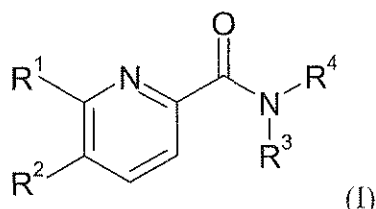


- OC18), psychiatric diseases and psychosis (Garcia-Gutierrez, M.S. Br J Pharmacol 2012, 165(4): 951), oncology (Preet, A. Cancer Prev Res 2011, 4: 65), encephalitis and malaria (Zimmer, A. WO 2011045068), allergy and inflammation (Ueda, Y. Life Sci 2007, 80(5): 414), encephalitis and malaria (Zimmer, WO 2011045068), asthma (Lunn, C.A. J Pharmacol Exp Ther 2006, 316(2): 780), immunological disorders (Fakhfour, G. Neuropharmacology 2012, 63(4): 653), rheumatoid arthritis (Chackalamannil, S. US 7776889), arthritis (Lunn, C.A. J Pharmacol Exp Ther 2006, 316(2): 780), and gastrointestinal disorders (Barth, F. FR 2887550).

The compounds of the ~~invention~~disclosure bind to and modulate the CB2 receptor
10 and have lower CB1 receptor activity.

In one aspect, there is provided a compound of formula (I)



wherein

R¹ is alkylsulfanyl, cycloalkylalkoxy, halophenyl or halogen;

- 15 R² is phenyl, halophenyl, cycloalkylalkoxy, alkoxyazetidiny, 2-oxa-6-azaspiro[3.3]heptyl, (haloalkyl)(hydroxy)pyrrolidinyl, halo-5-azaspiro[2.4]heptyl, (alkyl)(halo)azetidiny or (cycloalkyl)(halo)azetidiny;

one of R³ and R⁴ is hydrogen and the other one is -(CR⁵R⁶)_m-(CH₂)_n-R⁷;

- 20 or R³ and R⁴ together with the nitrogen atom to which they are attached form aminocarbonyl-dioxo-thiazolidinyl or (aminocarbonyl)(halo)pyrrolidinyl;

R⁵ and R⁶ are independently selected from hydrogen, alkyl, cycloalkylalkyl and alkylsulfanylalkyl;

or R⁵ and R⁶ together with the carbon atom to which they are attached form oxetanyl;

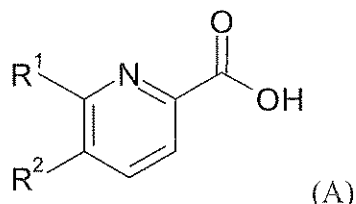
- 25 R⁷ is alkoxycarbonyl, oxazol-2-yl, 5-alkyl-1,2,4-oxadiazol-3-yl, aminocarbonyl, alkylaminocarbonyl, thiazol-2-yl, 5-halophenyl-1,3,4-oxadiazol-2-yl or hydroxycycloalkyl, haloalkylaminocarbonyl or haloazetidiny carbonyl;

m is 0 or 1;

n is 0 or 1;

or a pharmaceutically acceptable salt or ester thereof.

5 In another aspect, there is provided a process for the preparation of a compound as defined herein, comprising the reaction of a compound of formula (A)



in the presence of NHR³R⁴, an amide bond forming coupling agent and a base, wherein R¹ to R⁴ are as defined herein.

10 In another aspect, there is provided a compound as defined herein, when manufactured according to a process as defined herein.

In another aspect, there is provided a compound as defined herein for use as therapeutically active substance.

In another aspect, there is provided a pharmaceutical composition comprising a compound as defined herein and a therapeutically inert carrier.

15 In another aspect, there is provided use of a compound as defined herein for the preparation of a medicament for the treatment or prophylaxis of pain, neuropathic pain, asthma, osteoporosis, inflammation, psychiatric diseases, psychosis, oncology, encephalitis, malaria, allergy, immunological disorders, arthritis, gastrointestinal disorders, psychiatric disorders rheumatoid arthritis, psychosis or allergy.

20 In another aspect, there is provided a compound as defined herein for the treatment or prophylaxis of pain, neuropathic pain, asthma, osteoporosis, inflammation, psychiatric diseases, psychosis, oncology, encephalitis, malaria, allergy, immunological disorders, arthritis, gastrointestinal disorders, psychiatric disorders rheumatoid arthritis, psychosis or allergy.

