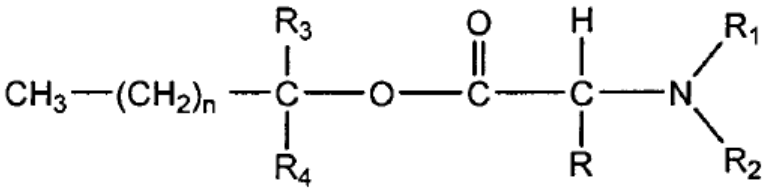
Claims

1. An injectable composition which comprises an aqueous solution comprising a therapeutic peptide, an alkyl N,N-disubstituted amino alkanoate or a pharmaceutically acceptable salt thereof, and a physiologically acceptable carrier, wherein the therapeutic peptide is selected from insulin, a glucagon-like peptide 1, liraglutide, rituximab, raptiva, a human granulocyte colony-stimulating factor (G-CSF), and a recombinant granulocyte macrophage colony-stimulating factor (GM-CSF).

2. The composition in accordance with claim 1 wherein the therapeutic peptide is insulin and the alkyl N,N-disubstituted amino alkanoate is ~~represented by the~~ of formula



wherein n is an integer having a value in the range of about 4 to about 18; R is a member of the group consisting of hydrogen, C_1 to C_7 alkyl, benzyl and phenyl; R_1 and R_2 are members of the group consisting of hydrogen and C_1 to C_7 alkyl; and R_3 and R_4 are members of the group consisting of hydrogen, methyl and ethyl.

3. The composition in accordance with claim 1 wherein the therapeutic peptide is insulin and the alkyl N,N-disubstituted amino alkanoate is dodecyl 2-(N,N-dimethylamino) propionate.

4. The composition in accordance with claim 1 wherein the therapeutic peptide is insulin and the salt of the alkyl N,N-disubstituted amino acetate is dodecyl 2-(N,N-dimethylamino) propionate hydrochloride.

5. The composition in accordance with claim 1 wherein the therapeutic peptide is ~~a monoclonal antibody~~ rituximab or Raptiva.

6. The composition in accordance with claim 5 wherein the ~~monoclonal antibody~~ therapeutic peptide is Rituximab.

7. The composition in accordance with claim 5 wherein the ~~monoclonal antibody~~ therapeutic peptide is Raptiva.

8. The composition in accordance with claim 1 wherein the therapeutic peptide is a ~~cytokine~~ human granulocyte colony-stimulating factor (G-CSF) and the alkyl N,N-disubstituted amino acetate is dodecyl 2-(N,N-dimethylamino) propionate.

9. The composition in accordance with claim 1 wherein the therapeutic peptide is a ~~cytokine~~ human granulocyte colony-stimulating factor (G-CSF) and the salt of the alkyl N,N-disubstituted amino acetate is dodecyl 2-(N,N-dimethylamino) propionate hydrochloride.

~~10. The composition in accordance with claim 9 wherein the cytokine is a human granulocyte colony-stimulating factor (G-CSF).~~

11. The composition in accordance with claim ~~9~~1 wherein the ~~cytokine~~ therapeutic peptide is a recombinant granulocyte macrophage colony-stimulating factor (GM-CSF) ~~recombinant~~ and the salt of the alkyl N,N-disubstituted amino acetate is dodecyl 2-(N,N-dimethylamino) propionate hydrochloride.

12. The composition in accordance with claim 1 wherein the therapeutic peptide is ~~selected from the group consisting of~~ a glucagon-like peptide (GLP-1) ~~and analogs thereof~~ and the alkyl N,N-disubstituted amino acetate is dodecyl 2-(N,N-dimethylamino) propionate.

13. The composition in accordance with claim ~~12~~1 wherein the therapeutic peptide is a glucagon-like peptide (GLP-1) and wherein the salt of the alkyl N, N-disubstituted amino acetate is dodecyl 2-(N,N-dimethylamino) propionate hydrochloride.

14. The composition in accordance with claim ~~13~~1 wherein the therapeutic peptide is liraglutide.

15. The composition in accordance with claim 1 wherein the therapeutic peptide is a recombinant granulocyte macrophage colony-stimulating factor (GM-CSF) and the alkyl N,N-disubstituted amino acetate is dodecyl 2-(N,N-dimethylamino) propionate.

