal transit was conducted. In the study, groups of eight rats were fasted for approximately 24 hours with free access to water.
25 Anesthetized test subjects were administered native ghrelin, the selected analog and atropine as a control. The test subjects were administered a 2 ml charcoal meal by esophageal gavage approximately five minutes after the initial administration of ghrelin, the selected analog or atropine. After approximately an additional 25 minutes, the test subjects were sacrificed by cervical rupture and the small intestines were removed. The
30 distance the charcoal traveled was measured from the pylorus. Both ghrelin and the tested peptidyl analog of ghrelin (H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂) accelerated gastric intestinal transit.

5 B.3.b. In vivo study of ghrelin on gastric emptying

Selected compounds of the invention can be and were tested to determine the effect of the compounds upon gastric emptying. The effect of native ghrelin and a peptidyl analog of ghrelin, H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂, on gastric emptying was conducted. In the study, groups of eight male Sprague Dawley rats (weighing 200 – 250
10 gms) were fasted for approximately 24 hours with free access to water. Native ghrelin, the selected ghrelin analog and a metoclopramide control compound were administered intravenously to anesthetized test subjects. Approximately five minutes after the initial administration of native ghrelin, the selected ghrelin analog or the control compound, a
15 1.5 ml meal marked with phenol red (0.5 mg/ml phenol red and 1.5% methyl cellulose in whole milk) was administered to each test subject by esophageal gavage. After approximately an additional 20 minutes, the test subjects were sacrificed by cervical rupture and the stomachs removed and individually pulverized. The residual phenol red in the stomach of the test subjects was extracted and was measured spectrophotometrically at a wavelength of 560 nm. Both ghrelin and the tested peptidyl
20 analog of ghrelin (H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂) accelerated gastric emptying.

In other experiments, groups of eight male Sprague Dawley rats (weighing 200 – 250 gms) were fasted for approximately 24 hours with free access to water. The animals were injected subcutaneously with either vehicle or varying doses of native ghrelin or selected ghrelin analogs. After approximately 15 minutes, 1.5 ml of a phenol red
25 marked nutrient meal (0.5 mg/ml phenol red & 1.5% methyl cellulose in whole milk) was administered orally to the rats. After an additional approximately 15 minutes, the subjects were sacrificed by cervical rupture and, after clamping the pylorus & cardia, the stomach was removed. The residual phenol red in the stomach was extracted and measured by spectrophotometric methods at a wavelength of 560 nm. Both ghrelin and
30 the tested peptidyl analog of ghrelin (H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂) accelerated gastric emptying (see the figures).

B.3.c. Effect on POI in rat

A 3 centimeter laparotomy was used to induce gastric ileus in male Sprague

5 Dawley rats (weighing 200 – 250 gms) under isoflurane anesthesia. The abdominal muscles and skin were closed with suture and the animals were allowed to recover for approximately two hours and forty five minutes. At this time, vehicle or selected ghrelin analogs were administered subcutaneously to the laparectomized animals. Approximately 15 minutes after administration of the compounds or vehicle, the phenol
10 red marked meal (see above) was introduced into the animals. After an additional approximately 15 minutes, the subjects were sacrificed by cervical rupture and gastric emptying was measured as described above. Both ghrelin and the tested peptidyl analog of ghrelin (H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂) significantly accelerated gastric emptying under post-operative ileus conditions.

15 B.3.d. Effect on POI in rat in the presence of morphine

A 3 centimeter laparotomy was used to induce gastric ileus in male Sprague Dawley rats (weighing 200 – 250 gms) under isoflurane anesthesia. The abdominal muscles and skin were closed with suture and the animals were allowed to recover for approximately 2.5 hours at which time the laparectomized animals received a
20 subcutaneous administration of 4 mg/kg morphine. Approximately 15 minutes after receiving the morphine, vehicle or selected ghrelin analogs were administered subcutaneously to the laparectomized animals. Approximately 15 minutes after administration of the compounds or vehicle, the phenol red marked meal (see above) was introduced into the animals. After an additional approximately 15 minutes, the
25 subjects were sacrificed by cervical rupture and gastric emptying was measured as described above. As can be seen in the figures, ghrelin and its analog significantly accelerate gastric emptying in the presence of morphine and post-operative ileus conditions.

One skilled in the art would know that assays similar to those described herein
30 may be used to determine the effect of a ghrelin analog upon gastric emptying and intestinal transit.

5 Administration

Ghrelin analogs can be formulated and administered to a subject using the guidance provided herein along with techniques well known in the art. The preferred route of administration ensures that an effective amount of compound reaches the target. Guidelines for pharmaceutical administration in general are provided in, for example, Remington's Pharmaceutical Sciences 18th Edition, Ed. Gennaro, Mack Publishing, 1990, and Modern Pharmaceutics 2nd Edition, Eds. Banker and Rhodes, Marcel Dekker, Inc., 1990..

