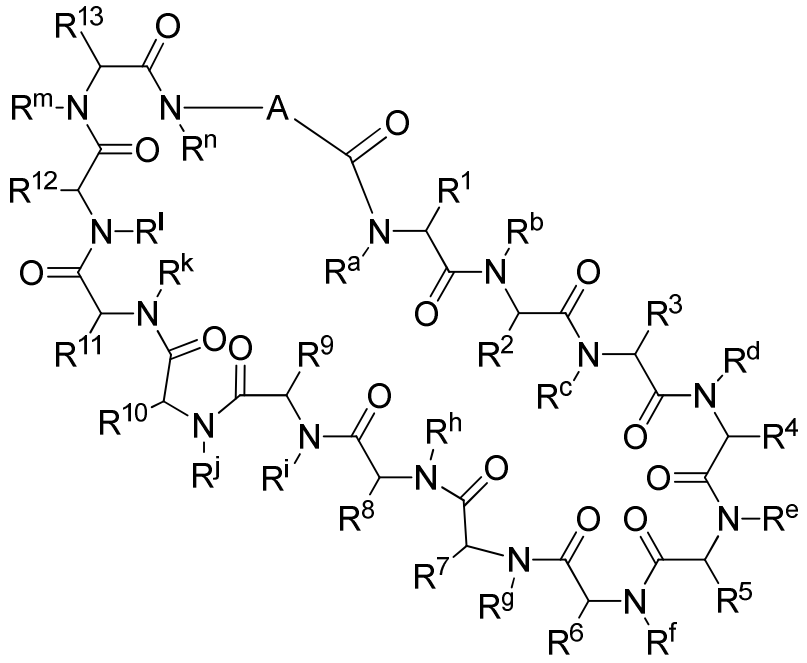
CLAIMS

WHAT IS CLAIMED IS:

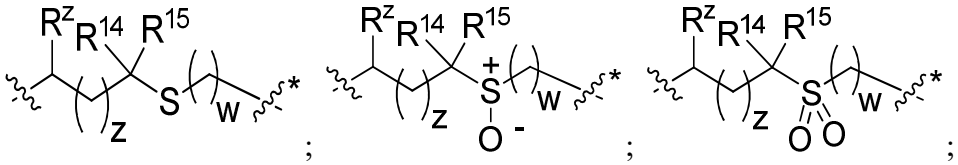
1. A compound of formula (I)

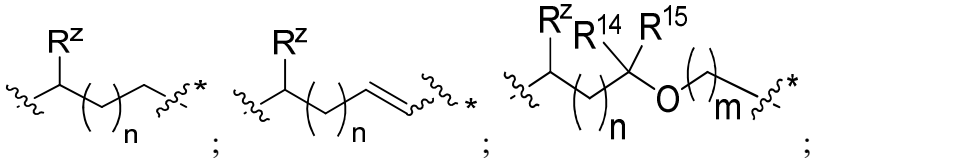


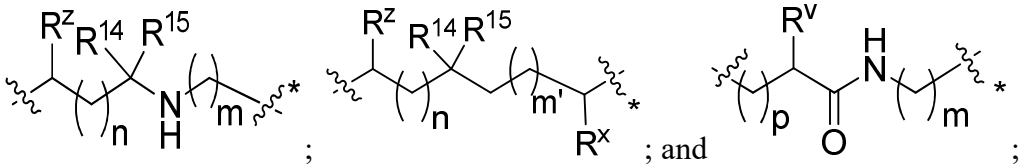
(I),

or a pharmaceutically acceptable salt thereof, wherein:

A is selected from a bond,







wherein:

 denotes the point of attachment to the carbonyl group and  denotes the point of attachment to the nitrogen atom;

z is 0, 1, or 2;

w is 1 or 2;

n is 0 or 1;

m is 1 or 2;

m' is 0 or 1;

p is 0, 1, or 2;

R^x is selected from hydrogen, amino, hydroxy, and methyl;

