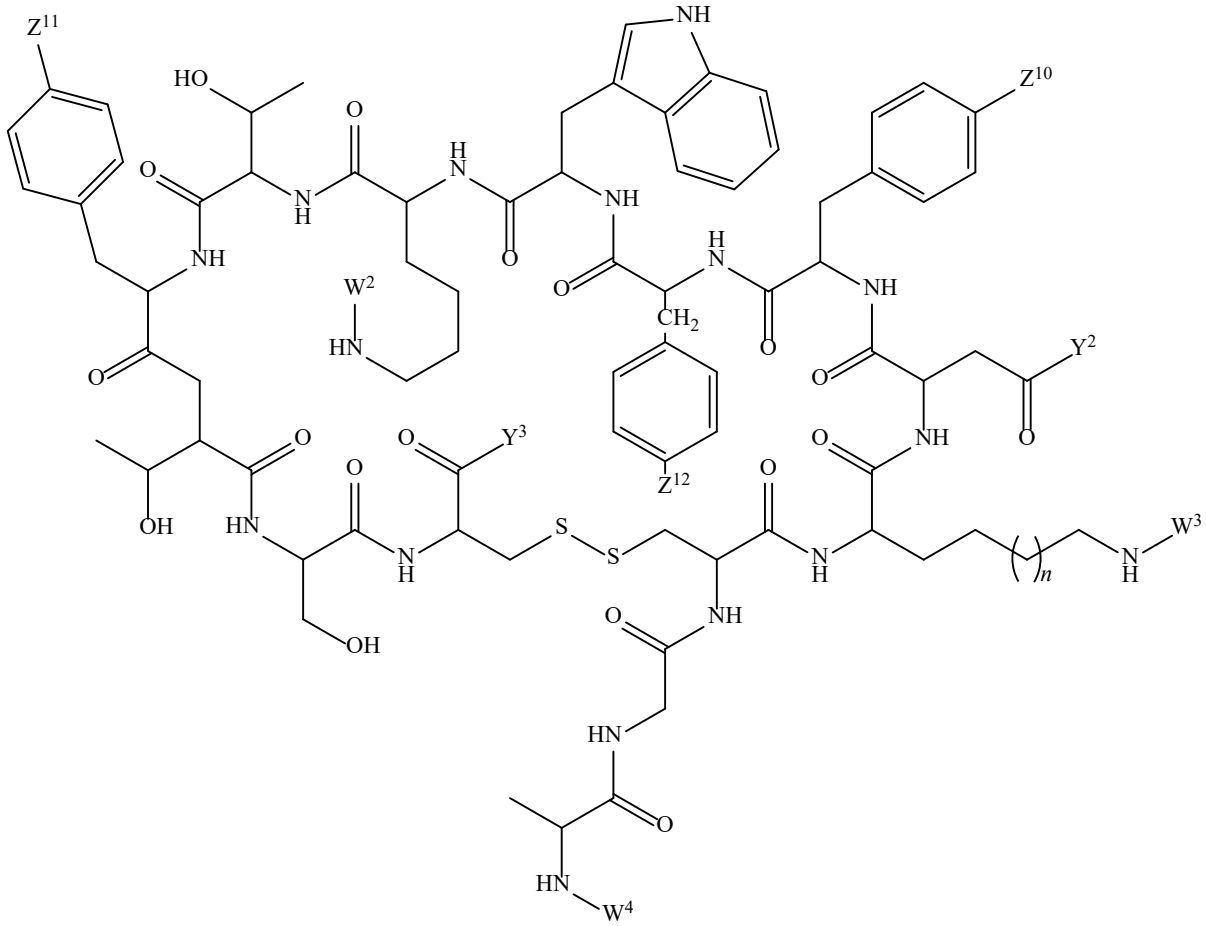
What is claimed is:

