WHAT IS CLAIMED IS:

1. An isolated peptide comprising the amino acid sequence:

HX2QGTFTSDX10SXl2X13LX15X16X17X18AX20X21FX23X24WLX27X28GX30;

wherein X2 is G or S, X10 is Y or K, X12 is K, E, R, or S, X13 is K or Y, X15 is D or E, X16 is S or G, X17 is E, R, Q, or K, X18 is R, S, or A, X20 is R, K, or Q, X21 is D or E, X23 is V or I, X24 is A or Q, X27 is E or V, X28 is A or K, and X30 is G or R (SEQ ID NO:4),

wherein X2 is S, X15 is D, X16 is S, X20 is R, X21 is D, X23 is V, X24 is A, X28 is A, and X30 is G (SEQ ID NO:5),

wherein the peptide comprising the amino acid sequence HSQGTFTSDKSEYLDSERARDFVAWLEAGG (SEQ ID NO: 19) for use in treating a disease or condition caused or characterized by excess body weight in a subject, wherein an effective amount of the peptide is to be administered to the subject.

2. An isolated peptide comprising the amino acid sequence:

HX2QGTFTSDX10SXl2X13LX15X16X17X18AX20X21FX23X24WLX27X28GX30;

wherein X2 is G or S, X10 is Y or K, X12 is K, E, R, or S, X13 is K or Y, X15 is D or E, X16 is S or G, X17 is E, R, Q, or K, X18 is R, S, or A, X20 is R, K, or Q, X21 is D or E, X23 is V or I, X24 is A or Q, X27 is E or V, X28 is A or K, and X30 is G or R (SEQ ID NO:4),

wherein X2 is S, X15 is D, X16 is S, X20 is R, X21 is D, X23 is V, X24 is A, X28 is A, and X30 is G (SEQ ID NO:5),

wherein the peptide comprising the amino acid sequence HSQGTFTSDKSEYLDSERARDFVAWLEAGG (SEQ ID NO: 19) for use in treatment of reducing body weight in a subject, wherein an effective amount of the peptide is to be administered to the subject.

3. The peptide for use of claim 2, wherein attached to the lysine at position 10 of the peptide is gammaE-palmitoyl.

4. The use of an isolated peptide comprising the amino acid sequence:

HX2QGTFTSDX10SXl2X13LX15X16X17X18AX20X21FX23X24WLX27X28GX30;

wherein X2 is G or S, X10 is Y or K, X12 is K, E, R, or S, X13 is K or Y, X15 is D or E, X16 is S or G, X17 is E, R, Q, or K, X18 is R, S, or A, X20 is R, K, or Q, X21 is D or E, X23 is V or I, X24 is A or Q, X27 is E or V, X28 is A or K, and X30 is G or R (SEQ ID NO:4),

wherein X2 is S, X15 is D, X16 is S, X20 is R, X21 is D, X23 is V, X24 is A, X28 is A, and X30 is G (SEQ ID NO:5),

wherein the peptide comprising the amino acid sequence HSQGTFTSDKSEYLDSERARDFVAWLEAGG (SEQ ID NO: 19) in the manufacture of a medicament for treating a disease or condition caused or characterized by excess body weight in a subject, wherein an effective amount of the medicament is to be administered to the subject.

5. The use of claim 4, wherein the disease or condition is obesity.

6. The use of claim 4, wherein the disease or condition is type 2 diabetes.

7. The use of an isolated peptide comprising the amino acid sequence:

HX2QGTFTSDX10SXl2X13LX15X16X17X18AX20X21FX23X24WLX27X28GX30;

wherein X2 is G or S, X10 is Y or K, X12 is K, E, R, or S, X13 is K or Y, X15 is D or E, X16 is S or G, X17 is E, R, Q, or K, X18 is R, S, or A, X20 is R, K, or Q, X21 is D or E, X23 is V or I, X24 is A or Q, X27 is E or V, X28 is A or K, and X30 is G or R (SEQ ID NO:4),

wherein X2 is S, X15 is D, X16 is S, X20 is R, X21 is D, X23 is V, X24 is A, X28 is A, and X30 is G (SEQ ID NO:5),

wherein the peptide comprising the amino acid sequence HSQGTFTSDKSEYLDSERARDFVAWLEAGG (SEQ ID NO: 19) 9in the manufacture of a medicament for a treatment to reduce body weight in a subject, wherein an effective amount of the medicament is to be administered to the subject.

8. The use of claim 7, wherein attached to the lysine at position 10 of the peptide is a gammaE-palmitoyl.