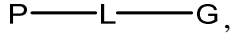
CLAIMS

1. A particle, comprising a molecule represented by the following structural formula:



wherein:

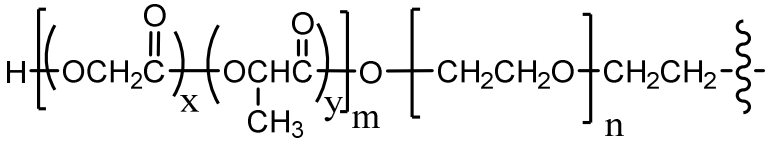
P is a biocompatible polymer scaffold comprising a block copolymer PLGA-PEG;

G is a polysialic acid (PSA) comprising from 5 to 200 repeat units of sialic acid; and

L is a covalent linker,

or a pharmaceutically acceptable salt thereof.

2. The particle of Claim 1, wherein P is represented by the following structural formula:

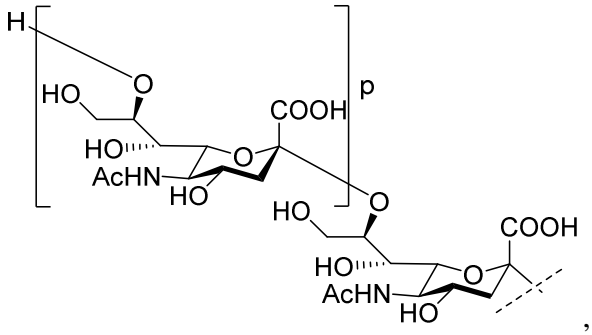


wherein the symbol  represents the point of attachment of the polymer to the linker L, and further wherein:

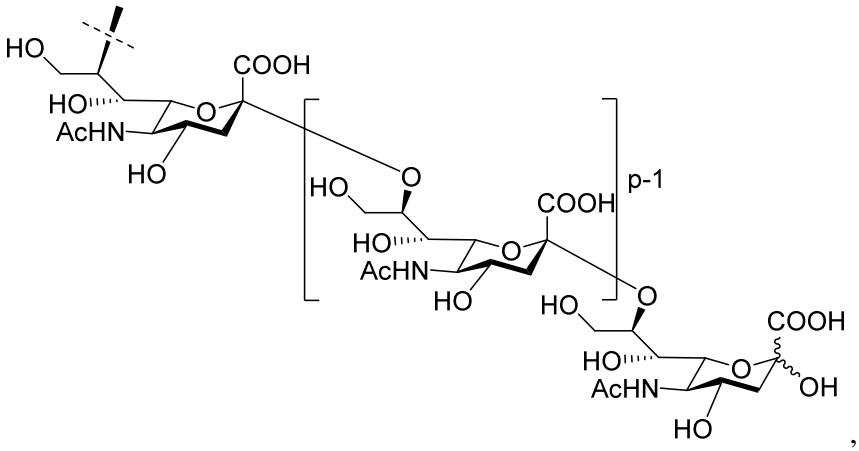
x is an integer from 0 to 20, y is an integer from 0 to 20, m is an integer from 1 to 1000, and n is an integer from 5 to 450, provided that x and y are not simultaneously 0.

3. The particle of Claim 2, wherein x is an integer from 0 to 10, y is an integer from 0 to 10, m is an integer from 1 to 500, n is an integer from 5 to 450.

4. The particle of any one of Claims 1-3, wherein G is represented by any one of the following structural formulas:



,



,

or a pharmaceutically acceptable salt thereof,

wherein the symbol ------ represents the points of attachment of G to the linker L, and further wherein p is an integer from 4 to 198.

5. The particle of Claim 4, wherein the value of p is selected from any one of the following ranges: from 10 to 20, from 20 to 30, from 30 to 40, from 40 to 50, and from 50 to 60.

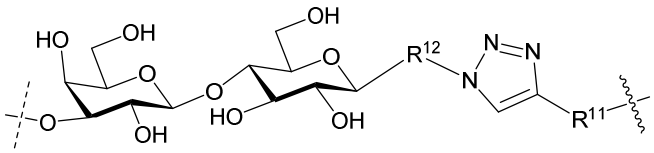
6. The particle of Claim 4, wherein p is from 5 to 25.

