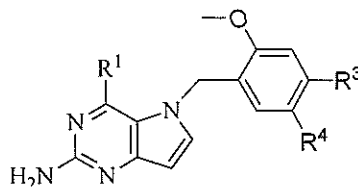


WE CLAIM:

1. A compound having the structure of Formula (I), or a pharmaceutical salt thereof:



Formula (I)

wherein:

R^1 is $-NHR^6$ or $-NHCHR^6R^9$;

R^3 is H, $-L_2R^{12}$, $-OL_2R^{12}$, $-C(CH_3)_2R^{12}$, $-P(=O)(OH)_2$, $-P(=O)OH(OR^7)$, $-CF_2R^{12}$, $-CF_2C(=O)OH$, $-CH=CHC(=O)OH$, $-C(=O)OH$, $-L_2C(=O)OH$, $-L_7C(=O)OH$, $-OL_2C(=O)OH$ or tetrazolyl;

R^4 is H, $-L_2R^{12}$, $-OL_2R^{12}$, $-C(CH_3)_2R^{12}$, $-P(=O)(OH)_2$, $-P(=O)OH(OR^7)$, $-CF_2R^{12}$, $-CF_2C(=O)OH$, $-CH=CHC(=O)OH$, $-C(=O)OH$, $-L_2C(=O)OH$, $-L_7C(=O)OH$, $-OL_2C(=O)OH$ or tetrazolyl;

where, when R^3 is H, then R^4 is $-L_2R^{12}$, $-OL_2R^{12}$, $-C(CH_3)_2R^{12}$, $-P(=O)(OH)_2$, $-P(=O)OH(OR^7)$, $-CF_2R^{12}$, $-CF_2C(=O)OH$, $-CH=CHC(=O)OH$, $-C(=O)OH$, $-L_2C(=O)OH$, $-L_7C(=O)OH$, $-OL_2C(=O)OH$ or tetrazolyl;

or when R^4 is H, then R^3 is $-L_2R^{12}$, $-OL_2R^{12}$, $-C(CH_3)_2R^{12}$, $-P(=O)(OH)_2$, $-P(=O)OH(OR^7)$, $-CF_2R^{12}$, $-CF_2C(=O)OH$, $-CH=CHC(=O)OH$, $-C(=O)OH$, $-L_2C(=O)OH$, $-L_7C(=O)OH$, $-OL_2C(=O)OH$ or tetrazolyl;

L_1 is $-(CH_2)_m$;

L_2 is $-(CH_2)_m$;

L_7 is $-(CH_2)_m(CHR^{11}CH_2)_m(CH_2)_n$;

R^6 is $-C_3$ - C_6 alkyl;

R^7 is $-C_1$ - C_3 alkyl;

R^9 is L_1OH ;

each R^{11} is independently selected from $-OH$;

R^{12} is

a) an unsubstituted tetrazolyl;

b) a tetrazolyl substituted with $-L_1C(=O)OH$;

or

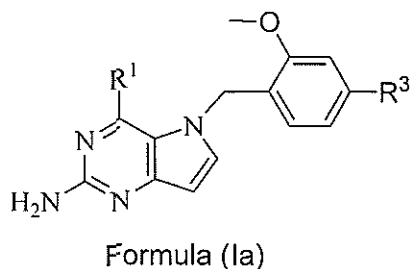
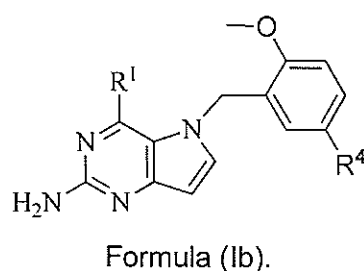
c) a 5-6 membered heterocycloalkyl having 1 to 2 heteroatoms independently selected from N and O substituted with $-C(=O)OH$;

each m is independently selected from 1, 2, 3, and 4,

and

each n is independently selected from 0, 1, 2, 3, and 4.