Ghrelin analogs can be prepared as acidic or basic salts. Pharmaceutically acceptable salts (in the form of water- or oil-soluble or dispersible products) include conventional non-toxic salts or the quaternary ammonium salts that are formed, e.g., from inorganic or organic acids or bases. Examples of such salts include acid addition salts such as acetate, adipate, alginate, aspartate, benzoate, benzenesulfonate, bisulfate, butyrate, citrate, camphorate, camphorsulfonate, cyclopentanepropionate, digluconate, dodecylsulfate, ethanesulfonate, fumarate, glucoheptanoate, glycerophosphate, hemisulfate, heptanoate, hexanoate, hydrochloride, hydrobromide, hydroiodide, 2-hydroxyethanesulfonate, lactate, maleate, methanesulfonate, 2-naphthalenesulfonate, nicotinate, oxalate, pamoate, pectinate, persulfate, 3-phenylpropionate, picrate, pivalate, propionate, succinate, tartrate, thiocyanate, tosylate, and undecanoate; and base salts such as ammonium salts, alkali metal salts such as sodium and potassium salts, alkaline earth metal salts such as calcium and magnesium salts, salts with organic bases such as dicyclohexylamine salts, N-methyl-D-glucamine, and salts with amino acids such as arginine and lysine.

Ghrelin analogs can be administered using different routes including oral, nasal, by injection, transdermal, and transmucosally. Active ingredients to be administered orally as a suspension can be prepared according to techniques well known in the art of pharmaceutical formulation and may contain microcrystalline cellulose for imparting bulk, alginic acid or sodium alginate as a suspending agent, methylcellulose as a viscosity enhancer, and sweeteners/flavoring agents. As immediate release tablets, these

5 compositions may contain microcrystalline cellulose, dicalcium phosphate, starch, magnesium stearate and lactose and/or other excipients, binders, extenders, disintegrants, diluents and lubricants.

Administered by nasal aerosol or inhalation formulations may be prepared, for example, as solutions in saline, employing benzyl alcohol or other suitable preservatives,
10 absorption promoters to enhance bioavailability, employing fluorocarbons, and/or employing other solubilizing or dispersing agents.

Ghrelin analogs may also be administered in intravenous (both bolus and infusion), intraperitoneal, subcutaneous, topical with or without occlusion, or intramuscular form. When administered by injection, the injectable solution or
15 suspension may be formulated using suitable non-toxic, parenterally-acceptable diluents or solvents, such as Ringer's solution or isotonic sodium chloride solution, or suitable dispersing or wetting and suspending agents, such as sterile, bland, fixed oils, including synthetic mono- or diglycerides, and fatty acids, including oleic acid.

Suitable dosing regimens are preferably determined taking into account factors
20 well known in the art including type of subject being dosed; age, weight, sex and medical condition of the subject; the route of administration; the renal and hepatic function of the subject; the desired effect; and the particular compound employed.

Optimal precision in achieving concentrations of drug within the range that yields efficacy without toxicity requires a regimen based on the kinetics of the drug's
25 availability to target sites. This involves a consideration of the distribution, equilibrium, and elimination of a drug. The daily dose for a subject is expected to be between 0.01 and 1,000 mg per subject per day.

Ghrelin analogs can be provided in a kit. Such a kit typically contains an active compound in dosage forms for administration. A dosage form contains a sufficient
30 amount of active compound such that a desirable effect can be obtained when administered to a subject during regular intervals, such as 1 to 6 times a day, during the course of 1 or more days. Preferably, a kit contains instructions indicating the use of the dosage form to achieve a desirable affect and the amount of dosage form to be taken

5 over a specified time period.

The invention has been described in an illustrative manner, and it is to be understood that the terminology which has been used is intended to be in the nature of words of description rather than of limitation. Obviously, many modifications and variations of the present invention are possible in light of the above teachings. It is, therefore, to be
10 understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

The patent and scientific literature referred to herein represents knowledge that is available to those with skill in the art.

OTHER EMBODIMENTS

15 The foregoing description has been limited to specific embodiments of this invention. It will be apparent however, that variations and modifications may be made to the invention, with the attainment of some or all of the advantages of the invention. Such embodiments are also within the scope of the invention.

This description contains a sequence listing in electronic form in ASCII text format. A
20 copy of the sequence listing in electronic form is available from the Canadian Intellectual Property Office.

What is claimed is:

1. Use of a peptidyl analog of ghrelin or a pharmaceutically acceptable salt thereof, for stimulating gastrointestinal system motility in a patient, wherein said peptidyl analog of ghrelin is:

H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂;

H-Inp-D-2-Nal-D-Trp-Phe-Apc-NH₂;

H-Inp-D-Bal-D-Trp-2-Thi-Apc-NH₂;

H-Inp-D-Bal-D-Trp-Taz-Apc-NH₂;

H-Inp-D-Bal-D-Trp-Phe-Lys-NH₂;

H-Apc-D-1-Nal-D-Trp-2-Thi-Apc-NH₂; or, in the alternative,

H-Apc-D-1-Nal-D-Trp-2-Thi-NH₂.

2. Use of a peptidyl analog of ghrelin or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for stimulating gastrointestinal system motility in a patient, wherein said peptidyl analog of ghrelin is:

H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂;

H-Inp-D-2-Nal-D-Trp-Phe-Apc-NH₂;

H-Inp-D-Bal-D-Trp-2-Thi-Apc-NH₂;

H-Inp-D-Bal-D-Trp-Taz-Apc-NH₂;

H-Inp-D-Bal-D-Trp-Phe-Lys-NH₂;

H-Apc-D-1-Nal-D-Trp-2-Thi-Apc-NH₂; or, in the alternative,

H-Apc-D-1-Nal-D-Trp-2-Thi-NH₂.