7. The particle of Claim 4, wherein p is from 10 to 20.

8. The particle of Claim 4, wherein P is PLGA(10k)-PEG(5k) and p is from 5 to 25.

9. The particle of any one of Claims 1-8, wherein the linker L is represented by any one of the following structural formulas, wherein the symbol ------ represents the point of

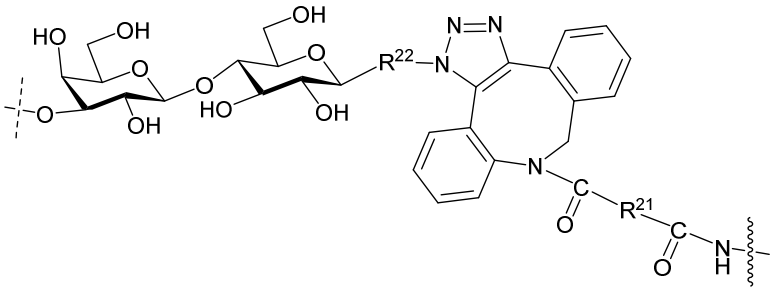
attachment of the linker L to G, and the symbol ∿∿∿ represents the point of attachment of the linker L to P:


(1),

wherein:

R^{11} is –C(O)NH- or –CH_2-NH-C(O)-CH_2-O-; and

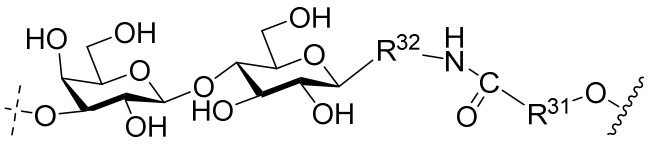
R^{12} is absent or is any one of –O-$(CH_2)_{1\text{-}10}$-, -(O-$CH_2CH_2)_{1\text{-}10}$-, -N(X^{11})-$(CH_2)_{1\text{-}10}$-, -N(X^{12})-O-$(CH_2)_{1\text{-}10}$-, or –NHNH-$(CH_2)_{1\text{-}10}$-, wherein X^{11} is H or acetyl, and X^{12} is H or methyl;


(2),

wherein:

R^{21} is –$(CH_2)_{1\text{-}10}$- or –$(CH_2CH_2\text{-}O)_{1\text{-}10}$-$(CH_2)_{1\text{-}10}$-; and

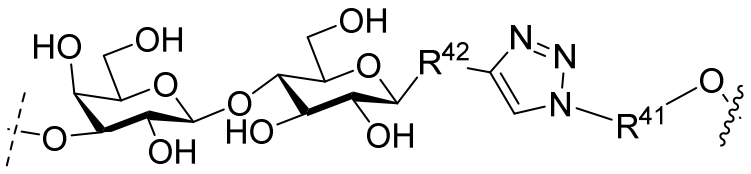
R^{22} is absent or is any one of –O-$(CH_2)_{1\text{-}10}$-, -(O-$CH_2CH_2)_{1\text{-}10}$-, -N(X^{21})-$(CH_2)_{1\text{-}10}$-, -N(X^{22})-O-$(CH_2)_{1\text{-}10}$-, or –NHNH-$(CH_2)_{1\text{-}10}$-, wherein X^{21} is H or acetyl, and X^{22} is H or methyl;


(3),

wherein:

R^{31} is –$(CH_2)_{1\text{-}10}$-; and

R^{32} is absent or is any one of –O-$(CH_2)_{1\text{-}10}$-, -(O-$CH_2CH_2)_{1\text{-}10}$-, -N(X^{31})-$(CH_2)_{1\text{-}10}$-, -N(X^{32})-O-$(CH_2)_{1\text{-}10}$-, or –NHNH-$(CH_2)_{1\text{-}10}$-, wherein X^{31} is H or acetyl, and X^{32} is H or methyl;

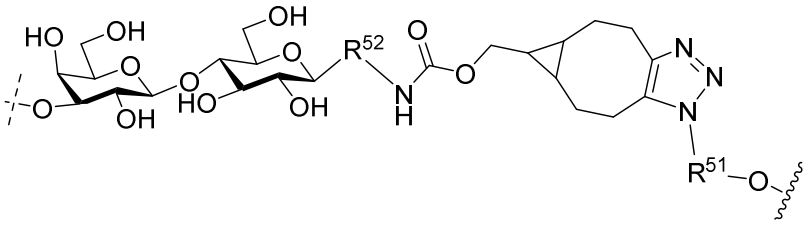


(4),

wherein:

R^{41} is $–(CH_2)_{1\text{-}10}$-; and

R^{42} is absent or is any one of $–O\text{-}(CH_2)_{1\text{-}10}$-, $\text{-}(O\text{-}CH_2CH_2)_{1\text{-}10}$-, $\text{-}N(X^{41})\text{-}(CH_2)_{1\text{-}10}$-, $\text{-}N(X^{42})\text{-}O\text{-}(CH_2)_{1\text{-}10}$-, or $–NHNH\text{-}(CH_2)_{1\text{-}10}$-, wherein X^{41} is H or acetyl, and X^{42} is H or methyl;