2. The compound of claim 1, wherein the compound of Formula (I) is a compound of Formula (Ia) or Formula (Ib):



3. The compound of claim 1 or claim 2, wherein:

R^1 is $-NHR^6$ or $-NHCHR^6R^9$;

R^3 is H, $-OL_2C(=O)OH$ or tetrazolyl;

R^4 is H, $-L_2R^{12}$, $-OL_2R^{12}$, $-C(CH_3)_2R^{12}$, $-P(=O)(OH)_2$, $-P(=O)OH(OR^7)$, $-CF_2R^{12}$, -

$CF_2C(=O)OH$, $-CH=CHC(=O)OH$, $-C(=O)OH$, $-L_2C(=O)OH$, $-L_7C(=O)OH$ or tetrazolyl;

where, when R^3 is H, then R^4 is $-L_2R^{12}$, $-OL_2R^{12}$, $-C(CH_3)_2R^{12}$, $-P(=O)(OH)_2$, -

$P(=O)OH(OR^7)$, $-CF_2R^{12}$, $-CF_2C(=O)OH$, $-CH=CHC(=O)OH$, -

$C(=O)OH$, $-L_2C(=O)OH$, $-L_7C(=O)OH$ or tetrazolyl;

or when R^4 is H, then R^3 is $-OL_2C(=O)OH$ or tetrazolyl;

L_1 is $-(CH_2)_m$;

L_2 is $-(CH_2)_m$;

$L_7 = -(CH_2)_m(CHR^{11}CH_2)_m(CH_2)_n$;

R^6 is $-C_3$ - C_6 alkyl;

R^7 is $-C_1$ - C_3 alkyl; methyl

R^9 is L_1OH ;

each R^{11} is independently selected from $-OH$;

R^{12} is

a) an unsubstituted tetrazolyl;

b) a tetrazolyl substituted with $-L_1C(=O)OH$;

or

c) a 5-6 membered heterocycloalkyl having 1 to 2 heteroatoms independently selected from N and O substituted with $-C(=O)OH$;

each m is independently selected from 1, 2, 3, and 4,

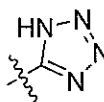
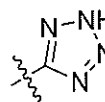
and

each n is independently selected from 0, 1, 2, 3, and 4.

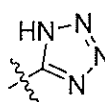
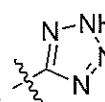
4. The compound of claim 1 or claim 2, wherein:

R^1 is $-NHR^6$ or $-NHCHR^6R^9$;

R^3 is H, $-L_2R^{12}$, $-OL_2R^{12}$, $-C(CH_3)_2R^{12}$, $-P(=O)(OH)_2$, $-P(=O)OH(OR^7)$, $-CF_2R^{12}$, $-CF_2C(=O)OH$, $-CH=CHC(=O)OH$, $-C(=O)OH$, $-L_2C(=O)OH$, $-L_7C(=O)OH$, -

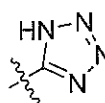
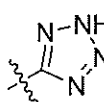
5 $OL_2C(=O)OH$,  or  ;

R^4 is H, $-L_2R^{12}$, $-OL_2R^{12}$, $-C(CH_3)_2R^{12}$, $-P(=O)(OH)_2$, $-P(=O)OH(OR^7)$, $-CF_2R^{12}$, $-CF_2C(=O)OH$, $-CH=CHC(=O)OH$, $-C(=O)OH$, $-L_2C(=O)OH$, $-L_7C(=O)OH$, -

$OL_2C(=O)OH$,  or  ;

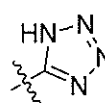
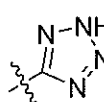
where, when R^3 is H, then R^4 is $-L_2R^{12}$, $-OL_2R^{12}$, $-C(CH_3)_2R^{12}$, $-P(=O)(OH)_2$, -

10 $P(=O)OH(OR^7)$, $-CF_2R^{12}$, $-CF_2C(=O)OH$, $-CH=CHC(=O)OH$, -

$C(=O)OH$, $-L_2C(=O)OH$, $-L_7C(=O)OH$, $-OL_2C(=O)OH$,  or  ;

or when R^4 is H, then R^3 is $-L_2R^{12}$, $-OL_2R^{12}$, $-C(CH_3)_2R^{12}$, $-P(=O)(OH)_2$, -

$P(=O)OH(OR^7)$, $-CF_2R^{12}$, $-CF_2C(=O)OH$, $-CH=CHC(=O)OH$, -

15 $C(=O)OH$, $-L_2C(=O)OH$, $-L_7C(=O)OH$, $-OL_2C(=O)OH$,  ,  ;

L_1 is $-(CH_2)_m$;

L_2 is $-(CH_2)_m$;

$L_7 = -(CH_2)_m(CHR^{11}CH_2)_m(CH_2)_n$;

