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Published:

- with international search report (Art. 21(3))
- in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE

(54) Title: SMALL MOLECULE INHIBITORS OF SARS-COV2 MAIN PROTEASE

(57) Abstract: Disclosed are therapeutic compositions for the prevention, amelioration and/or treatment of infectious disease, including, but not limited to, SARS-COV2.



WO 2022/106984 A3

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER INV. A61K31/4985 A61K31/519 A61K31/554 A61P31/14 ADD . According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) A61K A61P Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal, WPI Data, CHEM ABS Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	LU ZHENG, ET AL.: "Potential treatment methods targeting 2019-nCoV infection", EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY, vol. 205, 112687, 28 July 2020 (2020-07-28), XP086277986, Elsevier Masson, Paris, FR ISSN: 0223-5234, DOI: 10.1016/j.ejmech.2020.112687 section 5; tables 1, 2; compounds 11a, 11b, 13b <div style="text-align: center;">----- -/--</div>	1-9
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents :		
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family	
Date of the actual completion of the international search	Date of mailing of the international search report	
23 February 2022	17/03/2022	
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer English, Russell	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2021/060572

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2021/060572

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
<p>A</p>	<p>D.L. MCKEE, ET AL.: "Candidate drugs against SARS-CoV-2 and COVID-19", PHARMACOLOGICAL RESEARCH, vol. 157, 104859, 29 April 2020 (2020-04-29), XP086154221, Elsevier, Oxford, GB ISSN: 1043-6618, DOI: 10.1016/j.phrs.2020.104859 section 3.5; table 1</p> <p style="text-align: center;">-----</p>	<p>1-9</p>

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9

Compounds for use in the treatment of SARS-CoV-2

1.1. claims: 1, 2 (completely); 7-9 (partially)

Compounds of formula I for use in the treatment of SARS-CoV-2

1.2. claims: 3, 4 (completely); 7-9 (partially)

Compounds of formula III and IV for use in the treatment of SARS-CoV-2

1.3. claims: 5, 6 (completely); 7-9 (partially)

Compounds of formula V and VI for use in the treatment of SARS-CoV-2