1. A compound that is a ^{18}F-labeled somatostatin receptor agonist according to Formula I

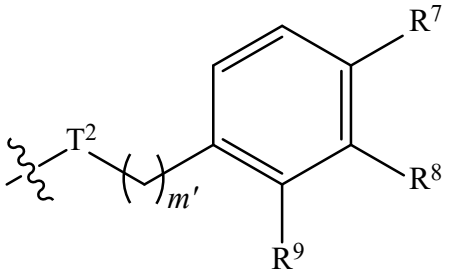


(I)

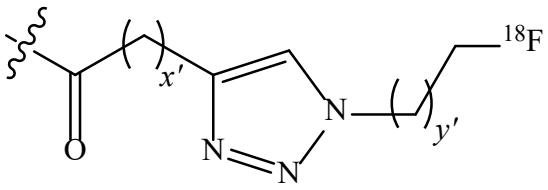
or a pharmaceutically acceptable salt and/or solvate thereof, wherein

Z^{10} and Z^{11} are each independently H or OH; and Z^{12} is H;

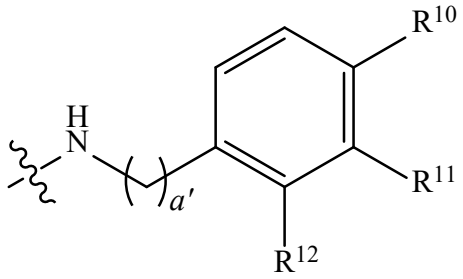
one of W^2, W^3, and W^4 is



or

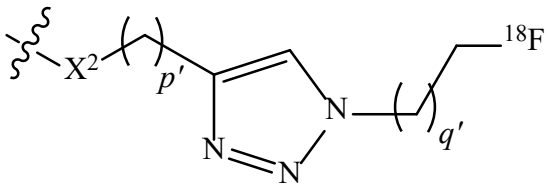


or one of Y^2 and Y^3 is



and the remaining W^2, W^3, W^4 are each independently H and the remaining Y^2 and Y^3 is OH or NH_2;

wherein T^2 is –C(O)– or –C(O)NH–, one of R^7, R^8, and R^9 and one of R^{10}, R^{11}, and R^{12} is



and the remaining two of R^7, R^8, and R^9 are each H and the remaining two of R^{10}, R^{11}, and R^{12} are each H;

X^2 is absent, O, S, or NH;

m' and *a'* are each independently 0, 1, 2, or 3;