3. Use of a peptidyl analog of ghrelin or a pharmaceutically acceptable salt thereof, for treating opioid-related bowel dysfunction in a patient, wherein said peptidyl analog of ghrelin is:

H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂;

H-Inp-D-2-Nal-D-Trp-Phe-Apc-NH₂;

H-Inp-D-Bal-D-Trp-2-Thi-Apc-NH₂;

H-Inp-D-Bal-D-Trp-Taz-Apc-NH₂;

H-Inp-D-Bal-D-Trp-Phe-Lys-NH₂;

H-Apc-D-1-Nal-D-Trp-2-Thi-Apc-NH₂; or, in the alternative,

H-Apc-D-1-Nal-D-Trp-2-Thi-NH₂.

4. Use of a peptidyl analog of ghrelin or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating opioid-related bowel dysfunction in a patient, wherein said peptidyl analog of ghrelin is:

H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂;

H-Inp-D-2-Nal-D-Trp-Phe-Apc-NH₂;

H-Inp-D-Bal-D-Trp-2-Thi-Apc-NH₂;

H-Inp-D-Bal-D-Trp-Taz-Apc-NH₂;

H-Inp-D-Bal-D-Trp-Phe-Lys-NH₂;

H-Apc-D-1-Nal-D-Trp-2-Thi-Apc-NH₂; or, in the alternative,

H-Apc-D-1-Nal-D-Trp-2-Thi-NH₂.

5. The use according to any one of claims 1 to 4, wherein said peptidyl analog of ghrelin is H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂.

6. The use according to any one of claims 1 to 5, wherein said patient is a human.

7. The use according to any one of claims 1 to 6, wherein said patient is experiencing gastroesophageal reflux disease, ileus, emesis, gastroparesis, irritable bowel syndrome, constipation, or colonic pseudo-obstruction.

8. The use according to any one of claims 1 to 6, wherein said patient is experiencing ileus, emesis or gastroparesis.

9. The use according to any one of claims 1 to 6, wherein said patient is experiencing ileus.

10. The use according to claim 9, wherein said ileus is postoperative ileus.
11. The use according to claim 10, wherein said postoperative ileus follows abdominal surgery.
12. The use according to claim 9, wherein said ileus is caused by a factor other than abdominal surgery.
13. The use according to any one of claims 1 to 6, wherein the patient is experiencing postoperative ileus following gastrointestinal surgery.
14. The use according to any one of claims 9 to 13, wherein the ileus is of the stomach, small intestine or large intestine.
15. The use according to any one of claims 1 to 6, wherein said patient is experiencing emesis.
16. The use according to claim 15, wherein said emesis is associated with treatment with an anti-cancer chemotherapeutic agent, pregnancy, bulimia, or anorexia.
17. The use according to claim 15, wherein said emesis is associated with treatment with an anti-cancer chemotherapeutic agent.
18. The use according to claim 15, wherein said emesis is associated with pregnancy.
19. The use according to claim 15, wherein said emesis is associated with bulimia.
20. The use according to claim 15, wherein said emesis is associated with anorexia.
21. The use according to any one of claims 1 to 6, wherein said patient is experiencing gastroparesis.
22. The use according to claim 21, wherein said gastroparesis is associated with diabetes.

23. The use according to claim 22, wherein said diabetes is Type I diabetes.
24. The use according to claim 22, wherein said diabetes is Type II diabetes.
25. The use according to any one of claims 1 to 6, wherein the patient is the recipient of surgery, wherein the surgery is: manipulation of the gastrointestinal tract, indirect manipulation of the gastrointestinal tract, a laparotomy, transplant surgery, surgery involving the urogenital system, surgery involving the lymphatic system, surgery involving the respiratory system, or, in the alternative, surgery to treat cancer of any organ or tissue within the abdomen.
26. The use according to claim 25, wherein said analog or salt thereof is for administration before, during or after said surgery, or a combination thereof.
27. The use according to claim 26, wherein said administration is before said surgery.
28. The use according to claim 26, wherein said administration is during said surgery.
29. The use according to claim 26, wherein said administration is after said surgery.
30. The use according to any one of claims 1 to 29, wherein said analog or salt thereof is for administration intravenously, subcutaneously, orally, or, in the alternative, by implantation of a sustained release formulation.
31. Use of a peptidyl analog of ghrelin or a pharmaceutically acceptable salt thereof, for preventing post-operative ileus in a patient, wherein said peptidyl analog of ghrelin is:
 - H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂;
 - H-Inp-D-2-Nal-D-Trp-Phe-Apc-NH₂;
 - H-Inp-D-Bal-D-Trp-2-Thi-Apc-NH₂;
 - H-Inp-D-Bal-D-Trp-Taz-Apc-NH₂;

H-Inp-D-Bal-D-Trp-Phe-Lys-NH₂;

H-Apc-D-1-Nal-D-Trp-2-Thi-Apc-NH₂; or, in the alternative,

H-Apc-D-1-Nal-D-Trp-2-Thi-NH₂.