R^{14} and R^{15} are independently selected from hydrogen and methyl; and

R^z is selected from hydrogen and $-C(O)NHR^{16}$; wherein R^{16} is selected from hydrogen, $-CHR^{17}C(O)NH_2$, $-CHR^{17}C(O)NHCHR^{18}C(O)NH_2$, and $-CHR^{17}C(O)NHCHR^{18}C(O)NHCH_2C(O)NH_2$; wherein R^{17} is selected from hydrogen and $-CH_2OH$ and wherein R^{18} is selected from hydrogen and methyl;

R^v is hydrogen or a natural amino acid side chain;

R^a and R^j are each independently selected from hydrogen and methyl;

R^c, R^f, R^h, R^i, R^m, and R^n are hydrogen;

R^1, R^8, and R^{10} are independently selected from a natural amino acid side chain and an unnatural amino acid side chain;

R^3 and R^6 are independently selected from a natural amino acid side chain and an unnatural amino acid side chain, or, R^3 and R^6 together form a bridge containing between 2 and 7 carbon atoms, optionally one double bond, and optionally one -C(O)NH- or -NHC(O)- group;

R^9 and R^{13} are independently selected from a natural amino acid side chain and an unnatural amino acid side chain, or, R^9 and R^{13} together form a bridge containing between 2 and 7 carbon atoms, optionally one double bond, and optionally one -C(O)NH- or -NHC(O)- group;

R^7 is selected from a natural amino acid side chain and an unnatural amino acid side chain; or R^7 and R^{16} together form a bridge containing between 2 and 7 carbon atoms, optionally one double bond, and optionally one -C(O)NH- or -NHC(O)- group; or R^7 and R^g can form a ring as described below;

provided that at least one of R^3 and R^6; R^9 and R^{13}, and R^7 and R^{16} form a bridge;

R^5 is a natural amino acid side chain or an unnatural amino acid side chain, or, R^3 and R^5 together form a bridge containing between 2 and 7 carbon atoms, optionally one double bond, and optionally one -C(O)NH- or -NHC(O)- group; or R^5 and R^e can form a ring as described below;

R^2, R^4, R^{11}, and R^{12} are independently selected from a natural amino acid side chain and an unnatural amino acid side chain or form a ring with the corresponding vicinal R group as described below;

R^b is methyl or, R^b and R^2, together with the atoms to which they are attached, form a ring selected from azetidine, pyrollidine, morpholine, piperidine, piperazine, and tetrahydrothiazole; wherein each ring is optionally substituted with one to four groups independently selected from amino, cyano, methyl, halo, and hydroxy;

R^d is hydrogen or methyl, or, R^d and R^4, together with the atoms to which they are attached, can form a ring selected from azetidine, pyrollidine, morpholine, piperidine, piperazine, and tetrahydrothiazole; wherein each ring is optionally substituted with one to four groups independently selected from amino, cyano, methyl, halo, hydroxy, and phenyl;

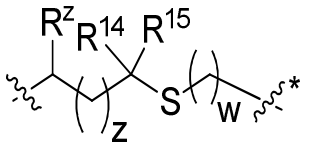
R^e is hydrogen or methyl, or, R^e and R^5, together with the atoms to which they are attached, form a ring selected from azetidine, pyrollidine, morpholine, piperidine, piperazine, and tetrahydrothiazole; wherein each ring is optionally substituted with one to four groups independently selected from amino, cyano, methyl, halo, and hydroxy;

R^g is hydrogen or methyl or R^g and R^7, together with the atoms to which they are attached, can form a ring selected from azetidine, pyrollidine, morpholine, piperidine, piperazine, and tetrahydrothiazole; wherein each ring is optionally substituted with one to four groups independently selected from amino, benzyl optionally substituted with a halo group, benzyloxy, cyano, cyclohexyl, methyl, halo, hydroxy, isoquinolinyloxy optionally substituted with a methoxy group, quinolinyloxy optionally substituted with a halo group, and tetrazolyl; and wherein the pyrrolidine and the piperidine ring are optionally fused to a cyclohexyl, phenyl, or indole group;