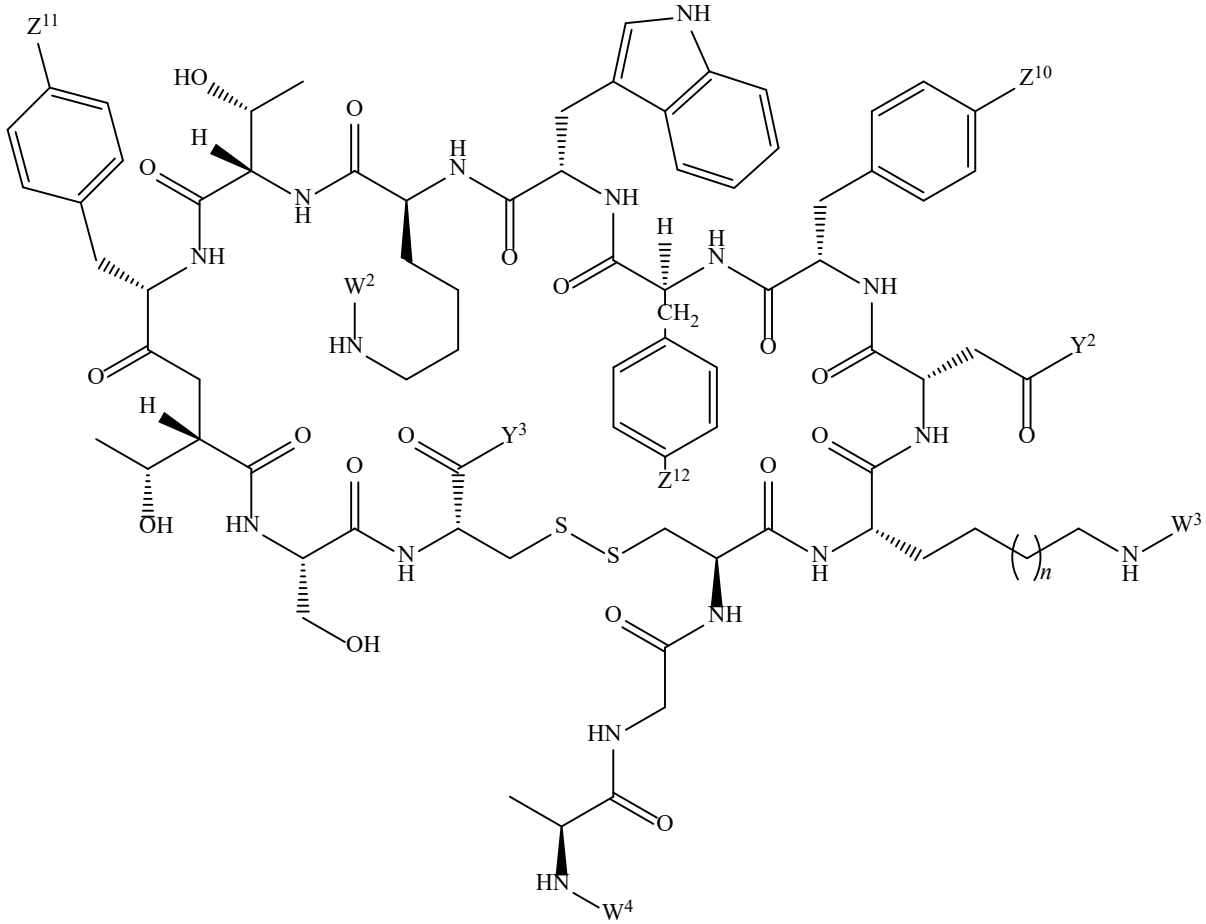
n is 0 or 1;

p' is 0, 1, 2, or 3, provided that when *p'* is 0 then X^2 is absent;

q' is 1 or 2; *x'* is 0, 1, 2, or 3; and

y' is 1 or 2.