32. Use of a peptidyl analog of ghrelin or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for preventing post-operative ileus in a patient, wherein said peptidyl analog of ghrelin is:

H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂;

H-Inp-D-2-Nal-D-Trp-Phe-Apc-NH₂;

H-Inp-D-Bal-D-Trp-2-Thi-Apc-NH₂;

H-Inp-D-Bal-D-Trp-Taz-Apc-NH₂;

H-Inp-D-Bal-D-Trp-Phe-Lys-NH₂;

H-Apc-D-1-Nal-D-Trp-2-Thi-Apc-NH₂; or, in the alternative,

H-Apc-D-1-Nal-D-Trp-2-Thi-NH₂.

33. The use according to claim 31 or 32, wherein said peptidyl analog of ghrelin is H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂.

34. The use according to any one of claims 31 to 33, wherein said analog or salt thereof is for administration before surgery.

35. The use according to any one of claims 31 to 33, wherein said analog or salt thereof is for administration during surgery.

36. The use according to any one of claims 31 to 33, wherein said analog or salt thereof is for administration after surgery.

37. Use of a peptidyl analog of ghrelin or a pharmaceutically acceptable salt thereof, for preventing gastroesophageal reflux disease, emesis, gastroparesis, irritable bowel syndrome (IBS), constipation, or colonic pseudo-obstruction in a patient, wherein said peptidyl analog of ghrelin is:

H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂;
 H-Inp-D-2-Nal-D-Trp-Phe-Apc-NH₂;
 H-Inp-D-Bal-D-Trp-2-Thi-Apc-NH₂;
 H-Inp-D-Bal-D-Trp-Taz-Apc-NH₂;
 H-Inp-D-Bal-D-Trp-Phe-Lys-NH₂;
 H-Apc-D-1-Nal-D-Trp-2-Thi-Apc-NH₂; or, in the alternative,
 H-Apc-D-1-Nal-D-Trp-2-Thi-NH₂.

38. Use of a peptidyl analog of ghrelin or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for preventing gastroesophageal reflux disease, emesis, gastroparesis, irritable bowel syndrome (IBS), constipation, or colonic pseudo-obstruction in a patient, wherein said peptidyl analog of ghrelin is:

H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂;
 H-Inp-D-2-Nal-D-Trp-Phe-Apc-NH₂;
 H-Inp-D-Bal-D-Trp-2-Thi-Apc-NH₂;
 H-Inp-D-Bal-D-Trp-Taz-Apc-NH₂;
 H-Inp-D-Bal-D-Trp-Phe-Lys-NH₂;
 H-Apc-D-1-Nal-D-Trp-2-Thi-Apc-NH₂; or, in the alternative,
 H-Apc-D-1-Nal-D-Trp-2-Thi-NH₂.

39. The use according to claim 37 or 38, wherein said peptidyl analog of ghrelin is H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂.

40. The use according to any one of claims 37 to 39 for said preventing of gastroesophageal reflux disease.

41. The use according to any one of claims 37 to 39 for said preventing of IBS.

42. The use according to any one of claims 37 to 39 for said preventing of constipation.

43. The use according to any one of claims 37 to 39 for said preventing of colonic-pseudo obstruction.
44. The use according to any one of claims 37 to 39 for said preventing of emesis.
45. The use according to any one of claims 37 to 39 or claim 44, wherein said emesis is associated with an anti-cancer chemotherapeutic agent treatment, pregnancy, bulimia, or anorexia.
46. The use according to any one of claims 37 to 39 or claim 44, wherein said emesis is associated with an anti-cancer chemotherapeutic agent treatment.
47. The use according to any one of claims 37 to 39 or claim 44, wherein said emesis is associated with pregnancy.
48. The use according to any one of claims 37 to 39 or claim 44, wherein said emesis is associated with bulimia.
49. The use according to any one of claims 37 to 39 or claim 44, wherein said emesis is associated with anorexia.
50. The use according to any one of claims 37 to 39, wherein said patient is experiencing gastroparesis.
51. The use according to claim 50, wherein said gastroparesis is associated with diabetes.
52. The use according to claim 51, wherein said diabetes is Type I diabetes.
53. The use according to claim 51, wherein said diabetes is Type II diabetes.
54. The use according to any one of claims 31 to 53, wherein said analog or salt thereof is for administration intravenously, subcutaneously, orally, or, in the alternative by implantation of a sustained release formulation.

55. The use according to claim 30 or 54, wherein said administration is intravenous.
56. The use according to claim 30 or 54, wherein said administration is subcutaneous.
57. The use according to claim 30 or 54, wherein said administration is oral.
58. The use according to claim 30 or 54, wherein said administration is by implantation of a sustained release formulation.
59. The use according to any one of claims 1 to 58, wherein said patient is the recipient of an opioid analgesic.

