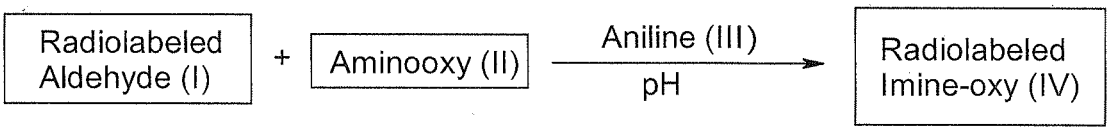
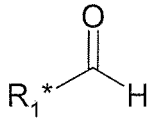
What is claimed is:

1. Use of aniline as a radiostabilizer in a method comprising the step of reacting a radiolabeled aldehyde (I) with an aminooxy (II) in the presence of aniline (III) to form imine-oxy (IV):



wherein said aniline (III) is used in combination with para-amino benzoic acid or with a radiostabilizer.

2. The use of Claim 1, wherein said radiolabeled aldehyde (I) is a compound of formula (VIII):



(VIII)

wherein R_1* is a radiolabeled organic or biological moiety.

3. The use of Claim 2, wherein said radiolabeled organic moiety is alkyl, alkenyl, alkynyl, aryl, cycloalkyl, heterocyclyl, heteroaryl, or cycloalkyl and wherein said radiolabeled biological moiety is an amino acid, peptide, or vector.

4. The use of any one of Claims 1-3, wherein the radiolabel of R_1* is a radioisotope suitable for PET or SPECT imaging.

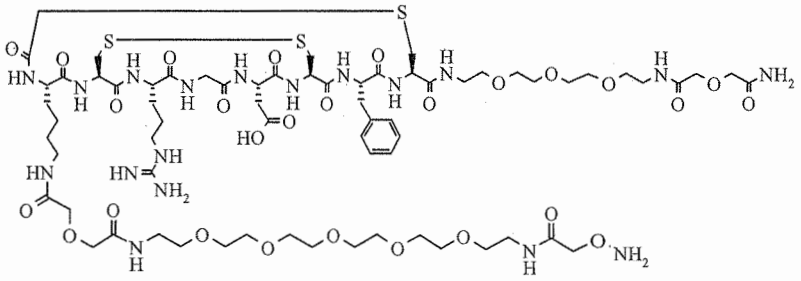
5. The use of Claim 1, wherein said radiolabeled aldehyde is [18F]parabenzaldehyde.

6. The use of any one of Claims 1-5, wherein said aminooxy (II) is a compound of formula (IX):

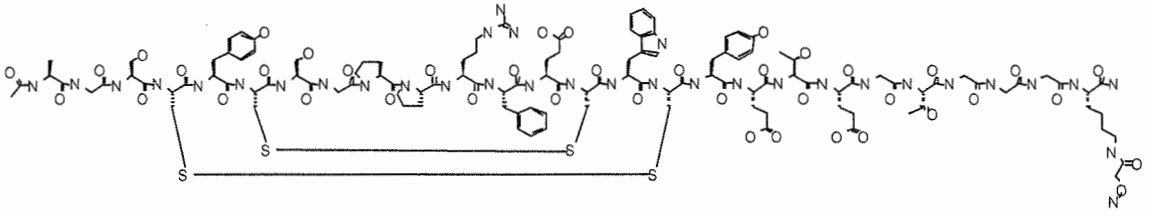
$$R2\text{-}O\text{-}NH_2 \qquad (IX)$$

wherein R2 can be any organic or biological moiety.

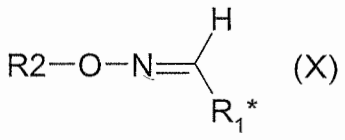
7. The use of Claim 6, wherein said aminooxy (II) is



or

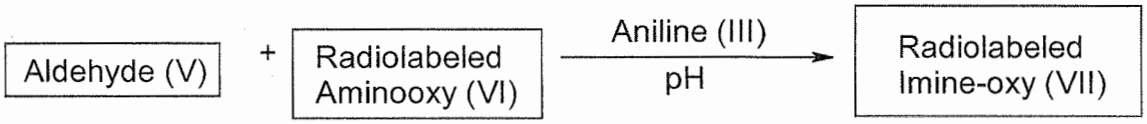


8. The use of any one of Claims 1-7, wherein said radiolabeled imine-oxy is a compound of formula (X):



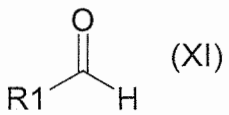
(X)

9. Use of aniline as a radiostabilizer in a method comprising the step of reacting a aldehyde (V) with a radiolabeled aminooxy (VI) in the presence of aniline (III) to form imine-oxy (VII):



wherein said aniline (III) is used in combination with para-amino benzoic acid or with a radiostabilizer.