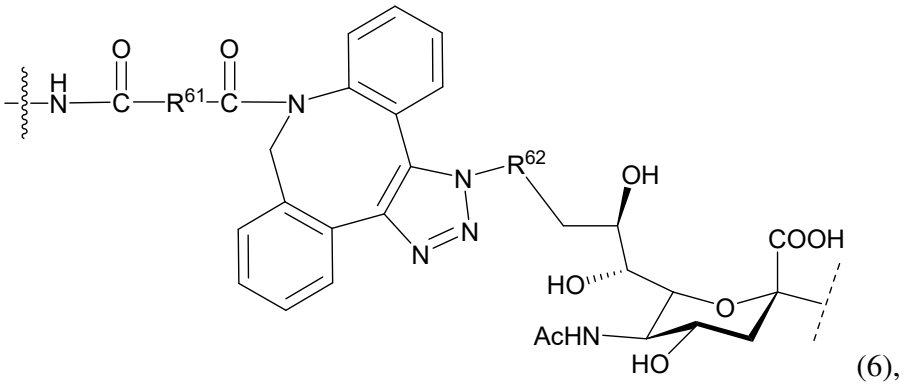


(5),

wherein:

R^{51} is $–(CH_2)_{1\text{-}10}$-; and

R^{52} is absent or is any one of $–O\text{-}(CH_2)_{1\text{-}10}$-, $\text{-}(O\text{-}CH_2CH_2)_{1\text{-}10}$-, $\text{-}N(X^{51})\text{-}(CH_2)_{1\text{-}10}$-, $\text{-}N(X^{52})\text{-}O\text{-}(CH_2)_{1\text{-}10}$-, or $–NHNH\text{-}(CH_2)_{1\text{-}10}$-, wherein X^{51} is H or acetyl, and X^{52} is H or methyl;

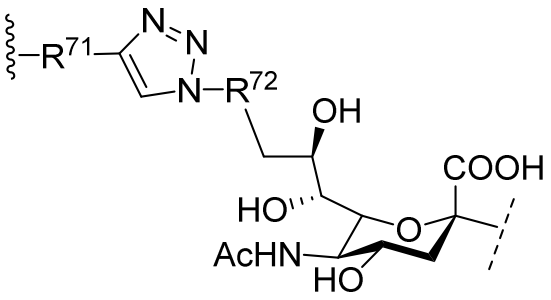


(6),

wherein:

R^{61} is $–(CH_2)_{1\text{-}10}$- or $–(CH_2CH_2\text{-}O)_{1\text{-}10}\text{-}(CH_2)_{1\text{-}10}$-;

R^{62} is absent, or is $–(CH_2)_{1\text{-}10}$- or $–(CH_2)_{1\text{-}10}\text{-}O\text{-}(CH_2)_{1\text{-}10}\text{-}NH$-;

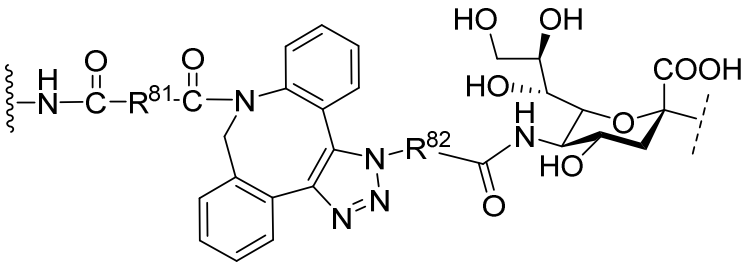


(7),

wherein:

R^{71} is –NHC(O)- or –OCH_2-C(O)NH-CH_2-; and

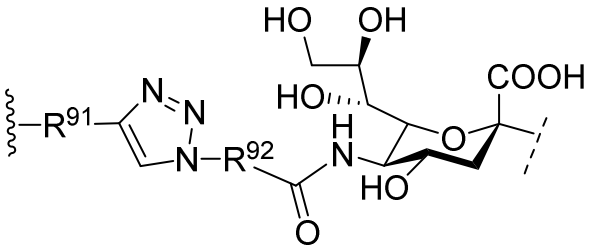
R^{72} is –$(CH_2)_{1\text{-}10}$-O-$(CH_2)_{1\text{-}10}$-NH-;



(8),

wherein:

R^{81} and R^{82}, each independently is –$(CH_2)_{1\text{-}10}$- or –$(CH_2CH_2\text{-}O)_{1\text{-}10}$-$(CH_2)_{1\text{-}10}$-;

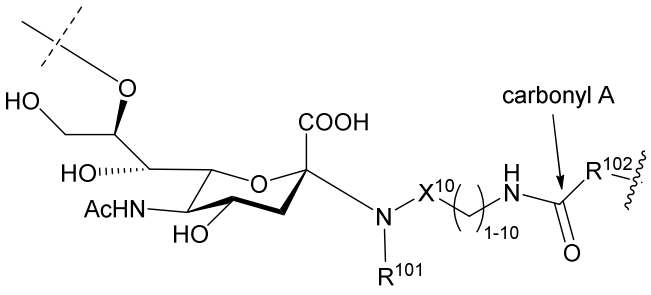


(9),

wherein:

R^{91} is –NHC(O)- or –OCH_2-C(O)NH-CH_2-; and

R^{92} is –$(CH_2)_{1\text{-}10}$- or –$(CH_2CH_2\text{-}O)_{1\text{-}10}$-$(CH_2)_{1\text{-}10}$-;



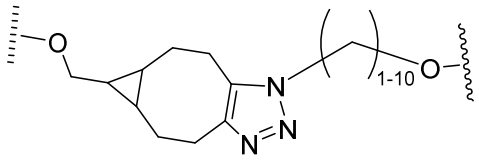
(10),

wherein:

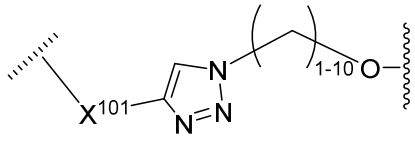
R^{101} is H or methyl;

X^{10} is O or NH; and

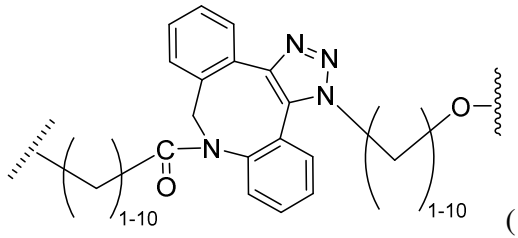
R^{102} is $–CH_2O-$, or a moiety represented by any one of the following structural formulas:



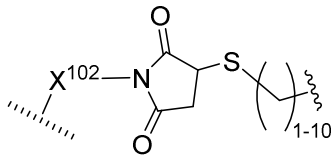
(10-1),



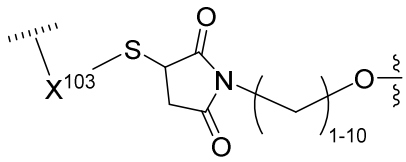
(10-2),



(10-3),

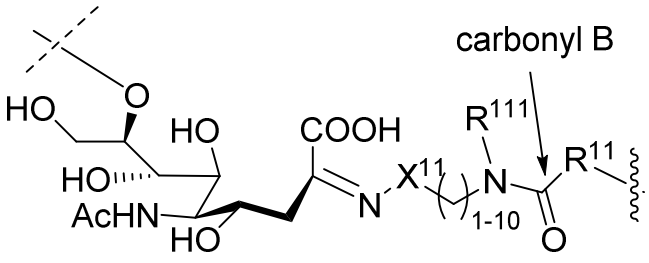


(10-4),

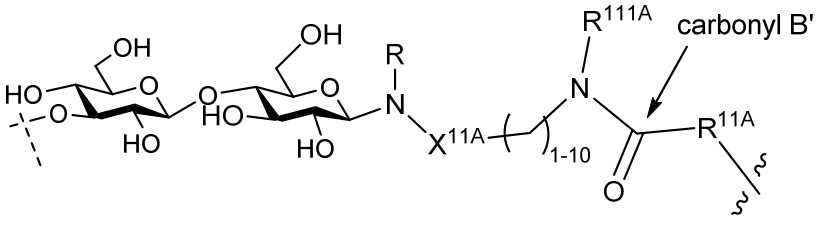


(10-5),

wherein X^{101}, X^{102}, and X^{103}, each independently is $–(CH_2)_{1\text{-}10}-$ or $–CH_2CH_2-(OCH_2CH_2)_{1\text{-}10}$, and wherein the symbol ⋯⋯ represents the point of attachment to the carbonyl A;



(11), or



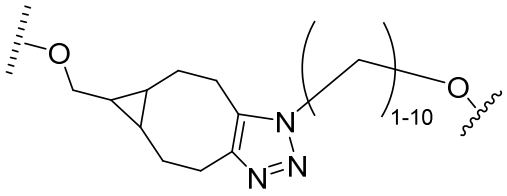
(11A),

wherein:

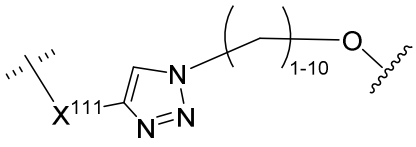
R^{111} and R^{111A}, each independently, is H or a C1-C3 alkyl;

X^{11} and X^{11A}, each independently, is O or NH; and

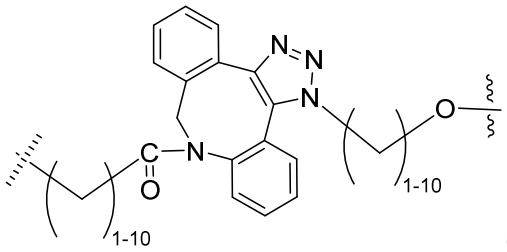
R^{11} and R^{11A}, is independently, is $–CH_2O-$, or a moiety represented by any one of the following structural formulas:



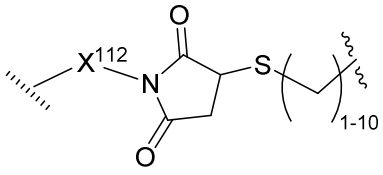
(11-1),



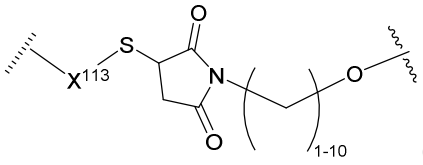
(11-2),



(11-3),

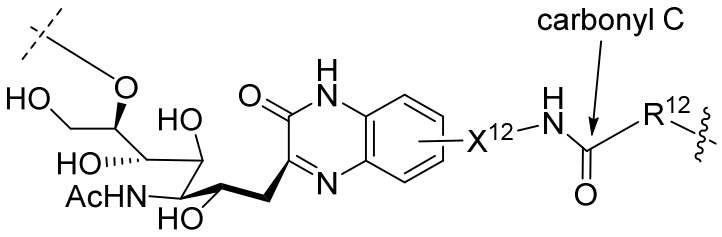


(11-4),



(11-5),

wherein X^{111}, X^{112}, and X^{113}, each independently is $–(CH_2)_{1\text{-}10}$- or $–CH_2CH_2$-$(OCH_2CH_2)_{1\text{-}10}$, and wherein the symbol ''''''''''' represents the point of attachment to the carbonyl B or the carbonyl B';

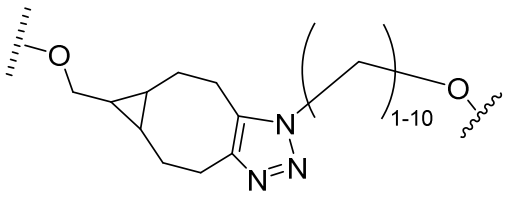


(12),

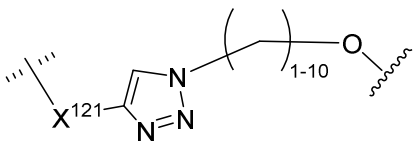
wherein:

X^{12} is -$(CH_2)_{1\text{-}10}$- or $–C(O)$-$(CH_2)_{1\text{-}10}$-; and

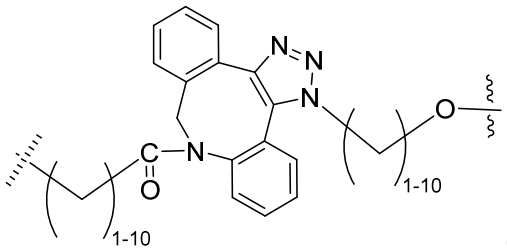
R^{12} is $–CH_2O$-, or a moiety represented by any one of the following structural formulas:



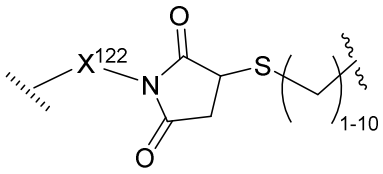
(12-1),



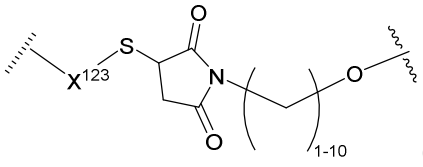
(12-2),



(12-3),

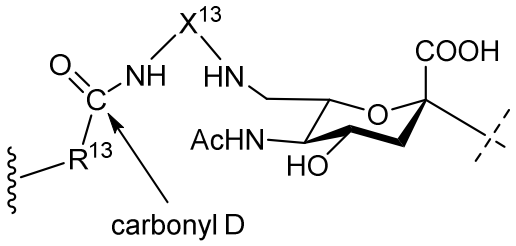


(12-4),



(12-5),

wherein X^{121}, X^{122}, and X^{123}, each independently is $–(CH_2)_{1\text{-}10}$- or $–CH_2CH_2$-$(OCH_2CH_2)_{1\text{-}10}$, and wherein the symbol ''''''''' represents the point of attachment to the carbonyl C; and

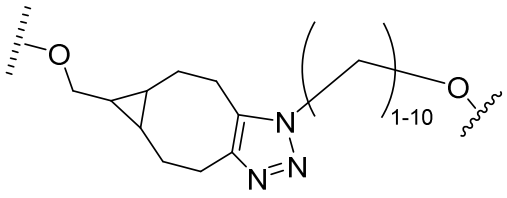


(13),

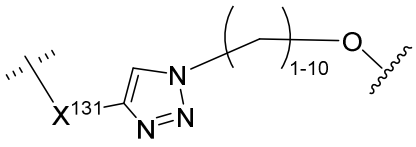
wherein:

