CLAIMS

1. A compound having the formula R^1-X-Z-R^2

wherein

R^1 is H, C_{1-4} alkyl, acetyl, formyl, benzoyl or trifluoroacetyl;

R^2 is OH or NH_2;

X is a peptide which has the formula I:

His-Ser-Gln-Gly-Thr-Phe-Thr-Ser-Asp-Tyr-Ser-Lys-Tyr-Leu-Asp-Ser-Lys-Ala-Ala-His-Asp-Phe-Val-Glu-Trp-Leu-Leu-Arg-Ala

or differs from formula I at up to 4 of the following positions whereby, if different from formula I:

the residue at position 2 is selected from: Aib, D-Ser;
the residue at position 12 is selected from: Leu, Arg, Dpu, Dpr, Orn;
the residue at position 16 is selected from: Arg, His, Lys, Glu, Asp;
the residue at position 17 is selected from: Arg, Leu, Dpu, Dpr, Orn;
the residue at position 18 is selected from: Arg, Lys, His, Ser, Tyr;
the residue at position 20 is selected from: Gln, Lys, Arg, Glu, Asp;
the residue at position 21 is Glu;
the residue at position 24 is selected from: Gln, Leu, Ala, Lys, Arg, Asp;
the residue at position 27 is selected from: Met, Cys, Lys, Arg, Glu; and
the residue at position 28 is selected from: Asn, Ser, Lys, Glu, Ala, Leu, Asp; ~~and~~
~~the residue at position 29 is selected from: Thr, Glu, Lys;~~

and Z is absent or a peptide sequence of 1-20 amino acid units selected from the group consisting of Ala, Leu, Ser, Thr, Tyr, Cys, Glu, Lys, Arg, Dbu, Dpr and Orn;

or a pharmaceutically acceptable salt thereof.

2. A compound having the formula R^1-X-Z-R^2

wherein

R^1 is H, C_{1-4} alkyl, acetyl, formyl, benzoyl or trifluoroacetyl;

R^2 is OH or NH_2;

X is a peptide which has the formula I:

His-Ser-Gln-Gly-Thr-Phe-Thr-Ser-Asp-Tyr-Ser-Lys-Tyr-Leu-Asp-Ser-Lys-Ala-Ala-His-Asp-Phe-Val-Glu-Trp-Leu-Leu-Arg-Ala

or differs from formula I at up to 5 of the following positions whereby, if different from formula I:

the residue at position 2 is selected from: Aib, D-Ser;
the residue at position 16 is selected from: Arg, His, Lys, Glu;
the residue at position 17 is: Arg, Leu, Dpu, Dpr, Orn;
the residue at position 20 is selected from: Gln, Lys, Arg, Glu, Asp;
the residue at position 21 is Glu;
the residue at position 24 is selected from: Gln, Leu, Ala, Lys, Arg, Asp;
the residue at position 27 is selected from: Met, Cys, Lys, Arg, Glu; and
the residue at position 28 is selected from: Asn, Ser, Lys, Glu, Ala, Leu, Asp; ~~and~~
~~the residue at position 29 is selected from: Thr, Glu, Lys;~~

and Z is absent or a peptide sequence of 1-20 amino acid units selected from the group consisting of Ala, Leu, Ser, Thr, Tyr, Cys, Glu, Lys, Arg, Dbu, Dpr and Orn;

or a pharmaceutically acceptable salt thereof.

3. A compound according to claim 1 wherein X differs from formula I at up to 4 of the following positions whereby, if different from formula I:

the residue at position 2 is selected from: Aib, D-Ser;
the residue at position 16 is selected from: Arg, His, Lys, Glu, Gly;
the residue at position 24 is selected from: Gln, Leu, Ala, Lys, Arg;
the residue at position 27 is selected from: Met, Cys, Lys, Arg, Glu; and
the residue at position 28 is selected from: Asn, Ser, Lys, Glu, Ala, Leu; ~~and~~
~~the residue at position 29 is selected from: Thr, Glu, Lys~~.

4. A compound according any one of the preceding claims wherein X comprises one or more of the following sets of residues:
17-Lys, 18-Ala;
17-Leu, 18-Ala;

17-Lys, 18-Ala, 20-His;
17-Leu, 18-Ala, 20-His;
17-Lys, 18-Ala, 24-Glu;
17-Leu, 18-Ala, 24-Glu;
17-Lys, 18-Ala, 27-Leu;
17-Leu, 18-Ala, 27-Leu;
~~17-Lys, 18-Ala, 29-Ala;~~
~~17-Leu, 18-Ala, 29-Ala;~~
~~17-Lys, 18-Ala, 27-Leu, 29-Ala;~~
~~17-Leu, 18-Ala, 27-Leu, 29-Ala;~~
17-Lys, 18-Ala, 27-Leu, 28-Arg~~, 29-Ala~~;
17-Leu, 18-Ala, 27-Leu, 28-Arg~~, 29-Ala~~;
24-Glu, 28-Arg;
24-Glu, 28-Arg, 27-Leu;
~~24-Glu, 28-Arg, 27-Leu, 29-Ala;~~
27-Leu, 28-Arg~~, 29-Ala~~;
~~29-Ala;~~
20-Arg, 24-Arg, 27-Lys, 28-Leu;
17-Arg;
18-Arg;
20-Gln;
24-Gln;
~~27-Met, 28-Asn, 29-Thr;~~ or
24-Lys.