SCHEMATIC PRESENTATION OF METHODS

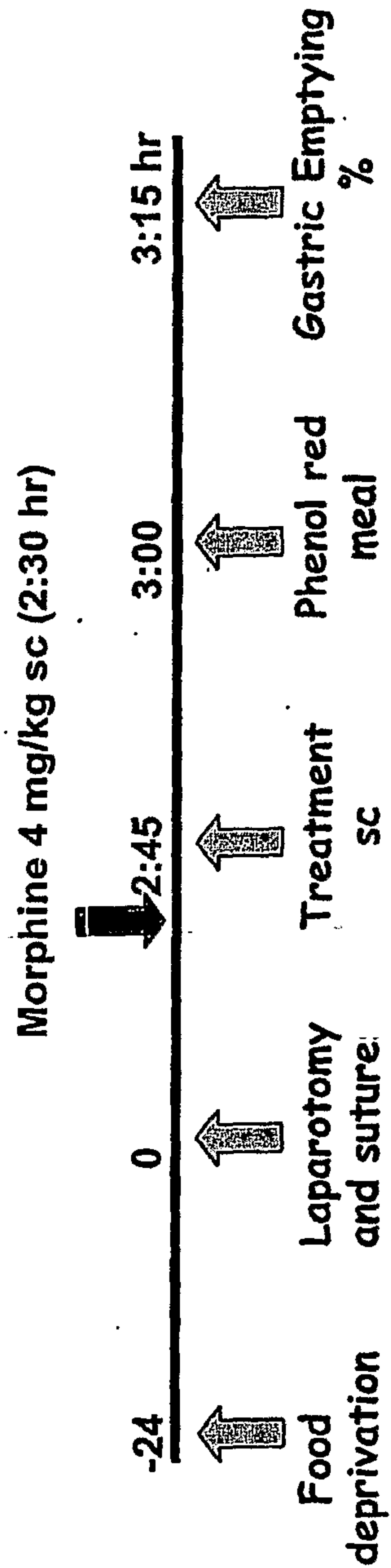
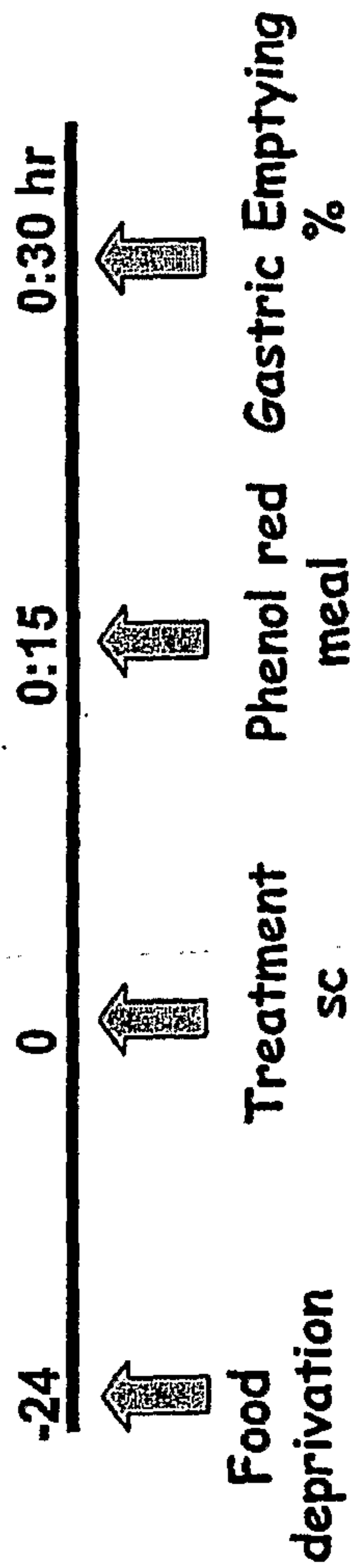
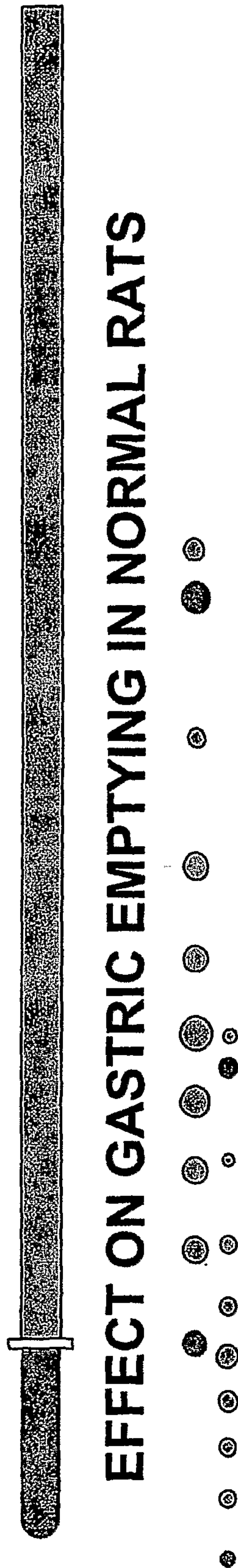