X^{13} is –Ph- or $–CH_2$-Ph-CH_2-, wherein Ph is phenyl; and

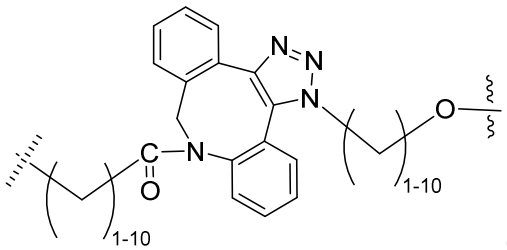
R^{13} is is $–CH_2O$-, or a moiety represented by any one of the following structural formulas:



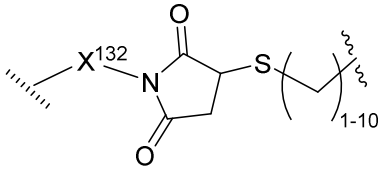
(13-1),



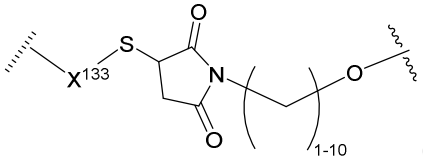
(13-2),



(13-3),

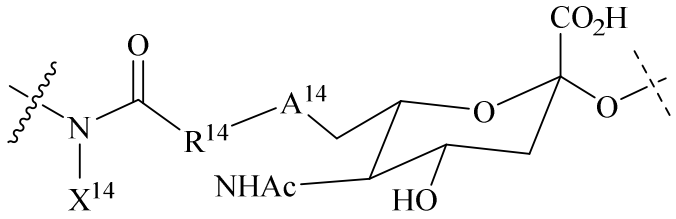


(13-4),

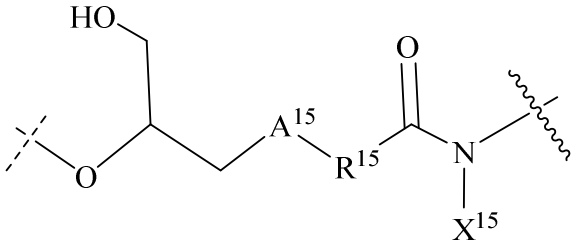


(13-5),

wherein X^{131}, X^{132}, and X^{133}, each independently is $–(CH_2)_{1\text{-}10}$- or $–CH_2CH_2$-$(OCH_2CH_2)_{1\text{-}10}$-, and wherein the symbol ⁞⁞⁞⁞⁞ represents the point of attachment to the carbonyl D;



(14) or

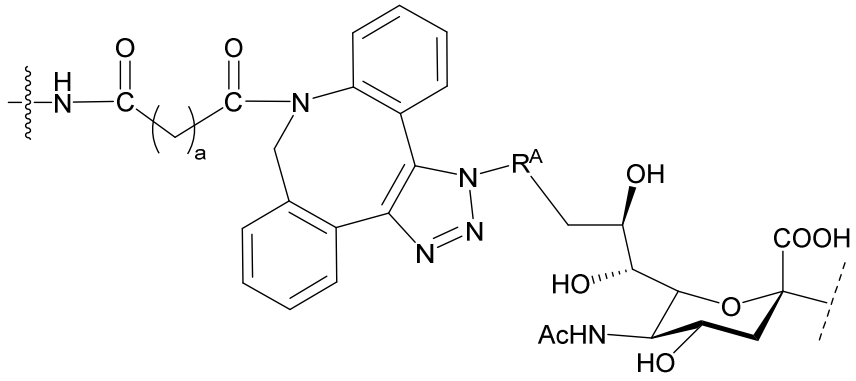


(15),

wherein:

X^{14} and X^{15} each independently is H or methyl, A^{14} and A^{15} each independently is NR^A, NR^ANR^B, O or S, wherein R^A and R^B for each occurrence independently is selected from H, C1-4 alkyl and C6-C18 aryl; and R^{14} and R^{15} each independently is $–(CH_2)_{1\text{-}10}$- or $–CH_2CH_2$-$(OCH_2CH_2)_{1\text{-}10}$-.

10. The particle of Claim 9, wherein the linker L is represented by the following structural formula:



(6A),

wherein:

a is an integer from 2 to 6; and

R^A is absent or is $–(CH_2)_{1\text{-}2}$-O-$(CH_2)_{1\text{-}2}$-NH-.

11. The particles of any one of Claims 1-7 and 9, wherein the P is a PLGA(10k)-PEG(5k).

12. The particle of any one of Claims 1-11, wherein the weight of G per unit weight of P (ligand density) is from 10 to 75 µg/mg.

13. Use of a therapeutically effective amount of a particle of any one of Claims 1-12, in the manufacture of a medicament for treating a subject suffering from an ophthalmic disease.

14. The use of Claim 13, wherein the ophthalmic disease is a dry age-related macular degeneration, a wet age-related macular degeneration, non-proliferative diabetic retinopathy, proliferative diabetic retinopathy, macular edema, uveitis, dry eyes, conjunctivitis, thyroid ophthalmopathy, endophthalmitis, retinal degeneration, glaucoma, retinal vein occlusions, blepharitis, keratitis, an ocular infection, or a cataract.