R^k is hydrogen or methyl, or, R^k and R^{11}, together with the atoms to which they are attached, form a ring selected from azetidine, pyrollidine, morpholine, piperidine, piperazine, and tetrahydrothiazole; wherein each ring is optionally substituted with one to four groups independently selected from amino, cyano, methyl, halo, and hydroxy; and

R^l is methyl or, R^l and R^{12}, together with the atoms to which they are attached, form a ring selected from azetidine and pyrollidine, wherein each ring is optionally substituted with one to four groups independently selected from amino, cyano, methyl, halo, and hydroxy.

2. A compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein A is



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3. A compound of claim 2, or a pharmaceutically acceptable salt thereof, wherein

z is 0;

w is 1;

R^{14} and R^{15} are hydrogen; and

R^z is–$C(O)NHR^{16}$.

4. A compound of claim 3 wherein

R^1 is phenylC_1-C_3alkyl wherein the phenyl is optionally substituted with hydroxy;

R^2 is C_1-C_7alkyl;

R^3 is $–CH_2C(O)NH_2$ or R^3 and R^6 together form a bridge containing between 2 and 7 carbon atoms, optionally one double bond, and optionally one -C(O)NH- or -NHC(O)- group, or R^3 and R^5 together form a bridge containing between 2 and 7 carbon atoms, optionally one double bond, and optionally one -C(O)NH- or -NHC(O)- group,

R^4 and R^d, together with the atoms to which they are attached, form a pyrrolidine ring;

R^5 is selected from C_1-C_7alkyl and –CH_2(imidazolyl) optionally substituted with $CF_3C(O)$-, or R^3 and R^5 together form a bridge containing between 2 and 7 carbon atoms, optionally one double bond, and optionally one -C(O)NH- or -NHC(O)- group;

R^6 is selected from C_1-C_7alkyl and -$(CH_2)_2C(O)NH_2$, or R^3 and R^6 together form a bridge containing between 2 and 7 carbon atoms, optionally one double bond, and optionally one -C(O)NH- or -NHC(O)- group;

R^7 is hydrogen or R^7 and R^g, together with the atoms to which they are attached, form a pyrroldine ring optionally substituted with a hydroxy group or R^7 and R^{16} together form a bridge containing between 2 and 7 carbon atoms, optionally one double bond, and optionally one -C(O)NH- or -NHC(O)- group;

R^8 is –(CH_2)indolyl;

R^9 is selected from hydroxymethyl and -$CH_2CH_2CO_2H$ or R^9 and R^{13} together form a bridge containing between 2 and 7 carbon atoms, optionally one double bond, and optionally one -C(O)NH- or -NHC(O)- group;

R^{10} is selected from –(CH_2)indolyl and –(CH_2)benzothienyl, each optionally substituted with –CH_2CO_2H;

R^{11} is C_1-C_7alkyl;

R^{12} is C_1-C_7alkyl; and

R^{13} is selected from C_1-C_7alkyl and -$(CH_2)_3NHC(NH)NH_2$ or R^9 and R^{13} together form a bridge containing between 2 and 7 carbon atoms, optionally one double bond, and optionally one -C(O)NH- or -NHC(O)- group.

5. A compound selected from:

Example 1400; Example 1401; Example 1402; Example 1403; Example 1404; Example 1405; Example 1500; Example 1501; Example 1502; Example 1503; Example 1504; Example 1505; Example 1506; Example 1507; Example 1508; Example 5001; Example 5002; Example 5003; Example 5004; Example 5005; Example 5006; Example 5007; Example 5008; Example 7155; Example 7156;

Example 10500; Example 10501; Example 10502; and Example 10503; or a pharmaceutically acceptable salt thereof.