FIG. 1



H-Inp-D-Bal-D-Trp-Phe-Apc-NH₂

h-ghrelin(1-28)-NH₂

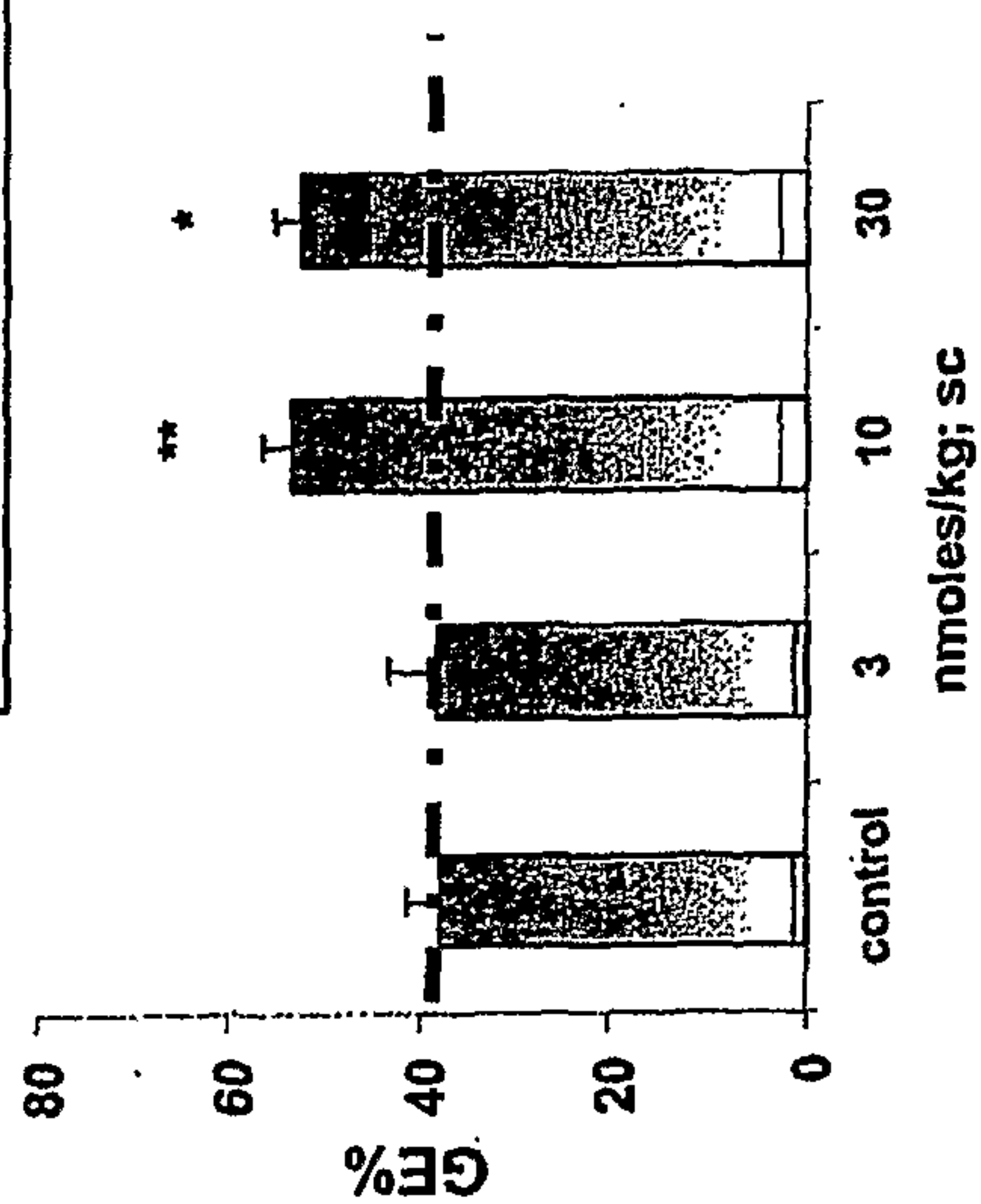
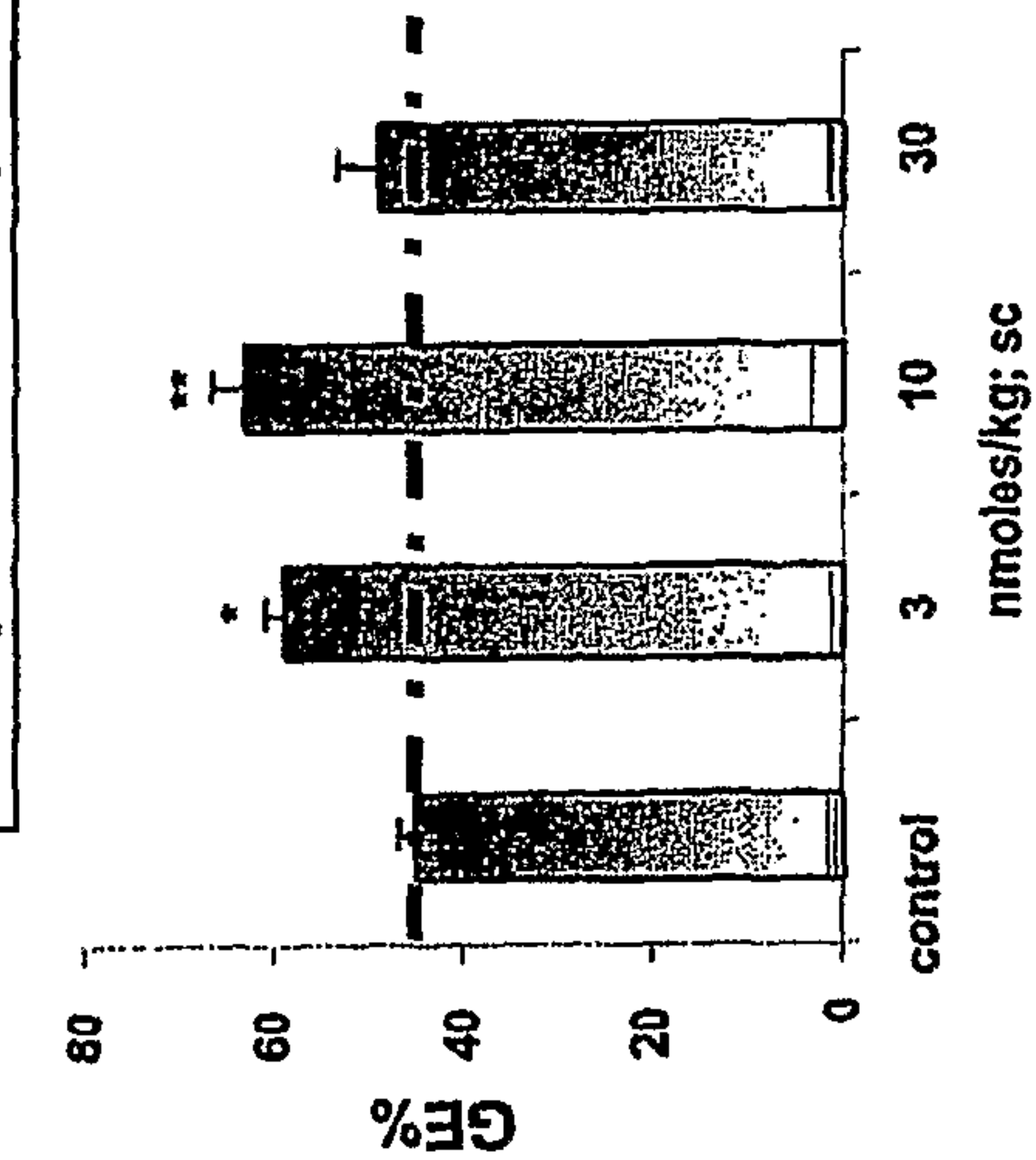