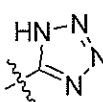
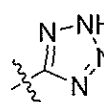
20 R^6 is $-C_3$ - C_6 alkyl;

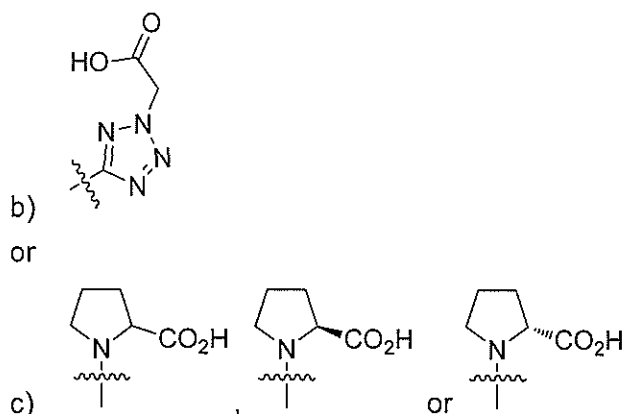
R^7 is $-C_1$ - C_3 alkyl;

R^9 is L_1OH ;

each R^{11} is independently selected from $-OH$;

R^{12} is

25 a)  or  ;



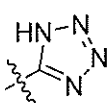
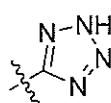
each m is independently selected from 1, 2, 3, and 4,

and

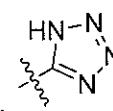
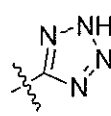
each n is independently selected from 0, 1, 2, 3, and 4.

5. The compound of claim 1 or claim 2, wherein:

R^1 is $-NHR^6$ or $-NHCHR^6R^9$;

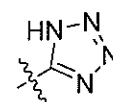
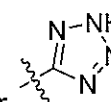
R^3 is H, $-OL_2C(=O)OH$,  or  ;

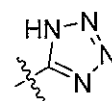
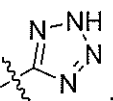
R^4 is H, $-L_2R^{12}$, $-OL_2R^{12}$, $-C(CH_3)_2R^{12}$, $-P(=O)(OH)_2$, $-P(=O)OH(OR^7)$, $-CF_2R^{12}$, -

$CF_2C(=O)OH$, $-CH=CHC(=O)OH$, $-C(=O)OH$, $-L_2C(=O)OH$, $-L_7C(=O)OH$,  or  ;

where, when R^3 is H, then R^4 is $-L_2R^{12}$, $-OL_2R^{12}$, $-C(CH_3)_2R^{12}$, $-P(=O)(OH)_2$, -

$P(=O)OH(OR^7)$, $-CF_2R^{12}$, $-CF_2C(=O)OH$, $-CH=CHC(=O)OH$, -

$C(=O)OH$, $-L_2C(=O)OH$, $-L_7C(=O)OH$,  or  ;

or when R^4 is H, then R^3 is $-OL_2C(=O)OH$,  ,  ;

L_1 is $-(CH_2)_m$;

L_2 is $-(CH_2)_m$;

$L_7 = -(CH_2)_m(CHR^{11}CH_2)_m(CH_2)_n$;

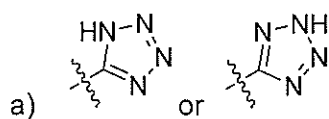
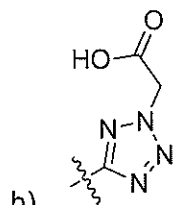
R^6 is $-C_3$ - C_6 alkyl;

R^7 is $-C_1$ - C_3 alkyl;

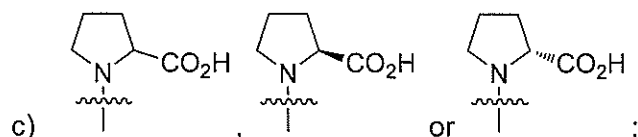
R^9 is L_1OH ;

each R^{11} is independently selected from $-OH$;

R¹² is



or



each m is independently selected from 1, 2, 3, and 4,

and

each n is independently selected from 0, 1, 2, 3, and 4.

6. The compound of any one of claims 1 to 5, wherein:

L₁ is -CH₂-;

L₂ is -CH₂- or -CH₂CH₂-;

L₇ = -(CH₂)₂(CHR¹¹CH₂)₂-;

R⁶ is -C₄alkyl or -C₅alkyl;

R⁷ is methyl, ethyl or propyl,

and

R¹¹ is OH.

