



(12) Translation of
European patent specification

(11) NO/EP 2858647 B1

NORWAY

(19) NO
(51) Int Cl.
A61K 31/454 (2006.01)
A61K 31/47 (2006.01)
A61K 31/496 (2006.01)
A61K 31/506 (2006.01)
A61K 31/519 (2006.01)
A61K 31/7105 (2006.01)
A61K 31/713 (2006.01)
A61P 27/16 (2006.01)
A61P 43/00 (2006.01)
C12N 15/113 (2010.01)

Norwegian Industrial Property Office

(21)	Translation Published	2018.10.15
(80)	Date of The European Patent Office Publication of the Granted Patent	2018.05.23
(86)	European Application Nr.	13727899.0
(86)	European Filing Date	2013.06.10
(87)	The European Application's Publication Date	2015.04.15
(30)	Priority	2012.06.08, US, 201261657460 P
(84)	Designated Contracting States:	AL ; AT ; BE ; BG ; CH ; CY ; CZ ; DE ; DK ; EE ; ES ; FI ; FR ; GB ; GR ; HR ; HU ; IE ; IS ; IT ; LI ; LT ; LU ; LV ; MC ; MK ; MT ; NL ; NO ; PL ; PT ; RO ; RS ; SE ; SI ; SK ; SM ; TR
(73)	Proprietor	Sensorion, 375 rue du Professeur Joseph Blayac, 34080 Montpellier, FR-Frankrike
(72)	Inventor	WERSINGER, Éric, 31 bis rue des Avant-Monts Résidence Le Saint-Saëns, F-34080 Montpellier, FR-Frankrike
(74)	Agent or Attorney	BRYN AARFLOT AS, Stortingsgata 8, 0161 OSLO, Norge

(54) Title **H4 RECEPTOR INHIBITORS FOR TREATING TINNITUS**

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Enclosed is a translation of the patent claims in Norwegian. Please note that as per the Norwegian Patents Acts, section 66i the patent will receive protection in Norway only as far as there is agreement between the translation and the language of the application/patent granted at the EPO. In matters concerning the validity of the patent, language of the application/patent granted at the EPO will be used as the basis for the decision. The patent documents published by the EPO are available through Espacenet (<http://worldwide.espacenet.com>) or via the search engine on our website here: <https://search.patentstyret.no/>

PATENTKRAV

1. Hemmer av histamin type 4-reseptor (H4R) for anvendelse ved behandling av tinnitus, hvori hemmeren av H4R er valgt fra:

- 1-[(5-klor-1H-indol-2-yl)karbonyl]-4-metylpipezazin,
- 5 - 4-((3R)-3-aminopyrrolidin-1-yl)-6,7-dihydro-5H-benzo[6,7]syklohepta[1,2-d]pyrimidin-2-ylamin,
- cis-4-(pipezazin-1-yl)-5,6,7a,8,9,10,11,11a-oktahydrobenzofuro[2,3-h]kinazolin-2-amin,
- 7-(furan-2-yl)-4-(pipezazin-1-yl)kinazolin-2-amin,
- 10 - 1-(7-(2-amino-6-(4-metylpipezazin-1-yl)pyrimidin-4-yl)-3,4-dihydroisokinolin-2(1H)-yl)-2-syklopentyletanon,
- 1-[(5-klor-1H-benzimidazol-2-yl)karbonyl]-4-metylpipezazinmaleat,
- N⁴-(syklopropylmetyl)-6-[(3R)-3-(metylamino)pyrrolidin-1-yl]pyrimidin-2,4-diamin,
- N⁴-(syklopropylmetyl)-6-[(3R)-3-(metylamino)pyrrolidin-1-yl]pyrimidin-2,4-
- 15 diamintartrat,
- (R)-4-(3-amino-pyrrolidin-1-yl)-6-isopropyl-pyrimidin-2-ylamin,
- 2-isobutyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
- 2-isobutyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
- 2-sykloheksylmetyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
- 20 - 2-(4-fluorbenzyl)-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
- 2-syklopropyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
- 2-tert-butyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
- 2-isopropyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
- 2-(syklopropylmetyl)-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
- 25 - 6-(3-(metylamino)azetidin-1-yl)-2-(fenoksymetyl)pyrimidin-4-amin,
- 2-syklopropyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
- 2-tert-butyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
- 2-isopropyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
- 6-((3R)-3-(metylamino)pyrrolidin-1-yl)-2-(fenoksymetyl)pyrimidin-4-amin,
- 30 - 6-(3-aminoazetidin-1-yl)-2-isobutylpyrimidin-4-amin,
- 2-isobutyl-6-(3-metyl-3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
- 6-((3R)-3-aminopyrrolidin-1-yl)-2-isobutylpyrimidin-4-amin,
- 2-syklobutyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
- 2-syklobutyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,