~~5. A compound according to claim 2 wherein X comprises one of the following sets of residues: 20-Gln, 24-Gln, 27-Met, 28-Asn, 29-Thr; or 17-Leu, 20-Gln, 24-Gln, 28-Asn, 29-Thr.~~

56. A compound according to claim 1 wherein X has the sequence:
H-DSer-QGTFTSDYSKYLDSKAAHDFVEWLLRA (SEQ ID NO: 6);
H-Aib-QGTFTSDYSKYLDSKAAHDFVEWLLRA (SEQ ID NO: 7);
HSQGTFTSDYSKYLDSKAARDFVRWLKLA (SEQ ID NO: 5);
HSQGTFTSDYSKYLDSRAAHDFVEWLLRA (SEQ ID NO: 12);
HSQGTFTSDYSKYLDSKRAHDFVEWLLRA (SEQ ID NO: 13);
HSQGTFTSDYSKYLDSKAAQDFVEWLLRA (SEQ ID NO: 8);
HSQGTFTSDYSKYLDSKAAHDFVQWLLRA (SEQ ID NO: 9);
~~HSQGTFTSDYSKYLDSKAAHDFVEWLMNT (SEQ ID NO: 10);~~
HSQGTFTSDYSKYLDSKAAHDFVKWLLRA (SEQ ID NO: 11);

HSQGTFTSDYSKYLDSKAAKDFVEWLLRA; (SEQ ID NO: 18);
HSQGTFTSDYSKYLDKKAAHDFVEWLLRA; (SEQ ID NO: 19) or
HSQGTFTSDYSKYLDSKAAHDFVEWLLRA (SEQ ID NO: 20);

~~7. A compound according to claim 2 wherein X has the sequence: HSQGTFTSDYSKYLDSKAAQDFVQWLMNT (SEQ ID NO: 15) or HSQGTFTSDYSKYLDSLAAQDFVQWLLNT (SEQ ID NO: 14).~~

6. A compound according to any one of the preceding claims wherein R^1 is H.

7. A compound according to any one of the preceding claims wherein R^2 is NH_2.

8. A compound according to any one of the preceding claims wherein Z has no more than 25% sequence identity with the corresponding portion of the IP-1 sequence of human oxyntomodulin having the sequence Lys-Arg-Asn-Arg-Asn-Asn-Ile-Ala.

9. A compound according to any one of the preceding claims wherein Z has a Cys as the C-terminal residue.

10. A compound according to any one of claims 1 to 7 wherein Z is absent.

11. A compound according to any one of the preceding claims wherein one or more of the amino acid side chains in the compound, for example in the peptide X, is conjugated to a lipophilic substituent or a polymeric moiety.

12. A compound according to claim 11 wherein X has the sequence:
HSQGTFTSDYSKYLDSK(isoGlu(Palm))AAHDFVEWLLRA (SEQ ID NO: 17)

13. A nucleic acid encoding a compound according to any one of the preceding claims.

14. An expression vector comprising a nucleic acid according to claim 13.

15. A host cell comprising a nucleic acid according to claim 13 or an expression vector according to claim 14.

16. A pharmaceutical composition comprising a compound, nucleic acid, expression vector or host cell according to any one of the preceding claims, in admixture with pharmaceutically acceptable carrier.

1719. Use of a compound, nucleic acid, expression vector or host cell according to any one of claims 1 to 1517 in the preparation of a medicament for preventing weight gain, promoting weight loss, or for treatment of a condition caused by or associated with excess body weight or obesity including morbid obesity, obesity linked inflammation, obesity linked gallbladder disease and obesity induced sleep apnea, or for treatment of insulin resistance, glucose intolerance, type 2 diabetes, hypertension, atherogenic dyslipidimia, atherosclerois, arteriosclerosis, coronary heart disease or stroke.

1820. A compound, nucleic acid, expression vector or host cell according to any one of claims 1 to 1315 for use in ~~a method of~~ medical treatment.

1921. A compound, nucleic acid, expression vector or host cell according to any one of claims 1 to 1214 for use in ~~a method of~~ preventing weight gain, promoting weight loss, or for treatment of a condition caused by or associated with excess body weight or obesity including morbid obesity, obesity linked inflammation, obesity linked gallbladder disease and obesity induced sleep apnea, or for treatment of insulin resistance, glucose intolerance, type 2 diabetes, hypertension, atherogenic dyslipidimia, atherosclerois, arteriosclerosis, coronary heart disease or stroke.