CLAIMS

1. A peptidic compound having the formula (I):

4-thiazolylalanine-X2-X3-Gly-Thr-Phe-X7-Ser-Asp-X10-Ser-X12-X13-X14-X15-X16-X17-X18-Ala-X20-X21-Phe-Ile-Glu-Trp-Leu-Leu-X28-X29-Gly-Pro-X32-Ser-Gly-Ala-Pro-Pro-Pro-Ser-X40-R^1

(I)

wherein

X2 represents an amino acid selected from Ser and d-Ser,

X3 represents an amino acid selected from Gln and His,

X7 represents an amino acid selected from Thr and Aib,

X10 represents an amino acid residue selected from Tyr, Leu, Val, Ile, Phe, Phenylglycine, Thr, 2-Fluorophenylalanine, Cyclohexylglycine and tert-Leucine

X12 represents an amino acid selected from Lys, Arg and Cys(VS-DO3A),

X13 represents an amino acid selected from Gln, Tyr and Cys(VS-DO3A),

X14 represents an amino acid residue selected from Leu, Nle and Cys(VS-DO3A),

X15 represents an amino acid selected from Glu and Asp,

X16 represents an amino acid selected from Ser, Glu, Aib and Cys(VS-DO3A),

X17 represents an amino acid selected from Arg, Gln, Lys, Ala and Cys(VS-DO3A),

X18 represents an amino acid selected from Arg, Lys and Ala,

X20 represents an amino acid selected from Gln, Glu, Aib, Lys and Cys(VS-DO3A),

If X16 is Glu and X20 is Lys, the sidechains of X16 and X20 may form a cyclic ring via a lactam,

X21 represents an amino acid residue selected from Asp and Glu,

X28 represents an amino acid selected from Ala and β-Ala,

X29 represents an amino acid residue selected from Gly and Thr,
X32 represents an amino acid selected from Glu and Ser,
X40 represents an amino acid selected from Cys(VS-DO3A), Cys(VS-NO2A), Cys(mal-DOTA), Cys(mal-NOTA), Cys(mal-NODAGA), Lys(DOTA), Lys(NOTA), Lys(PEG-DOTA) and Lys(VS-DO3A), or
X40 may be absent if one of the amino acids X12, X13, X14, X16, X17 or X20 is Cys(VS-DO3A),
wherein DOTA, NOTA, DO3A, NO2A or NODAGA may be unloaded or loaded with a metal ion selected from Gd^{3+}, Ga^{3+}, Cu^{2+}, $(Al\text{-}F)^{2+}$, Y^{3+}, Tc^{3+}, In^{3+}, Lu^{3+} and Re^{3+},
R^1 represents OH or NH_2;
or a metal complex or a salt or a solvate thereof,
wherein the compound is a glucagon receptor agonist.

2. A compound of formula (I) according to claim 1, wherein

X2 represents an amino acid selected from Ser and d-Ser,
X3 is Gln,
X7 represents an amino acid selected from Thr and Aib,
X10 represents an amino acid residue selected from Tyr, Leu, Ile,
X12 is Lys,
X13 is Gln,
X14 represents an amino acid residue selected from Leu and Nle,
X15 represents an amino acid selected from Glu and Asp,
X16 represents an amino acid selected from Ser and Glu,
X17 represents an amino acid selected from Arg and Gln,
X18 is Arg,
X20 represents an amino acid selected from Gln and Lys,
If X16 is Glu and X20 is Lys, the sidechains of X16 and X20 may form a cyclic ring via a lactam,
X21 represents an amino acid residue selected from Asp and Glu,

X28 is Ala,
X29 represents an amino acid residue selected from Gly and Thr,
X32 is Glu,
X40 is Cys(VS-DO3A),
wherein DO3A, may be unloaded or loaded with a metal ion selected from Gd^{3+}, Ga^{3+}, Cu^{2+}, $(Al\text{-}F)^{2+}$, Y^{3+}, Tc^{3+}, In^{3+}, Lu^{3+} and Re^{3+},
R^1 represents OH or NH_2;
or a metal complex or a salt or a solvate thereof.

3. A compound of formula (I) according to claim 1, selected from the compounds of SEQ ID NO: 3 - 90 as well as a metal complex, salts or solvates thereof.

4. A compound of formula (I) according to any one of claims 1 to 3, selected from the compounds of SEQ ID NO: 6, 8, 13, 14, 35, 36, 49, 50, 60, 61, 79, 80, 85 and 86 as well as a metal complex, salts or solvates thereof.

5. A compound of formula (I) according to any one of claims 1 to 4, wherein DOTA, NOTA, DO3A, NO2A or NODAGA is loaded with a metal ion Ga^{3+}.

6. A compound of formula (I) according to any one of claims 1 to 4, wherein DOTA, NOTA, DO3A, NO2A or NODAGA is loaded with a metal ion Gd^{3+}.

7. A compound of formula (I) according to any one of claims 1 to 4, wherein DOTA, NOTA, DO3A, NO2A or NODAGA is loaded with a metal radionucleotide ion $(Cu\text{-}64)^{2+}$, $(Ga\text{-}68)^{3+}$, $(Al\text{-}F\text{-}18)^{2+}$, $(Y\text{-}86)^{3+}$.

8. A compound of formula (I) according to any one of claims 1 to 4, wherein DOTA, NOTA, DO3A, NO2A or NODAGA is loaded with a metal radionucleotide ion $(Ga\text{-}67)^{3+}$, $(Tc\text{-}99m)^{3+}$, $(In\text{-}111)^{3+}$.

9. A compound of formula (I) according to any one of claims 1 to 4, wherein DOTA, NOTA, DO3A, NO2A or NODAGA is loaded with a metal radionucleotide ion selected from $(Cu\text{-}67)^{2+}$, $(Y\text{-}90)^{3+}$, $(In\text{-}111)^{3+}$, $(Lu\text{-}177)^{3+}$, $(Re\text{-}186)^{3+}$ and $(Re\text{-}188)^{3+}$.

10. A pharmaceutical composition comprising at least one compound according to any one of claims 1 – 9 or a physiologically acceptable salt or solvate of any of them.

11. The compound for use according to claim 10 which is present as an active agent in a pharmaceutical composition together with at least one pharmaceutically acceptable carrier.

12. A compound according to any one of claims 1 – 9 for visualization of the glucagon receptor in living subjects and relevant tissues.

13. A compound of any one of claims 1 - 9 for use in medicine, particularly in human medicine.

14. A compound according to claim 6 for visualization of the glucagon receptor in living subjects and relevant tissues by MRI.

15. A compound according to claim 7 for visualization of the glucagon receptor in living subjects and relevant tissues by PET.

16. A compound according to claim 8 for visualization of the glucagon receptor in living subjects and relevant tissues by SPECT.

17. A compound according to claim 9 for use in radiotherapy.

18. The compound for use according to any one of claims 1 to 9 for treating hypoglycemia, increasing blood glucose levels, or as adjunctive therapy

with insulin.

19. Use of at least one compound of formula (I) according to any one of claims 1 to 9 in the manufacture of a medicament for treating hypoglycemia in a patient.

20. The use according to claim 19, wherein the medicament is to be administered parenterally.