FIG. 2

POI delays gastric emptying & morphine worsens it further

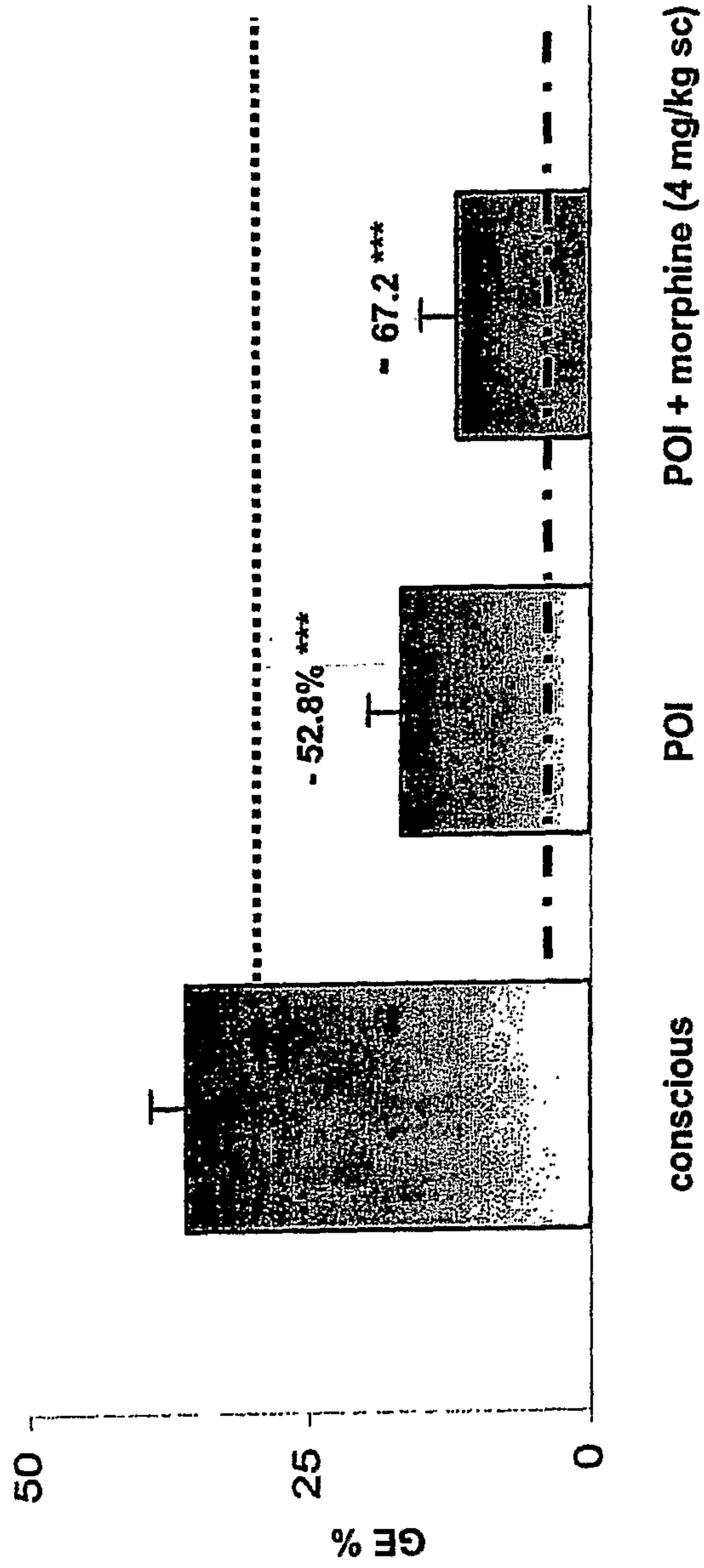


FIG. 3

EFFECT ON GASTRIC EMPTYING IN POI RAT MODEL