15. The use of Claim 13, wherein the ophthalmic disease is geographic atrophy.

16. Use of a therapeutically effective amount of a particle of any one of Claims 1-12, in the manufacture of a medicament for treating a subject suffering from an inflammatory disease.

17. The use of Claim 16, wherein the route of administration is one or more of intravenous, intravitreal, oral, intraocular, subretinal, subtenons, intrascleral, periocular, inhalational nasal and oral, intramuscular, intra-areterial, intraspinal, intrathecal, intracranial, intradermal, transdermal (topical), transmucosal, subcutaneous, pulmonary lavage, gastric lavage, and intrahepatic, subcutaneous, or rectal.

18. The use of Claim 16, wherein the inflammatory disease is tuberculosis, chronic obstructive pulmonary disorder (COPD), asthma, acute lung injury, acute respiratory distress syndrome, cystic fibrosis, bronchiectasis, pulmonary fibrosis interstitial lung

disease, pulmonary vascular disease, influenza, viral pneumonia, bacterial pneumonia, allergic bronchitis, nonallergic bronchitis, rhinitis, or fibrosing alveolitis.

19. The use of Claim 16, wherein the inflammatory disease is rheumatoid arthritis, fibromyalgia, systemic lupus erythematosus, systemic sclerosis (scleroderma), psoriatic arthritis, ankylosing spondylitis, sjogrens syndrome, polymyalgia rehumatica, gout, osteoarthritis, infectious arthritis or juvenile idiopathic arthritis.

20. The use of Claim 16, wherein the inflammatory disease is Crohn's disease, ulcerative colitis, irritable bowel syndrome, celiac disease, diverticulitis, gastroesophageal reflux, lactose intolerance, peptic ulcer, cholecystitis, gastritis, colitis, pancreatitis, autoimmune hepatitis, hepatitis, infectious hepatitis, or pancreatitis.

21. The use of Claim 16, wherein the inflammatory disease is septic shock, atherosclerosis, diastolic dysfunction, heart failure, cardiac fibrosis, coxsackie myocarditis, congenital heart block, autoimmune myocarditis, or giant cell myocarditis.

22. The use of Claim 16, wherein the inflammatory disease is kidney transplant rejection, glomerulonephritis, acute nephritis, cystitis, prostatitis, diabetic nephritis, or diabetic kidney disease.

23. The use of Claim 16, wherein the inflammatory disease is dermatitis, eczema, inflammatory rashes, scleroderma, keloid, acne, sarcoidosis, tinea cruris, tinea corporis, tinea pedis, tinea capitis, tinea unguium, rosacea, vitiligo, lichen sclerosis, autoimme urticaria, dermatomyositis, or hidradenitis suppurativa.

24. The use of Claim 16, wherein the inflammatory disease is diabetes, SLE, multiple sclerosis, sjogrens syndrome, Addison’s disease, Graves’ Disease, Hashimoto’s thyroiditis, myasthenia gravis, autoimmune vasculitis, celiac disease, pernicious anemia, alopecia areata, autoimmune hepatitis, autoimmune angioedema, autoimmune encephalomyelitis, autoimmuneinner ear disease, Guillain barre, Kawasaki disease,

lambert-eaton syndrome, Vogt-Koyanagi- Harada Syndrome, systemic vasculitis, giant cell arteritis, sarcoidosis, or polyarteritis nodosa.

25. The use of Claim 16, wherein the inflammatory disease is neuromyelitis, multiple sclerosis, encephalitis, neuro sarcoid, Alzheimer's, amyotrophic lateral sclerosis, or Huntington's chorea, transverse myelitis, Guillain barre syndrome, Parkinsons disease, or benign essential tremors.

26. The use of Claim 16, wherein the inflammatory disease is a viral disease caused by influenza A, influenza B, influenza C, SARS-CoV1, SARS-CoV2, Newcastle Disease virus, Sendai virus, Polyomavirus, HIV, Flavivirus, Caclivirus, Herpes virus, Picoronovirus, or Coronavirus.

27. The use of Claim 16, wherein the inflammatory disease is a bacterial disease caused by gram negative bacteria, gram positive bacteria, aerobic bacteria, aneareobic bacteria, or antibiotic-resistant bacteria.

28. The use of Claim 16, wherein the inflammatory disease is fungemia, fungal keratitis, candidiasis, tinea pedis, or tinea cruris.

29. The use of Claim 16, wherein the inflammatory disease is amoebiasis, giardiasis, toxoplasmosis, or toxocara.

30. The use of Claim 16, wherein the inflammatory disease is idiopathic pulmonary fibrosis, myelofibrosis, hepatic fibrosis, cardiac fibrosis with dystolic dysfunction and CHF, kidney fibrosis, retinal fibrosis, dermal fibrosis, and scarring.