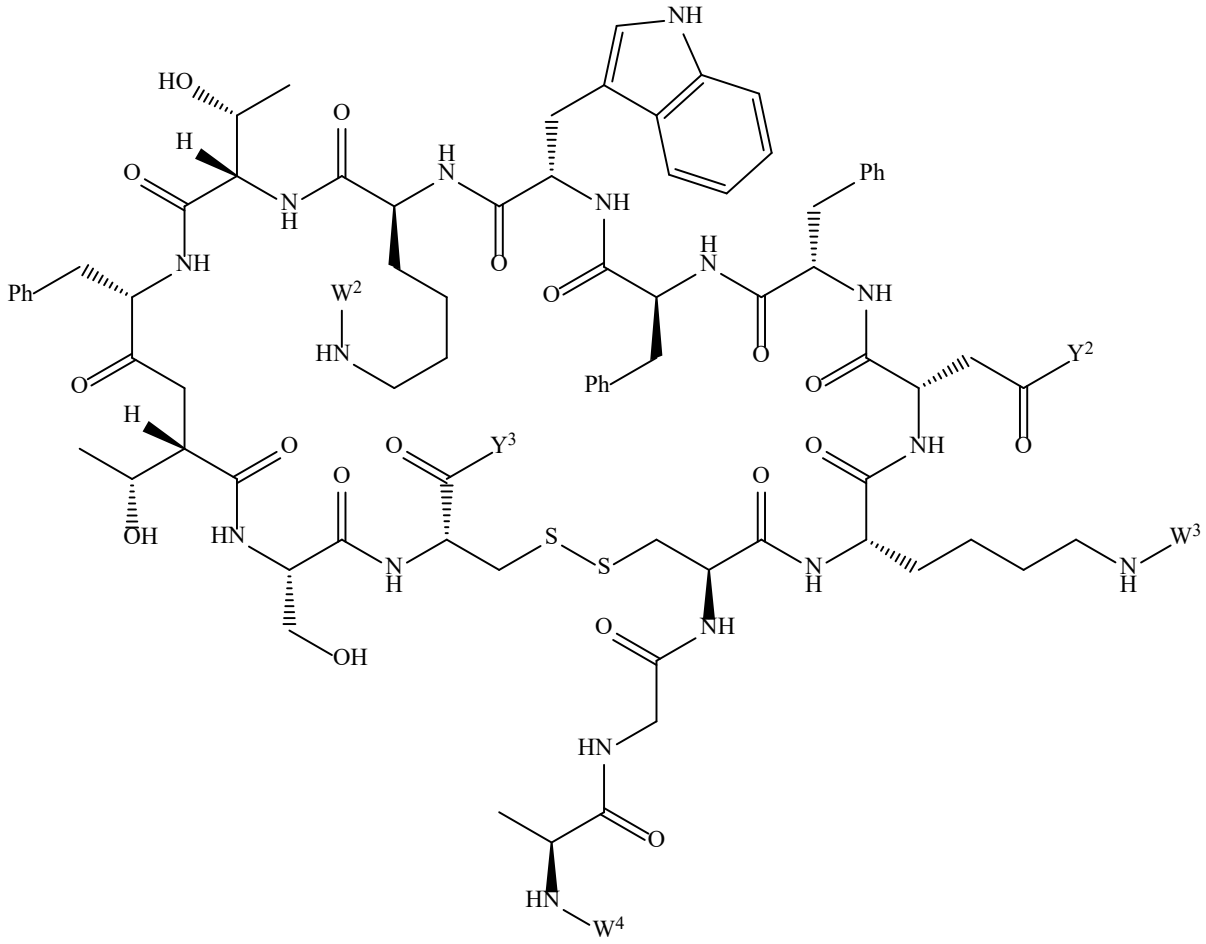
2. The compound of claim 1, wherein the compound is of Formula IA



(IA)

or a pharmaceutically acceptable salt and/or solvate thereof.

3. The compound of claim 1, wherein the compound is of Formula IB



(IB)

or a pharmaceutically acceptable salt and/or solvate thereof.

4. A compound of any one of claims 1-3, or a pharmaceutically acceptable salt and/or solvate thereof, for use in therapy.

5. Use of a compound of any one of claims 1-3, or a pharmaceutically acceptable salt and/or solvate thereof, in the manufacture of a medicament for imaging disorders associated with a mammalian tissue, wherein the compound of any one of claims 1-3, or a

pharmaceutically acceptable salt and/or solvate thereof, is to be administered to a subject.

6. The use of claim 5, wherein the imaging of the disorders associated with the mammalian tissue further comprises

subsequent to the administering, detecting one or more of positron emission, gamma rays from positron emission and annihilation, and Cerenkov radiation due to positron emission.

7. The use of claim 5 or claim 6, wherein the compound of any one of claims 1-3, or a pharmaceutically acceptable salt and/or solvate thereof, is to be administered to the subject in an effective amount of the compound.

8. The use of any one of claims 5-7, wherein the subject is suspected of suffering from a mammalian tissue expressing a somatostatin receptor, a bombesin receptor, seprase, or a combination of any two or more thereof, when the compound of any one of claims 1-3 is administered to the subject.

9. The use of any one of claims 5-8, wherein the mammalian tissue comprises one or more of a growth hormone producing tumor, a neuroendocrine tumor, a pituitary tumor, a vasoactive intestinal peptide-secreting tumor, a small cell carcinoma of the lung, gastric cancer tissue, pancreatic cancer tissue, a neuroblastoma, and a metastatic cancer.

10. The use of any one of claims 5-9, wherein the compound is to be administered by parenteral administration.