7. The compound of claim 1 or claim 2, wherein:

R¹ is -NHR⁶;

R³ is H;

R⁴ is -L₂R¹²;

L₂ is -(CH₂)_m-;

R⁶ is -C₃-C₆alkyl;

R¹² is

a) an unsubstituted tetrazolyl;

b) a tetrazolyl substituted with -L₁C(=O)OH;

or

c) a 5-6 membered heterocycloalkyl having 1 to 2 heteroatoms independently selected from N and O substituted with -C(=O)OH,

and

each m is independently selected from 1, 2, 3, and 4.

8. The compound of claim 1 or claim 2, wherein:

R^1 is $-NHR^6$;

R^3 is H;

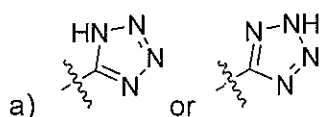
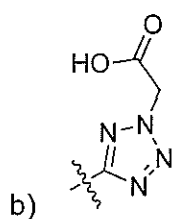
R^4 is $-L_2R^{12}$;

L_2 is $-\text{CH}_2-$ or $-\text{CH}_2\text{CH}_2-$;

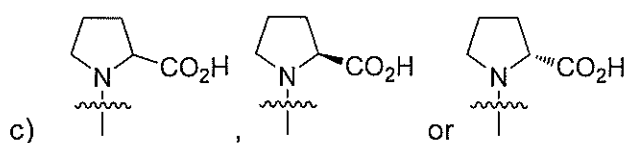
R^6 is $-\text{C}_5\text{alkyl}$;

and

R^{12} is



or



9. The compound of claim 1 or claim 2, wherein:

R^1 is $-NHR^6$;

R^3 is H;

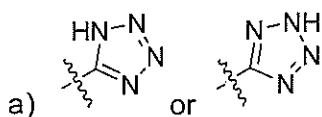
R^4 is $-L_2R^{12}$;

L_2 is $-\text{CH}_2-$ or $-\text{CH}_2\text{CH}_2-$;

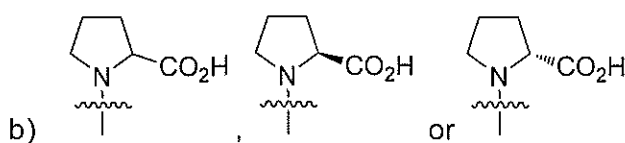
R^6 is $-\text{C}_5\text{alkyl}$;

and

R^{12} is



or



10. The compound of claim 1 or claim 2, wherein:

R^1 is $-NHR^6$;

R^3 is H;

R^4 is $-L_2C(=O)OH$;

5 L_2 is $-CH_2-$ or $-CH_2CH_2-$;

and

R^6 is $-C_5$ alkyl.

11. The compound of claim 1, wherein the compound is selected from:

- 10 5-(5-((1H-tetrazol-5-yl)methoxy)-2-methoxybenzyl)-N4-pentyl-5H-pyrrolo[3,2-d]pyrimidine-2,4-diamine;
 5-(5-((1H-tetrazol-5-yl)methyl)-2-methoxybenzyl)-N4-pentyl-5H-pyrrolo[3,2-d]pyrimidine-2,4-diamine;
 (S)-2-((5-(5-((1H-tetrazol-5-yl)methyl)-2-methoxybenzyl)-2-amino-5H-pyrrolo[3,2-d]pyrimidin-4-yl)amino)hexan-1-ol;
 15 (S)-2-((5-(5-((1H-tetrazol-5-yl)methyl)-2-methoxybenzyl)-2-amino-5H-pyrrolo[3,2-d]pyrimidin-4-yl)amino)pentan-1-ol;
 5-(5-(2-(1H-tetrazol-5-yl)ethyl)-2-methoxybenzyl)-N4-pentyl-5H-pyrrolo[3,2-d]pyrimidine-2,4-diamine;
 20 N4-hexyl-5-(2-methoxy-5-(1H-tetrazol-5-yl)benzyl)-5H-pyrrolo[3,2-d]pyrimidine-2,4-diamine;
 (S)-2-((2-amino-5-(2-methoxy-5-(1H-tetrazol-5-yl)benzyl)-5H-pyrrolo[3,2-d]pyrimidin-4-yl)amino)hexan-1-ol;
 2-(5-(3-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxybenzyl)-2H-tetrazol-2-yl)acetic acid;
 25 5-(2-methoxy-4-(1H-tetrazol-5-yl)benzyl)-N4-pentyl-5H-pyrrolo[3,2-d]pyrimidine-2,4-diamine;
 5-(2-methoxy-5-(1H-tetrazol-5-yl)benzyl)-N4-pentyl-5H-pyrrolo[3,2-d]pyrimidine-2,4-diamine;
 30 5-(5-(2-(1H-tetrazol-5-yl)propan-2-yl)-2-methoxybenzyl)-N4-pentyl-5H-pyrrolo[3,2-d]pyrimidine-2,4-diamine;
 (S)-2-((5-(5-(2-(1H-tetrazol-5-yl)propan-2-yl)-2-methoxybenzyl)-2-amino-5H-pyrrolo[3,2-d]pyrimidin-4-yl)amino)hexan-1-ol;
 5-(5-(difluoro(1H-tetrazol-5-yl)methyl)-2-methoxybenzyl)-N4-pentyl-5H-pyrrolo[3,2-d]pyrimidine-2,4-diamine;
 35 2-(3-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxyphenyl)-2,2-difluoroacetic acid;