31. The use of Claim 16, wherein the inflammatory disease is sepsis, cytokine storm, or sickle cell disease.

32. Use of a therapeutically effective amount of a particle of any one of Claims 1-12, in the manufacture of a medicament for treating a subject suffering from cancer,

wherein the cancer is a primary lung cancer, a metastatic lung cancer, a breast cancer, a colon cancer, a brain cancer, an oral cancer, an esophageal cancer, a gastric cancer, a biliary tract cancer, a hepatic cancer, rhabdomyosarcoma, a colorectal cancer, a pancreatic cancer, an ovarian cancer, a uterine cancer, a cervical cancer, a testicular cancer, a prostate cancer, a renal cell cancer, a spinal cancer, a neuroblastoma, a neuroendocrine cancer, an ocular cancer, nasopharyngeal cancer, or a dermal cancer.

33. The use of Claim 32, wherein the particle is to be conjointly administered to the subject with a therapeutically amount of a checkpoint inhibitor selected from ipilimumab, nivolimumab, pebrolizumab, atezolizumab, avelumab, durvalumab, or cemiplimab.

34. The use of Claim 32, wherein the particle is to be administered concurrent or sequential with a radiation therapy.

35. The use of Claim 32, wherein the particle is to be conjointly administered to the subject with a therapeutically amount of a second therapeutic agent selected from cyclophosphamide, methothrexate, 5-fluorouracil,vinorelbine, doxorubicin, cyclophosphamide, docetaxel, bleomycin, dacarbazine, mustine, vincristine, procarbazine, prednisolone, epirubicin, cisplatin, tamoxifen, taxotere, a Her2 neu inhibitors, an anti-VEGF inhibitor, an EGFR inhibitor, an ALK inhibitor, sorafenib, or a mTOR inhibitor.

36. Use of a therapeutically effective amount of a particle of any one of Claims 1-12, in the manufacture of a medicament for treating a subject suffering from cancer,

wherein the cancer is acute lymphoblastic leukemia, chronic myelogenous leukemia, acute myelogenous leukemia, non-Hodgkin’s or Hodgkin’s lymphoma.

37. The use of Claim 36, wherein the particle is to be conjointly administered to the subject with a therapeutically effective amount of daunorubicin, cytarabine, or imatinib.

38. The use of Claim 36, wherein the particle is to be administered concurrent with or sequential with stem cell transplant or bone marrow transplant.

39. Use of a therapeutically effective amount of a particle of any one of Claims 1-12, in the manufacture of a medicament for treating a subject suffering from an infectious disease, wherein the infectious disease is caused by Streptococcus group B, Streptococcus pneumonia, E.coli, Pseudomonas aeruginosa, Neisseria meningitidis, Campylobacter jejuni, Tyrpanosoma cruzi, HIV, influenza A, B, or C, Sars CoV1, Sars Co V2, or Herpes viridae.

40. The use of Claim 39, wherein the particle is to be conjointly administered to the subject with a therapeutically effective amount of one or more of zanamivir, oseltamivir, valcyclovir, acyclovir, or zidovudine.

41. A pharmaceutical composition comprising a particle of any one of Claims 1-12, and a pharmaceutically acceptable carrier.

42. The pharmaceutical composition of Claim 41, wherein the pharmaceutically acceptable carrier includes a PBS buffer or a saline solution.

43. The pharmaceutical composition of Claim 41, wherein the concentration of the particles in the carrier is from 0.01 mg/ml to 100 mg/ml.

44. A composition comprising the lyophilized or freeze-dried particle of any one of Claims 1-12.

45. Use of a therapeutically effective amount of a particle of any one of Claims 1-12, in the manufacture of a medicament for inhibiting complement activation in a subject.

46. The use of Claim 45, wherein the subject produces excessive Complement Component C3, C3b.

47. Use of a therapeutically effective amount of a particle of any one of Claims 1-12, in the manufacture of a medicament for treating a subject suffering from complement hyperactivation disease.

48. The use of Claim 47, wherein the route of administration is one or more of intravenous, intravitreal, oral, oral rinse, intraocular, subretinal, subtenons, intrascleral, periocular, inhalational nasal and oral, intramuscular, intra-areterial, intraspinal, intrathecal, intracranial, intradermal, transdermal (topical), transmucosal, subcutaneous, pulmonary lavage, gastric lavage, and intrahepatic, subcutaneous, rectal, intra-articular,

49. The use of Claim 47, wherein the complement hyperactivation disease is dry and wet macular degeneration, paroxysmal nocturnal hematuria, systemic lupus erythematosis, sepsis, anti-phospholipid syndrome, alzheimers, stroke, myocaridal infarction, shock, organ transplant rejection, biomaterial implant rejection, COPD exacerbation, gingivitis/periodontal disease, systemic inflammatory response syndrome.

50. A therapeutically effective amount of a particle of any one of Claims 1-12, for use in therapy.