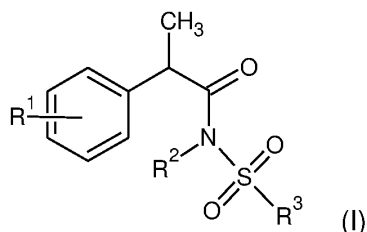


CLAIMS

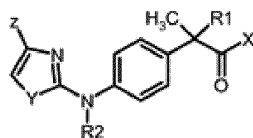
1. A CXCL8 inhibitor for use in the treatment of patients with COVID-19 pneumonia.
2. A CXCL8 inhibitor for use according to claim 1, wherein said inhibitor is for use in improving respiratory function in said patients, wherein said respiratory function is measured as partial arterial oxygen pressure (PaO₂) to fraction of inspiration O₂ (FiO₂) ratio.
3. A CXCL8 inhibitor for use according to claims 1 or 2, wherein said patients have values of partial arterial oxygen pressure (PaO₂) to fraction of inspiration O₂ (FiO₂) ratio before the treatment of the invention below 400 mmHg, more preferably between 100 and 300mmHg (wherein 1mmHg = 0.133kPa) and/or a respiratory rate of or above 30 breaths/min without oxygen supplementation.
4. A CXCL8 inhibitor for use according to claims 1 to 3, wherein said improving respiratory function comprises increasing partial arterial oxygen pressure (PaO₂) to fraction of inspiration O₂ (FiO₂) ratio of at least 20%, 50%, 80%, 100%, 120% 150%, 200% or 250% in comparison with the ratio before treatment.
- 5 A CXCL8 inhibitor for use according to claims 1 to 4, wherein said patients have lymphocytopenia.
6. A CXCL8 inhibitor for use according to claim 4, wherein said patients are adult patients (age of 14 years and above) and have blood concentration of lymphocytes below 1000, below 900, below 850, below 800 or below 750 cells/microliter or said patients are children (age below 14 years) and have blood concentration of lymphocytes below 3000, below 2800, below 2500, below 2300 or below 2000 cells/microliter.
7. A CXCL8 inhibitor for use according to claims 1 to 6, wherein said CXCL8 inhibitor is administered in combination with treatment with at least one drug selected from:
 - i) antiviral drugs, preferably remdesivir;
 - ii) antipyretic; analgesic and antiinflammatory drugs, preferably non-steroidal anti-inflammatory drugs, corticosteroids, cytokine, chemokine and interleukin inhibitors, more preferably selected from dexamethasone, paracetamol, anakinra, celecoxib, prednisone, prednisolone, methylprednisolone, piroxone, and tramadol;
 - iii) antibiotics, preferably selected from piperacillin in association with tazobactam, azithromycin and ceftriazone; and
 - iv) anti-coagulants and antithrombotic drugs, preferably selected from enoxaparin and acetylsalicylic acid.
8. A CXCL8 inhibitor for use as claimed in claims 1 to 7, wherein said CXCL8 inhibitor inhibits the activity of CXCL8 mediated by CXCR1 receptor or mediated by both CXCR1 and CXCR2 receptors.