10. The use of Claim 9, wherein said aldehyde is a compound of formula (XI):



(XI)

wherein R1 can be any organic or biological moiety.

11. The use of Claim 10, wherein said organic moiety is alkyl, alkenyl, alkynyl, aryl, cycloalkyl, heterocyclyl, heteroaryl, or cycloalkyl and wherein said biological moiety is an amino acid, peptide, or vector.

12. The use of any one of Claims 9-11, wherein said aldehyde is benzaldehyde.

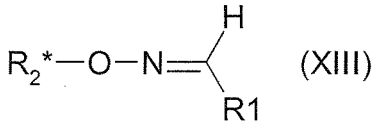
13. The use of any one of Claims 9-12, wherein said radiolabeled aminooxy is a compound of formula (XII):

$$R_2^*\text{-O-NH}_2 \qquad \text{(XII)}$$

wherein R_2* is a radiolabeled organic or biological moiety.

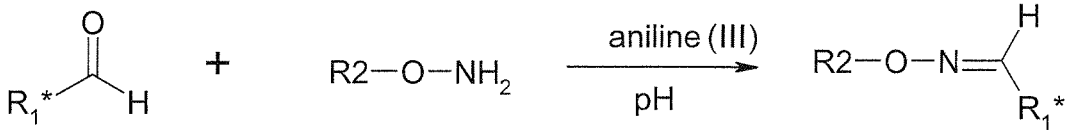
14. The use of Claim 13, wherein the radiolabel of R_2* is a radioisotope suitable for PET or SPECT imaging.

15. The use of any one of Claims 9-14, wherein said radiolabeled imine-oxy is a compound of formula (XIII):



(XIII)

16. Use of aniline as a radiostabilizer in a method comprising the step of reacting a radiolabeled aldehyde (VIII) with an aminooxy (IX) in the presence of aniline (III) to form imine-oxy (X):



(VIII) (IX) (X)

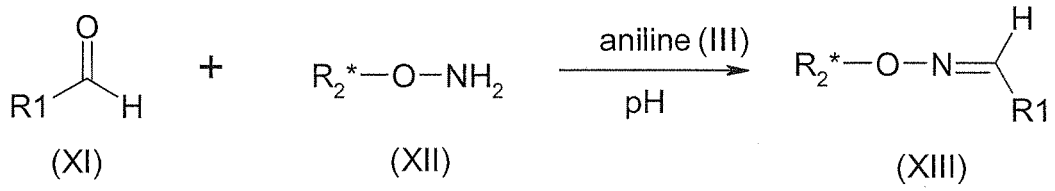
wherein:

R_1* is organic or biological moiety labeled with at least one radioisotope or radionuclide; and

R_2 is an organic or biological moiety; and

wherein said aniline (III) is used in combination with para-amino benzoic acid or with a radiostabilizer.

17. The use of claim 9, wherein said aldehyde (V) is aldehyde (XI) and said radiolabeled aminooxy (VI) is radiolabeled aminooxy (XII) and said radiolabeled imine-oxy (VII) is imine-oxy (XIII):



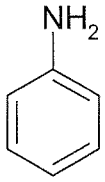
(XI) (XII) (XIII)

wherein:

R_2* is an organic or biological moiety labeled with at least one radioisotope or radionuclide; and

R_1 is an organic or biological moiety.

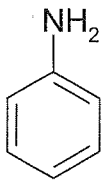
18. The use of any one of Claims 1-17, wherein said aniline is of the following formula:



,

a salt or derivative thereof or a mixture thereof.

19. The use of Claim 18, wherein said aniline is:



HCl

.

~~20. The use of Claim 18, wherein said aniline is used in combination with para-amino benzoic acid or with a radiostabilizer.~~