- 2-syklopentyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 2-syklopentyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
 - 2-(2,2-dimetylpropyl)-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 2-(2,2-dimetylpropyl)-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
 - 5 - 2-(2-syklopentyletyl)-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
 - 2-sykloheksylmetyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 2-syklopropylmetyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
 - 2-sykloheksyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 2-sykloheksyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin, og
 - 10 - 2-(4-fluorbenzyl)-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin.
2. Hemmeren ifølge krav 1, hvori hemmeren er:
- 1-[(5-klor-1H-indol-2-yl)karbonyl]-4-metyl piperazin,
 - 4-((3R)-3-aminopyrrolidin-1-yl)-6,7-dihydro-5H-benzo[6,7]syklohepta[1,2-d]pyrimidin-2-ylamin,
 - 15 - cis-4-(piperazin-1-yl)-5,6,7a,8,9,10,11,11a-oktahydrobenzofuro[2,3-h]kinazolin-2-amin,
 - 7-(furan-2-yl)-4-(piperazin-1-yl)kinazolin-2-amin,
 - 1-(7-(2-amino-6-(4-metyl piperazin-1-yl)pyrimidin-4-yl)-3,4-dihydroisokinolin-2(1H)-yl)-2-syklopentyletanon,
 - 20 - 1-[(5-klor-1H-benzimidazol-2-yl)karbonyl]-4-metyl piperazinmaleat,
 - N⁴-(syklopropylmetyl)-6-[(3R)-3-(metylamino)pyrrolidin-1-yl]pyrimidin-2,4-diamin,
 - N⁴-(syklopropylmetyl)-6-[(3R)-3-(metylamino)pyrrolidin-1-yl]pyrimidin-2,4-diamintartrat,
 - (R)-4-(3-amino-pyrrolidin-1-yl)-6-isopropyl-pyrimidin-2-ylamin, eller
 - 25 - 2-isobutyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin.
3. Hemmeren for anvendelse ifølge krav 1, hvori hemmeren er:
- 2-isobutyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 2-isobutyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
 - 2-sykloheksylmetyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
 - 30 - 2-(4-fluorbenzyl)-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 2-syklopropyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 2-tert-butyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 2-isopropyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 2-(syklopropylmetyl)-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,

- 6-(3-(metylamino)azetidin-1-yl)-2-(fenoksymetyl)pyrimidin-4-amin,
 - 2-syklopropyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
 - 2-tert-butyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
 - 2-isopropyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
 - 5 - 6-((3R)-3-(metylamino)pyrrolidin-1-yl)-2-(fenoksymetyl)pyrimidin-4-amin,
 - 6-(3-aminoazetidin-1-yl)-2-isobutylpyrimidin-4-amin,
 - 2-isobutyl-6-(3-metyl-3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 6-((3R)-3-aminopyrrolidin-1-yl)-2-isobutylpyrimidin-4-amin,
 - 2-syklobutyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 10 - 2-syklobutyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
 - 2-syklopentyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 2-syklopentyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
 - 2-(2,2-dimetylpropyl)-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 2-(2,2-dimetylpropyl)-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
 - 15 - 2-(2-syklopentyletyl)-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
 - 2-sykloheksylmetyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 2-syklopropylmetyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin,
 - 2-sykloheksyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin,
 - 2-sykloheksyl-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin, eller
 - 20 - 2-(4-fluorbenzyl)-6-((3R)-3-(metylamino)pyrrolidin-1-yl)pyrimidin-4-amin.
4. Hemmeren for anvendelse ifølge et hvilket som helst av kravene 1 til 3, hvori hemmeren er 2-isobutyl-6-(3-(metylamino)azetidin-1-yl)pyrimidin-4-amin.
5. Hemmeren for anvendelse ifølge krav 1 eller 2, hvori hemmeren er valgt fra:
- 1-[(5-klor-1H-indol-2-yl)karbonyl]-4-metylpipezazin,
 - 25 - 4-((3R)-3-aminopyrrolidin-1-yl)-6,7-dihydro-5H-benzo[6,7]syklohepta[1,2-d]pyrimidin-2-ylamin,
 - cis-4-(pipezazin-1-yl)-5,6,7a,8,9,10,11,11a-oktahydrobenzofuro[2,3-h]kinazolin-2-amin,
 - 7-(furan-2-yl)-4-(pipezazin-1-yl)kinazolin-2-amin,
 - 30 - 1-(7-(2-amino-6-(4-metylpipezazin-1-yl)pyrimidin-4-yl)-3,4-dihydroisokinolin-2(1H)-yl)-2-syklopentyletanon,
 - 1-[(5-klor-1H-benzimidazol-2-yl)karbonyl]-4-metylpipezazinmaleat,
 - N⁴-(syklopropylmetyl)-6-[(3R)-3-(metylamino)pyrrolidin-1-yl]pyrimidin-2,4-diamin,
 - N⁴-(syklopropylmetyl)-6-[(3R)-3-(metylamino)pyrrolidin-1-yl]pyrimidin-2,4-

diamintartrat, og

- (R)-4-(3-amino-pyrrolidin-1-yl)-6-isopropyl-pyrimidin-2-ylamin.

6. Farmasøytisk sammensetning som omfatter en hemmer av H4R ifølge et hvilket som helst av kravene 1 til 5 for anvendelse ved behandling av tinnitus.