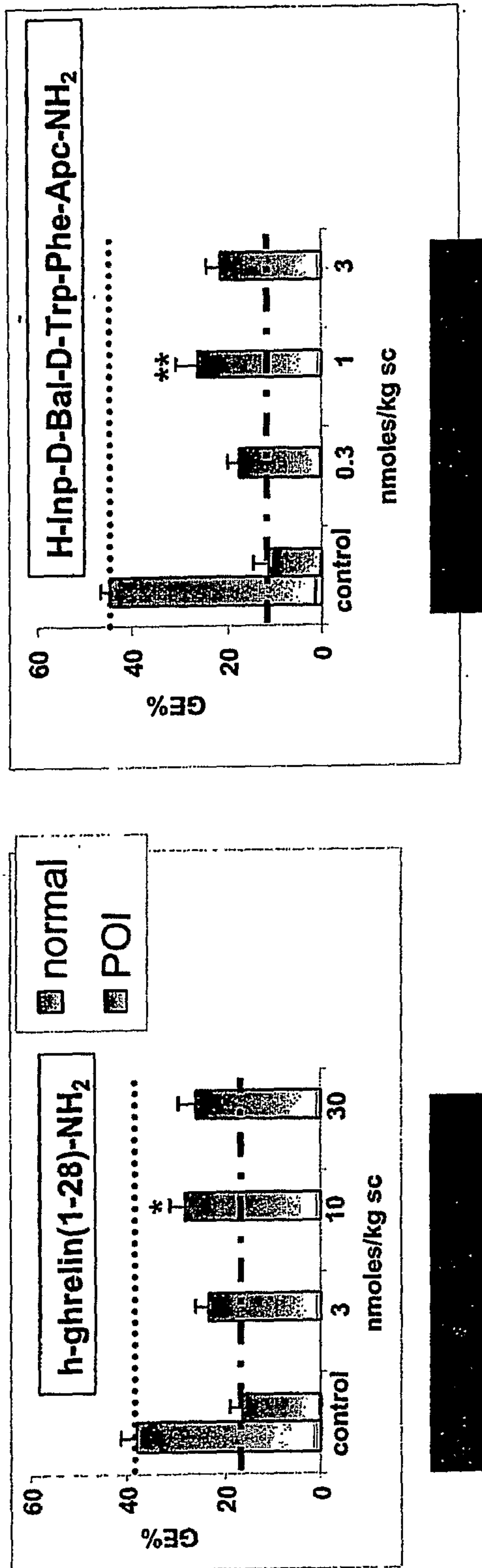


FIG. 4

EFFECT ON GASTRIC EMPTYING IN POI + Morphine RAT MODEL

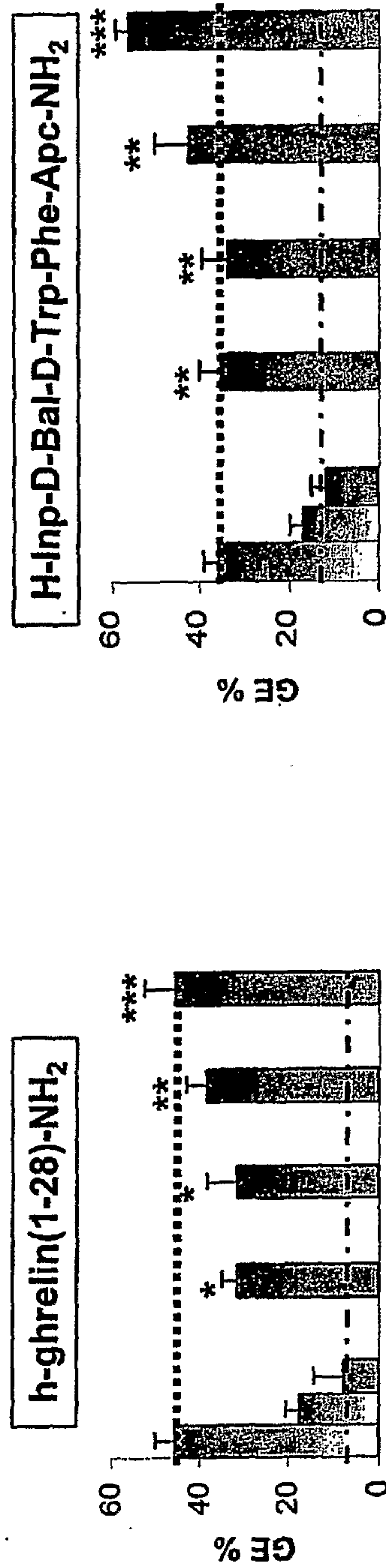


FIG. 5

EFFECT ON GASTRIC EMPTYING IN POI RAT MODEL

