

CLAIMS

1. A Functional Inhibitor of Acid SphingoMyelinAse (FIASMA) agent for use for preventing or treating a viral infection due to at least one betacoronavirus in a patient in need thereof.
- 5 2. The FIASMA agent for use according to claim 1, wherein the betacoronavirus is a Severe Acute Respiratory Syndrome-related coronavirus (SARS-CoV), in particular SARS-CoV-2.
3. The FIASMA agent for use according to claim 2, for preventing or treating patients suffering from a symptomatic COVID-19 disease, and in particular from a strong
10 or severe symptomatic COVID-19 disease.
4. The FIASMA agent for use according to any one of claims 1 to 3, for preventing and/or treating acute respiratory distress syndrome associated to said viral infection.
5. The FIASMA agent for use according to any one of claims 1 to 4, for
15 lowering the risk of intubation or for increasing the survival rate of patients infected by said betacoronavirus.
6. The FIASMA agent for use according to any one of claims 1 to 5, wherein said agent can directly inhibit the activity of the ASM enzyme (EC 3.1.4.12).
7. The FIASMA agent for use according to any one of claims 1 to 5, wherein
20 said agent can reduce the ceramide level at the surface of epithelial cells.
8. The FIASMA agent for use according to any one of claims 1 to 5, wherein said agent can indirectly inhibit the activity of the ASM enzyme (EC 3.1.4.12), for example by displacing the enzyme from lysosomal membranes and cause their degradation.
- 25 9. The FIASMA agent for use according to any one of claims 1 to 5, wherein said agent can directly neutralize surficial ceramide by interacting with same.

10. The FIASMA agent for use according to any one of claims 1 to 5, said FIASMA agent being an antidepressant.

11. The FIASMA agent for use according to claim 10, said antidepressant being fluoxetine or fluvoxamine or a pharmaceutical salt thereof.

5 12. The FIASMA agent for use according to claim 10, wherein said antidepressant is chosen in the group consisting of: Amitriptyline, Sertraline, Clomipramine, Duloxetine, Paroxetine, Escitalopram, Citalopram, Venlafaxine and Mirtazapine, or a pharmaceutical salt thereof.

10 13. The FIASMA agent for use according to claim 10, wherein said antidepressant is chosen in the group consisting of: Protriptyline, Nortriptyline, Maprotiline, Trimipramine, Desipramine, Lofepramine, Imipramine, and Doxepin, or a pharmaceutical salt thereof.

15 14. The FIASMA agent for use according to claim 10, wherein said antidepressant is chosen in the group consisting of: fluoxetine, citalopram, escitalopram, clomipramine, duloxetine, mirtazapine, venlafaxine, sertraline, paroxetine, and fluvoxamine, or a pharmaceutical salt thereof.

20 15. The FIASMA agent for use according to any of claim 1 to 14, wherein it is administered at an effective Fluoxetine-equivalent dose comprised between about 5 mg/day and about 60 mg/day, preferably between about 20 mg/day and about 40 mg/day, in patients in need thereof.

25 16. The FIASMA agent for use according to any one of claims 1 to 5, wherein said agent is an antipsychotic selected in the group consisting of: Triflupromazine, Trifluoperazine, Thioridazin, Sertindole, Fluphenazine, Flupenthixol, Perphenazine, Aripiprazole, Penfluridol Chlorprothixene, Pimozide, Promazine, and Chlorpromazine or a pharmaceutical salt thereof.

17. The FIASMA agent for use according to any one of claims 1 to 5, wherein said agent is an anti-histaminic agent selected in the group consisting of: Astemizole,

Clemastine, Cyproheptadine, Desloratadine, Loratadine, Promethazine, Hydroxyzine and Terfenadine, or a pharmaceutical salt thereof.

18. The FIASMA agent for use according to any one of claims 1 to 5, wherein said agent is an anti-histaminic agent selected in the group consisting of: Mebhydrolin
5 and Pimethixene, or a pharmaceutical salt thereof.

19. The FIASMA agent for use according to any of claim 1-5, wherein it is chosen in the group consisting of: Cinnarizine, Flunarizine, Benztropine, Biperidene, Profenamine, Emetine, Quinacrine, Amlodipine, Bepridil, Fendiline, Mibefradil, Perhexiline, Carvedilol, Amiodarone, Aprindine, Alverine, Camylofin, Dicycloverine,
10 Mebeverine, Cinnarizine, Flunarizine, Conessine, Solasodine, Tomatidine, Dilazep, Suloctidil, Cloperastine, Loperamide, Clofazimine, Tamoxifen and Cyclobenzaprine, or a pharmaceutical salt thereof.

20. The FIASMA agent for use according to any of claim 1-5, wherein it is ambroxol.

- 15 21. The FIASMA agent for use according to any of claim 1-5, wherein it is chosen in the group consisting of: Diazepam, Fluoxetine, Fluvoxamine, Amitriptyline, Sertraline, Clomipramine, Duloxetine, Paroxetine, Escitalopram, Citalopram, Venlafaxine, Mirtazapine, Dosulepin, Vortioxetin, Milnacipran, Protriptyline, Nortriptyline, Maprotiline, Trimipramine, Desipramine, Lofepramine, Imipramine,
20 Doxepin, Triflupromazine, Trifluoperazine, Thioridazin, Sertindole, Fluphenazine, Flupenthixol, Perphenazine, Aripiprazole, Penfluridol Chlorprothixene, Pimozide, Promazine, Chlorpromazine, Ambroxol, Astemizole, Clemastine, Cyproheptadine, Desloratadine, Loratadine, Promethazine, Hydroxyzine, Terfenadine, Mebhydrolin, Pimethixene, Cinnarizine, Flunarizine, Benztropine, Biperidene, Profenamine, Emetine,
25 Quinacrine, Amlodipine, Bepridil, Fendiline, Mibefradil, Perhexiline, Carvedilol, Amiodarone, Aprindine, Alverine, Camylofin, Dicycloverine, Dicyclomine, Mebeverine, Cinnarizine, Flunarizine, Conessine, Solasodine, Tomatidine, Dilazep, Suloctidil, Clomifene, Cloperastine, Loperamide, Clofazimine, Tamoxifen, and Cyclobenzaprine, or a pharmaceutical salt thereof.