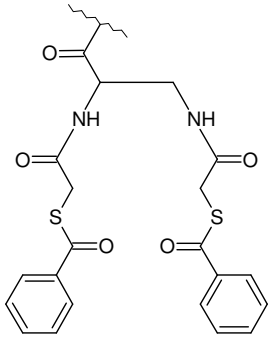
Claims:

1. A kit comprising a lyophilized composition including glucoheptonate, a buffer, and a compound having the structure His-Ser-Asp-Gly-Ile-Phe-Thr-Asp-Ser-Tyr-Ser-Arg-Tyr-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Ala-Ala-Val-Leu-γAba-Lys(R) (SEQ ID NO:1), wherein R is a chelator coupled to the γ-amino group of the lysine residue.

2. The kit of claim 1, wherein the kit is at 4°C or less.

3. The kit of claim 1, wherein the chelator comprises



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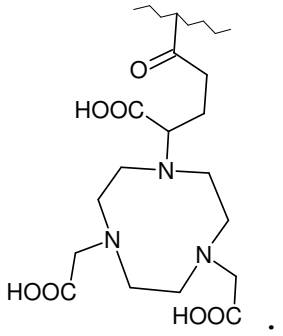

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4. The kit of claim 1, wherein the kit comprises at least one of the following:

(i) 50 µg to 500 µg of glucoheptonate;

(ii) glycine buffer as the buffer;

(iii) $SnCl_2 \cdot 2H_2O$ in the lyophilized composition;

(iv) a radioprotectant;

(v) antimicrobial preservative;

(vi) pH-adjusting agent;

(vii) the compound adhered, affixed or immobilized to

a substrate; or

(viii) 20 µg to 250 µg of the compound.

5. The kit of claim 1, wherein the kit comprises a radionuclide separate from the lyophilized composition.

6. The kit of claim 5, wherein the radionuclide is ^{64}Cu, ^{68}Ga, ^{89}Zr or ^{99m}Tc.

7. The kit of claim 1, further comprising instructions for one or more of:

(a) reconstituting the lyophilized composition;

(b) radiolabeling the compound with a radionuclide;

(c) administering the composition to a subject; or

(d) interpreting results of using the kit.

8. The kit of claim 7, further comprising photos of labeling tissues with the compound, the tissues being with and without cancer.

9. A method for preparing a kit for tumor imaging comprising

(a) combining, in a container, glucoheptonate, buffer, and a compound having the structure His-Ser-Asp-Gly-Ile-Phe-Thr-Asp-Ser-Tyr-Ser-Arg-Tyr-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Ala-Ala-Val-Leu-γAba-Lys(R) (SEQ ID NO:1), wherein R is a chelator coupled to the γ-amino group of the lysine residue;

(b) freezing the combination of (a),

(c) lyophilizing the frozen combination,

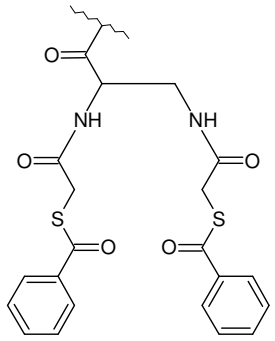
(d) introducing sterile nitrogen gas into the

container, and

(e) sealing the container.

10. The method of claim 9, comprising storing the container at 4°C or less.

11. The method of claim 9, wherein the chelator comprises



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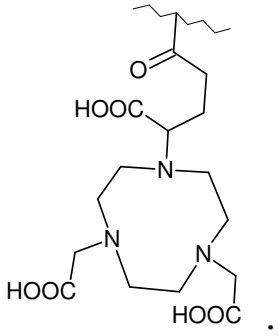

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12. The method of claim 9, wherein the combination of (a) comprises at least one of the following:

(i) 50 µg to 500 µg of glucoheptonate;

(ii) glycine buffer as the buffer;

(iii) $SnCl_2 \cdot 2H_2O$;

(iv) a radioprotectant;

(v) antimicrobial preservative;

(vi) pH-adjusting agent;

(vii) the compound adhered, affixed or immobilized to a substrate; or

(viii) 20 µg to 250 µg of the compound.

13. The method of claim 9, further comprising (f) providing a radionuclide separate from the compound.

14. A method of labeling a compound of SEQ ID NO:1 comprising:

(a) providing the kit of claim 1;

(b) providing a radionuclide in solution;

(c) introducing the radionuclide to the compound;

(d) shaking the radionuclide and compound for dissolution; and

(e) incubating the radionuclide and compound at room temperature.

15. A kit comprising a compound having the structure His-Ser-Asp-Gly-Ile-Phe-Thr-Asp-Ser-Tyr-Ser-Arg-Tyr-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Ala-Ala-Val-Leu-γAba-Lys(R) (SEQ ID NO:1), wherein R is a chelator coupled to the γ-amino group of the lysine residue wherein said compound is adhered, affixed or immobilized on a substrate.