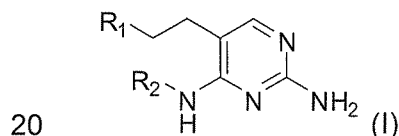


In the treatment of certain viral infections, regular injections of interferon (IFN α) can be administered, as is the case for hepatitis C virus (HCV), (Fried et. al. Peginterferon- α plus ribavirin for chronic hepatitis C virus infection, *N Engl J Med* 2002; 347: 975-82). Orally available small molecule IFN inducers offer the potential advantages of reduced immunogenicity and convenience of administration. Thus, novel IFN inducers are potentially effective new class of drugs for treating virus infections. For an example in the literature of a small molecule IFN inducer having antiviral effect see De Clercq, E.; Descamps, J.; De Somer, P. *Science* 1978, 200, 563-565.

- 10 Interferon α is also given in combination with other drugs in the treatment of certain types of cancer (Eur. J. Cancer 46, 2849-57, and Cancer Res. 1992, 52, 1056). TLR 7/8 agonists are also of interest as vaccine adjuvants because of their ability to induce pronounced Th1 response (Hum. Vaccines 2010, 6, 1-14, and Hum. Vaccines 2009, 5, 381-394).
- 15 However, there exists a strong need for novel Toll-Like receptor modulators having preferred selectivity, and an improved safety profile compared to the compounds of the prior art.

In accordance with a first aspect of the present disclosure, a compound of formula (I) is provided



or a pharmaceutically acceptable salt, solvate or polymorph thereof, wherein

- R_1 is hydrogen, fluorine, hydroxyl, amine, C_{1-6} alkyl, C_{1-6} alkylamino, C_{1-6} alkoxy, C_{3-7} cycloalkyl, C_{4-7} heterocycle, aryl, bicyclic heterocycle, arylalkyl, heteroaryl, heteroarylalkyl, aryloxy, heteroaryloxy, carboxylic acid, carboxylic ester, carboxylic amide each of which is optionally substituted by one or more substituents independently selected from halogen, hydroxyl, amino, C_{1-6} alkyl, di- (C_{1-6}) alkylamino, (C_{1-4}) alkoxy- (C_{1-4}) alkyl, C_{1-6} alkylamino, C_{1-6} alkyl, C_{1-6} alkoxy, C_{3-6} cycloalkyl, carboxylic acid, carboxylic ester, carboxylic amide, heterocycle, aryl, alkenyl, alkynyl, arylalkyl, heteroaryl, heteroarylalkyl, or nitrile,
- 30 R_2 is C_{1-6} alkyl, each of which is optionally substituted by one or more substituents independently selected from halogen, hydroxyl, amino, nitrile, carboxylic acid,

carboxylic ester, carboxylic amide, C₁₋₃ alkyl, C₁₋₃ alkoxy or C₃₋₆ cycloalkyl, sulfone, sulfoxide, or nitrile,

with the proviso that N-(2-amino-5-phenethylpyrimidine-4-yl)-N-pentylamine is excluded.

5 In a first embodiment the current disclosure relates to compounds of formula (I) wherein R₁ is a heterocycle and R₂ is C₁₋₆ alkyl substituted with, for example, a hydroxyl group.

In a second embodiment the present disclosure provides compounds of formula (I) wherein R₁ is hydrogen and wherein R₂ is C₁₋₆ alkyl, each of which is optionally substituted by one or more substituents independently selected from halogen, hydroxyl, amino, nitrile, carboxylic acid, carboxylic ester, carboxylic amide, C₁₋₃ alkyl, C₁₋₃ alkoxy or
10 C₃₋₆ cycloalkyl, sulfone, sulfoxide, or nitrile.

The compounds of formula (I) and their pharmaceutically acceptable salt, solvate or polymorph thereof have activity as pharmaceuticals, in particular as modulators of Toll-Like Receptor (especially TLR7 and/or TLR8) activity.

15 In a further aspect the present disclosure provides a pharmaceutical composition comprising a compound of formula (I) or a pharmaceutically acceptable salt, ~~solvate or polymorph~~ thereof together with one or more pharmaceutically acceptable excipients, diluents or carriers.

