

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 78927WO003	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2017/068213	International filing date (<i>day/month/year</i>) 22 December 2017 (22-12-2017)	(Earliest) Priority Date (<i>day/month/year</i>) 28 December 2016 (28-12-2016)
Applicant 3M INNOVATIVE PROPERTIES COMPANY		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

- the international application in the language in which it was filed
 a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (See Box No. II)

3. **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

- the text is approved as submitted by the applicant
 the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- the text is approved as submitted by the applicant
 the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 1
 as suggested by the applicant
 as selected by this Authority, because the applicant failed to suggest a figure
 as selected by this Authority, because this figure better characterizes the invention
- b. none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2017/068213

A. CLASSIFICATION OF SUBJECT MATTER
INV. C12M1/12 C12Q1/04
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)
C12Q C12M

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, BIOSIS, COMPENDEX, EMBASE, FSTA, INSPEC, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 409 838 A (WICKERT PETER D [US]) 25 April 1995 (1995-04-25) cited in the application column 3, line 49 - column 4, line 62 figure 1; examples 1,9 -----	1-17
A	US 5 232 838 A (NELSON ROBERT L [US] ET AL) 3 August 1993 (1993-08-03) cited in the application column 3, line 1 - line 31 column 5, line 43 - column 6, line 21 figures 1, 3; tables I,II -----	1-17
A	US 2013/084624 A1 (WAKU SHIN-ICHI [JP] ET AL) 4 April 2013 (2013-04-04) the whole document -----	1-17

Further documents are listed in the continuation of Box C.

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
15 March 2018

Date of mailing of the international search report
26/03/2018

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2017/068213

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5409838	A	25-04-1995	NONE
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US 5232838	A	03-08-1993	AU 3062692 A 19-07-1993
			CA 2124207 A1 24-06-1993
			DE 69207430 D1 15-02-1996
			DE 69207430 T2 12-09-1996
			DK 0620844 T3 20-05-1996
			EP 0620844 A1 26-10-1994
			ES 2082522 T3 16-03-1996
			HK 1007764 A1 23-04-1999
			JP 3383304 B2 04-03-2003
			JP H07501943 A 02-03-1995
			NZ 245136 A 27-06-1995
			US 5232838 A 03-08-1993
			WO 9312218 A1 24-06-1993
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			EP 2530141 A1 05-12-2012
			JP 5803677 B2 04-11-2015
			JP W02011093342 A1 20-06-2013
			KR 20120121904 A 06-11-2012
			US 2013084624 A1 04-04-2013
			WO 2011093342 A1 04-08-2011
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