6. The compound of any one of claims 1 to 5 or a pharmaceutically acceptable salt thereof for use in therapy.

7. The compound of any one of claims 1 to 5 or a pharmaceutically acceptable salt thereof for use as a medicament.

8. The compound of any one of claims 1 to 5 or a pharmaceutically acceptable salt thereof for use in enhancing, stimulating, and/or increasing the immune response in a subject in need thereof.

9. The compound or or a pharmaceutically acceptable salt thereof for use according to claim 8, wherein an additional agent is to be administered prior to, after, or simultaneously with the compound or pharmaceutically acceptable salt thereof.

10. The compound or or a pharmaceutically acceptable salt thereof for use according to claim 9 wherein the additional agent is an antimicrobial agent, an antiviral agent, a cytotoxic agent, and/or an immune response modifier.

11. The compound or or a pharmaceutically acceptable salt thereof for use according to claim 9 wherein the additional agent is an HDAC inhibitor.

12. The compound or or a pharmaceutically acceptable salt thereof for use according to claim 9 wherein the additional agent is a TLR7 and/or TLR8 agonist.

13. The compound of any one of claims 1 to 5 or a pharmaceutically acceptable salt thereof for use in inhibiting growth, proliferation, or metastasis of cancer cells in a subject in need thereof.

14. The compound or or a pharmaceutically acceptable salt thereof for use according to claim 13 wherein the cancer is selected from melanoma, renal cell carcinoma, squamous non-small cell lung cancer (NSCLC), non-squamous NSCLC, colorectal cancer, castration-resistant prostate cancer, ovarian cancer, gastric cancer, hepatocellular carcinoma, pancreatic carcinoma, squamous cell carcinoma of the head and neck, carcinomas of the esophagus, gastrointestinal tract and breast, and hematological malignancies.

15. The compound of any one of claims 1 to 5 or a pharmaceutically acceptable salt thereof for use in treating an infectious disease in a subject in need thereof.

16. The compound or or a pharmaceutically acceptable salt thereof for use according to claim 15 wherein the infectious disease is caused by a virus.

17. The compound or or a pharmaceutically acceptable salt thereof for use according to claim 16 wherein the virus is selected from HIV, Hepatitis A, Hepatitis B, Hepatitis C, herpes viruses, and influenza.

18. The compound of any one of claims 1 to 5 or a pharmaceutically acceptable salt thereof for use in treating septic shock in a subject in need thereof.

19. Use of a compound of any one of claims 1 to 5 or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for enhancing, stimulating, and/or increasing the immune response in a subject in need thereof.

20. The use according to claim 19, wherein an additional agent is to be administered prior to, after, or simultaneously with the medicament.

21. The use according to claim 20 wherein the additional agent is an antimicrobial agent, an antiviral agent, a cytotoxic agent, and/or an immune response modifier.

22. The use according to claim 20 wherein the additional agent is an HDAC inhibitor.

23. The use according to claim 20 wherein the additional agent is a TLR7 and/or TLR8 agonist.

24. Use of a compound of any one of claims 1 to 5 or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for inhibiting growth, proliferation, or metastasis of cancer cells in a subject in need thereof.

25. The use according to claim 24 wherein the cancer is selected from melanoma, renal cell carcinoma, squamous non-small cell lung cancer (NSCLC), non-squamous NSCLC, colorectal cancer, castration-resistant prostate cancer, ovarian cancer, gastric cancer, hepatocellular carcinoma, pancreatic carcinoma, squamous cell carcinoma of the head and neck, carcinomas of the esophagus, gastrointestinal tract and breast, and hematological malignancies.

26. Use of a compound of any one of claims 1 to 5 or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for treating an infectious disease in a subject in need thereof.

27. The use according to claim 26 wherein the infectious disease is caused by a virus.

28. The use according to claim 27 wherein the virus is selected from HIV, Hepatitis A, Hepatitis B, Hepatitis C, herpes viruses, and influenza.

29. Use of a compound of any one of claims 1 to 5 or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for treating septic shock in a subject in need thereof.