Furthermore a compound of formula (I) or a pharmaceutically acceptable salt, solvate or polymorph thereof according to the current disclosure, or a pharmaceutical composition
20 comprising said compound of formula (I) or a pharmaceutically acceptable salt, solvate or polymorph thereof can be used as a medicament. Hence, in a further aspect, the present disclosure provides a compound of formula (I) or a pharmaceutically acceptable salt, ~~solvate or polymorph~~ thereof as defined herein, or a pharmaceutical composition as defined herein for use as a medicament.

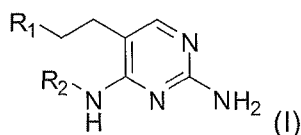
25 Furthermore, a compound of formula (I) or a pharmaceutically acceptable salt, solvate or polymorph thereof, or said pharmaceutical composition comprising said compound of formula (I) or a pharmaceutically acceptable salt, solvate or polymorph thereof can be used accordingly in the treatment of any disorder in which the modulation of TLR7 and /or TLR8 is involved. Hence, in a further aspect, the present disclosure provides a compound
30 of formula (I) or a pharmaceutically acceptable salt, ~~solvate or polymorph~~ thereof as defined herein, or a pharmaceutical composition as defined herein for use in the treatment of a disorder in which the modulation of TLR7 and /or the modulation of TLR8 is involved.

The term "alkyl" refers to a straight-chain or branched-chain saturated aliphatic hydrocarbon containing the specified number of carbon atoms.

35 The term "halogen" refers to fluorine, chlorine, bromine or iodine.

Claims

1. A compound of formula (I)



5 or a pharmaceutically acceptable salt, ~~solvate or polymorph~~ thereof, wherein

R₁ is hydrogen, fluorine, hydroxyl, amine, C₁₋₆ alkyl, C₁₋₆ alkylamino, C₁₋₆ alkoxy, C₃₋₇ cycloalkyl, C₄₋₇ heterocycle, aryl, bicyclic heterocycle, arylalkyl, heteroaryl, heteroarylalkyl, aryloxy, heteroaryloxy, carboxylic acid, carboxylic ester, carboxylic amide
10 each of which is optionally substituted by one or more substituents independently selected from halogen, hydroxyl, amino, C₁₋₆ alkyl, di-(C₁₋₆)alkylamino, (C₁₋₄)alkoxy-(C₁₋₄)alkyl, C₁₋₆ alkylamino, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₃₋₆ cycloalkyl, carboxylic acid, carboxylic ester, carboxylic amide, heterocycle, aryl, alkenyl, alkynyl, arylalkyl, heteroaryl, heteroarylalkyl, or nitrile,

R₂ is C₁₋₆ alkyl, each of which is optionally substituted by one or more substituents independently selected from halogen, hydroxyl, amino, nitrile, carboxylic acid, carboxylic
15 ester, carboxylic amide, C₁₋₃ alkyl, C₁₋₃ alkoxy or C₃₋₆ cycloalkyl, sulfone, sulfoxide, or nitrile, with the proviso that N-(2-amino-5-phenethylpyrimidine-4-yl)-N-pentylamine is excluded.

2. A compound according to claim 1 wherein R₁ is a heterocycle and R₂ is C₁₋₆ alkyl substituted with a hydroxyl group.

- 20 3. A compound according to claim 1 wherein R₁ is hydrogen and wherein R₂ is C₁₋₆ alkyl, each of which is optionally substituted by one or more substituents independently selected from halogen, hydroxyl, amino, nitrile, carboxylic acid, carboxylic ester, carboxylic amide, C₁₋₃ alkyl, C₁₋₃ alkoxy or C₃₋₆ cycloalkyl, sulfone, sulfoxide, or nitrile .

- 25 4. A pharmaceutical composition comprising a compound of formula (I) or a pharmaceutically acceptable salt, ~~solvate or polymorph~~ thereof according to claim 1-3 together with one or more pharmaceutically acceptable excipients, diluents or

carriers.

5 | 5. A compound of formula (I) or a pharmaceutically acceptable salt, ~~solvate or polymorph~~
thereof according to claim 1-3, or a pharmaceutical composition according to claim 4 for use
as a medicament.

10 | 6. A compound of formula (I) or a pharmaceutically acceptable salt, ~~solvate or polymorph~~
thereof according to claim 1-3, or a pharmaceutical composition according to claim 4 for use
in the treatment of a disorder in which the modulation of TLR 7 and/or the modulation of
TLR8 is involved.