9. A CXCL8 inhibitor for use as claimed in claims 1 to 8, wherein said CXCL8 inhibitor is a compound of formula (I):



wherein

- 5 R¹ is selected from a linear or branched C₁-C₆ alkyl, benzoyl, phenoxy, and trifluoromethanesulfonyloxy;
 R² is selected from hydrogen atom and linear or branched C₁-C₃ alkyl; and
 R³ is a linear or branched C₁-C₆ alkyl or trifluoromethyl,
 or a pharmaceutically acceptable salt thereof.
- 10 10. A CXCL-8 inhibitor for use as claimed in claims 1 to 9, selected from:
 - 2-(4-isobutylphenyl)propionyl methansulfonamide, preferably R-(-)-2-(4-isobutylphenyl)propionyl methansulfonamide and pharmaceutically acceptable salts thereof, preferably the lysine salt thereof, and
 - 2-(4-trifluoromethanesulfonyloxy)phenyl]-N-methanesulfonyl propionamide, preferably
 15 R-(-)-2-(4-trifluoromethanesulfonyloxy)phenyl]-N-methanesulfonyl propionamide and pharmaceutically acceptable salts thereof, in particular the sodium salt thereof.
11. A CXCL-8 inhibitor for use as claimed in claims 1 to 10, which is R-(-)-2-(4-isobutylphenyl)propionyl methansulfonamide, wherein said inhibitor is administered to
 said patient intravenously at a dose between 2 and 3 mg/kg body weight/hour, preferably
 20 of 2.772 mg/kg body weight/hour, for 5 days.
12. A CXCL8 inhibitor for use as claimed in claims 1 to 8, wherein said CXCL8 inhibitor is a compound of formula (II):



(II)

and pharmaceutically acceptable salts thereof, wherein:

- 25 R¹ is hydrogen;
 X is OH;

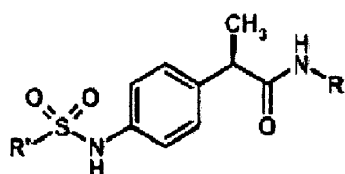
R₂ is hydrogen or linear C₁-C₄ alkyl,

Y is a heteroatom selected from S, O and N,

Z is selected from linear or branched C₁-C₄ alkyl, linear or branched C₁-C₄ alkoxy, halo C₁-C₃ alkyl and halo C₁-C₃ alkoxy.

5 13. A CXCL-8 inhibitor for use as claimed in claims 1 to 8 and 12, which is 2-(4-[[4-(trifluoromethyl)-1,3-thiazol-2-yl]amino}phenyl)propanoic acid, preferably (2S)-2-(4-[[4-(trifluoromethyl)-1,3-thiazol-2-yl] amino} phenyl) propanoic acid or the sodium salt thereof.

10 14. A CXCL8 inhibitor for use as claimed in claims 1 to 8, wherein said CXCL8 inhibitor is a compound of formula (III):



(III)

and pharmaceutically acceptable salts thereof, wherein:

R is selected from

15 H, OH, C₁-C₅-alkyl, C₃-C₆-cycloalkyl, C₂-C₅-alkenyl, C₁-C₅-alkoxy and phenyl, a heteroaryl group selected from unsubstituted pyrrole, thiophene, furane, indole, imidazole, thiazole, oxazole, pyridine and pyrimidine, a residue of formula CH₂CH₂O(CH₂CH₂)_nR'', wherein R'' is H or C₁-C₅ alkyl and n is an integer from 0 to 2;

20 R' is selected from

- linear or branched C₁-C₅-alkyl, C₃-C₆-cycloalkyl, C₂-C₅-alkenyl and trifluoromethyl;
- phenyl unsubstituted or substituted with a group selected from halogen, C₁-C₄ alkyl, C₁-C₄ alkoxy, trifluoromethyl;
- unsubstituted benzyl;
- 25 - an heteroaryl group selected from unsubstituted pyridine, pyrimidine, pyrrole, thiophene, furane, indole, thiazole and oxazole.

15. A CXCL8 inhibitor for use as claimed in claim 14, which is 2-{4[(isopropylsulfonyl)amino]phenyl} propanamide, preferably (2R)-2-{4[(isopropylsulfonyl)amino]phenyl} propanamide, and pharmaceutically acceptable salts thereof, preferably the sodium salt thereof

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16. Pharmaceutical composition comprising (i) a CXCL8 inhibitor, a salt thereof with a pharmaceutically acceptable organic or inorganic acid or base, or a prodrug thereof, as

defined in any one of claims 1 to 15, and (ii) at least one inert pharmaceutically acceptable excipient, for use in the treatment of patients with COVID-19 pneumonia.