(3R,5R)-7-(3-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxyphenyl)-3,5-dihydroxyheptanoic acid;

2-(3-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxyphenyl)acetic acid;

5 (S)-2-(3-((2-amino-4-((1-hydroxyhexan-2-yl)amino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxyphenyl)acetic acid;

3-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxybenzoic acid;

10 (3-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxyphenyl)phosphonic acid;

methyl hydrogen (3-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxyphenyl)phosphonate;

(E)-3-(3-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxyphenyl)acrylic acid;

15 3-(3-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxyphenyl)propanoic acid;

(S)-3-(3-((2-amino-4-((1-hydroxyhexan-2-yl)amino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxyphenyl)propanoic acid;

20 (S)-1-(4-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-3-methoxybenzyl)pyrrolidine-2-carboxylic acid ;

(R)-1-(3-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxybenzyl)pyrrolidine-2-carboxylic acid, and

2-(4-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-3-methoxyphenoxy)acetic acid.

25

12. The compound of claim 1, wherein the compound is selected from:

2-(3-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxyphenyl)acetic acid ;

30 3-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxybenzoic acid ;

5-(5-((1H-tetrazol-5-yl)methyl)-2-methoxybenzyl)-N4-pentyl-5H-pyrrolo[3,2-d]pyrimidine-2,4-diamine;

5-(5-(2-(1H-tetrazol-5-yl)ethyl)-2-methoxybenzyl)-N4-pentyl-5H-pyrrolo[3,2-d]pyrimidine-2,4-diamine;

35 (S)-1-(4-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-3-methoxybenzyl)pyrrolidine-2-carboxylic acid , and

(R)-1-(3-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-4-methoxybenzyl)pyrrolidine-2-carboxylic acid.

13. A pharmaceutical composition comprising a therapeutically effective amount of a compound
5 of any one of claims 1-12 and a pharmaceutically acceptable carrier.
14. Use of a compound of any one of claims 1-12 in the manufacture of a medicament for
treating a disease or disorder associated with TLR7 activity.
- 10 15. The use of claim 14, wherein the disease is an infectious disease, a viral infectious disease,
an inflammatory disease, a respiratory disease, a dermatological disease, an autoimmune
disease, a cell-proliferative disease or cancer.
- 15 16. The use of claim 14, wherein the disease or condition is asthma, chronic obstructive
pulmonary disease (COPD), adult respiratory distress syndrome (ARDS), ulcerative colitis,
Crohn's disease, bronchitis, dermatitis, actinic keratosis, basal cell carcinoma, bladder
cancer, allergic rhinitis, psoriasis, scleroderma, urticaria, rheumatoid arthritis, multiple
sclerosis, cancer, breast cancer, HIV, hepatitis, hepatitis C or lupus.
- 20 17. The use of claim 14, wherein the disease or condition is hepatitis B, hepatitis C, colorectal
cancer or hepatocellular carcinoma.
18. A compound of any one of claims 1-12 for use in treating a disease associated with TLR7
receptor activity, wherein the disease is an infectious disease, a viral infectious disease, an
25 inflammatory disease, a respiratory disease, a dermatological disease, an autoimmune
disease, a cell-proliferative disease or cancer.