25 In the present description the term "alkyl", alone or in combination, signifies a straight-chain or branched-chain alkyl group with 1 to 8 carbon atoms, particularly a straight or branched-chain alkyl group with 1 to 6 carbon atoms and more particularly a straight or branched-chain alkyl group with 1 to 4 carbon atoms. Examples of straight-

chain and branched-chain C1-C8 alkyl groups are methyl, ethyl, propyl, isopropyl, butyl, isobutyl, tert.-butyl, the isomeric pentyls, the isomeric hexyls, the isomeric heptyls and the isomeric octyls, particularly methyl, ethyl, propyl, butyl and pentyl. Particular examples of alkyl are methyl, ethyl, isopropyl, butyl, isobutyl, tert.-butyl and pentyl. Methyl, ethyl and isobutyl are particular examples of alkyl in the compound of formula (I).

The term “cycloalkyl”, alone or in combination, signifies a cycloalkyl ring with 3 to 8 carbon atoms and particularly a cycloalkyl ring with 3 to 6 carbon atoms. Examples of cycloalkyl are cyclopropyl, cyclobutyl, cyclopentyl and cyclohexyl, cycloheptyl and cyclooctyl. Particular examples of “cycloalkyl” are cyclopropyl and cyclohexyl.

10 The term “alkoxy”, alone or in combination, signifies a group of the formula alkyl-O- in which the term “alkyl” has the previously given significance, such as methoxy, ethoxy, n-propoxy, isopropoxy, n-butoxy, isobutoxy, sec-butoxy and tert.-butoxy. Particular “alkoxy” are methoxy and ethoxy.

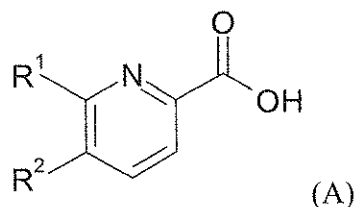
The term “oxy”, alone or in combination, signifies the -O- group.

15 The term “oxo”, alone or in combination, signifies the =O group.

The terms “halogen” or “halo”, alone or in combination, signifies fluorine, chlorine, bromine or iodine and particularly fluorine, chlorine or bromine, more particularly fluorine and chlorine. The term “halo”, in combination with another group, denotes the substitution of said group with at least one halogen, particularly substituted with one to five halogens, particularly one to four halogens, i.e. one, two, three or four halogens.

N-[(2S)-1-Amino-4-methyl-1-oxopent-2-yl]-6-(4-chlorophenyl)-5-(cyclopropylmethoxy)pyridine-2-carboxamide.

12. A process for the preparation of a compound according to any one of claims 1 to 11, comprising the reaction of a compound of formula (A)



5

in the presence of NHR^3R^4 , an amide bond forming coupling agent and a base, wherein R^1 to R^4 are as defined in any one of claims 1 to 9.

13. A compound according to any one of claims 1 to 11, when manufactured according to a process of claim 12.
- 10 14. A compound according to any one of claims 1 to 11 for use as therapeutically active substance.
15. A pharmaceutical composition comprising a compound in accordance with any one of claims 1 to 11 and a therapeutically inert carrier.
- 15 ~~16. The use of a compound according to any one of claims 1 to 11 for the treatment or prophylaxis of pain, neuropathic pain, asthma, osteoporosis, inflammation, psychiatric diseases, psychosis, oncology, encephalitis, malaria, allergy, immunological disorders, arthritis, gastrointestinal disorders, psychiatric disorders rheumatoid arthritis, psychosis or allergy.~~
- 20 ~~17~~16. The use of a compound according to any one of claims 1 to 11 for the preparation of a medicament for the treatment or prophylaxis of pain, neuropathic pain, asthma, osteoporosis, inflammation, psychiatric diseases, psychosis, oncology, encephalitis, malaria, allergy, immunological disorders, arthritis, gastrointestinal disorders, psychiatric disorders rheumatoid arthritis, psychosis or allergy.
- 25 ~~18~~17. A compound according to any one of claims 1 to 11 for the treatment or prophylaxis of pain, neuropathic pain, asthma, osteoporosis, inflammation, psychiatric diseases, psychosis, oncology, encephalitis, malaria, allergy, immunological disorders, arthritis, gastrointestinal disorders, psychiatric disorders rheumatoid arthritis, psychosis or allergy.

19. ~~A method for the treatment or prophylaxis of pain, neuropathic pain, asthma, osteoporosis, inflammation, psychiatric diseases, psychosis, oncology, encephalitis, malaria, allergy, immunological disorders, arthritis, gastrointestinal disorders, psychiatric disorders rheumatoid arthritis, psychosis or allergy, which method~~
5 ~~comprises administering an effective amount of a compound as defined in any one of claims 1 to 11 to a patient in need thereof.~~