16. A manufacture of a medicament comprising a therapeutically effective amount of the composition of claim 1.

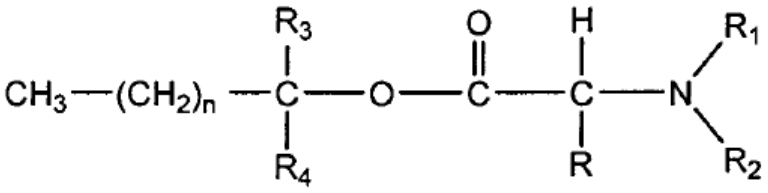
17. The injectable composition of claim 1 for use in therapy.

18. The injectable composition of claim 1 for use as a medicament.

Claims

1. An injectable composition which comprises an aqueous solution comprising a therapeutic peptide, an alkyl N,N-disubstituted amino alkanoate or a pharmaceutically acceptable salt thereof, and a physiologically acceptable carrier, wherein the therapeutic peptide is selected from insulin, a glucagon-like peptide 1, liraglutide, rituximab, raptiva, a human granulocyte colony-stimulating factor (G-CSF), and a recombinant granulocyte macrophage colony-stimulating factor (GM-CSF).

2. The composition in accordance with claim 1 wherein the therapeutic peptide is insulin and the alkyl N,N-disubstituted amino alkanoate is of formula



wherein n is an integer having a value in the range of about 4 to about 18; R is a member of the group consisting of hydrogen, C_1 to C_7 alkyl, benzyl and phenyl; R_1 and R_2 are members of the group consisting of hydrogen and C_1 to C_7 alkyl; and R_3 and R_4 are members of the group consisting of hydrogen, methyl and ethyl.

3. The composition in accordance with claim 1 wherein the therapeutic peptide is insulin and the alkyl N,N-disubstituted amino alkanoate is dodecyl 2-(N,N-dimethylamino) propionate.

4. The composition in accordance with claim 1 wherein the therapeutic peptide is insulin and the salt of the alkyl N,N-disubstituted amino alkanoate is dodecyl 2-(N,N-dimethylamino) propionate hydrochloride.

5. The composition in accordance with claim 1 wherein the therapeutic peptide is rituximab or Raptiva.

6. The composition in accordance with claim 5 wherein the therapeutic peptide is Rituximab.

7. The composition in accordance with claim 5 wherein the therapeutic peptide is Raptiva.

8. The composition in accordance with claim 1 wherein the therapeutic peptide is a human granulocyte colony-stimulating factor (G-CSF) and the alkyl N,N-disubstituted amino alkanoate is dodecyl 2-(N,N-dimethylamino) propionate.

9. The composition in accordance with claim 1 wherein the therapeutic peptide is a human granulocyte colony-stimulating factor (G-CSF) and the salt of the alkyl N,N-disubstituted amino alkanoate is dodecyl 2-(N,N-dimethylamino) propionate hydrochloride.

10. The composition in accordance with claim 1 wherein the therapeutic peptide is a recombinant granulocyte macrophage colony-stimulating factor (GM-CSF) and the salt of the alkyl N,N-disubstituted amino alkanoate is dodecyl 2-(N,N-dimethylamino) propionate hydrochloride.

11. The composition in accordance with claim 1 wherein the therapeutic peptide is a glucagon-like peptide (GLP-1) and the alkyl N,N-disubstituted amino alkanoate is dodecyl 2-(N,N-dimethylamino) propionate.

12. The composition in accordance with claim 1 wherein the therapeutic peptide is a glucagon-like peptide (GLP-1) and wherein the salt of the alkyl N, N-disubstituted amino alkanoate is dodecyl 2-(N,N-dimethylamino) propionate hydrochloride.

13. The composition in accordance with claim 1 wherein the therapeutic peptide is liraglutide.

14. The composition in accordance with claim 1 wherein the therapeutic peptide is a recombinant granulocyte macrophage colony-stimulating factor (GM-CSF) and the alkyl N,N-disubstituted amino alkanoate is dodecyl 2-(N,N-dimethylamino) propionate.

15. A manufacture of a medicament comprising a therapeutically effective amount of the composition of claim 1.

16. The injectable composition of claim 1 for use in therapy.

17. The injectable composition of claim 1 for use as a medicament.