

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference BGU-P-76-PCT	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/IL2018/050863	International filing date (<i>day/month/year</i>) 02 Aug 2018	(Earliest) Priority Date (<i>day/month/year</i>) 02 Aug 2017
Applicant B. G. NEGEV TECHNOLOGIES AND APPLICATIONS LTD., AT BEN-GURION UNIVERSITY		

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 4 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 43.6bis(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. I

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.

Box No. 1 Nucleotide and/or amino acid sequence(s) (Continuation of item 1.c of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of a sequence listing:
- a. forming part of the international application as filed:
 in the form of an Annex C/ST.25 text file.
 on paper or in the form of an image file.
- b. furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
- c. furnished subsequent to the international filing date for the purposes of international search only:
 in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
2. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL2018/050863

A. CLASSIFICATION OF SUBJECT MATTER

IPC (2018.01) C07K 19/00, C12N 15/62, C12Q 1/32, G01N 33/66

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)

IPC (2018.01) C07K 19/00, C12N 15/62, C12Q 1/32, G01N 33/66

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)

Databases consulted: NCBI, Google Patents, CAPLUS, BIOSIS, EMBASE, MEDLINE, REGISTRY, Google Scholar

Search terms used: FAD-GDH, cytochrome, direct electron transfer, electrode, glucose, SEQ ID NOs: 3, 9

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2017121751 A1 ARKRAY, Inc. ; Ultizyme International Ltd 04 May 2017 (2017/05/04) description paragraphs [0006-0008], [0082-0093], [0098-0101], [0112-0114]	1-44
Y	WO 2017094776 A1 KIKKOMAN CORP 08 Jun 2018 (2018/06/08) whole document, especially claims 1-14	1-44
Y	Yamaoka, H., Yamashita, Y., Ferri, S., & Sode, K. (2008). Site directed mutagenesis studies of FAD-dependent glucose dehydrogenase catalytic subunit of Burkholderia cepacia. Biotechnology letters, 30(11), 1967-1972. 26 Jun 2008 (2008/06/26) pages 1967-1968	3,4
Y	Simone, A. D. (2016). Engineering the genetic code of Escherichia coli with methionine analogues and bioorthogonal amino acids for protein immobilization. 17 Jun 2018 (2018/06/17) pages 71-74, figs. 47 and 48	22,32,33

 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

17 Oct 2018

Date of mailing of the international search report

28 Oct 2018

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No. PCT/IL2018/050863
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Patent document cited search report	Publication date	Patent family member(s)	Publication Date
US 2017121751 A1	04 May 2017	US 2017121751 A1	04 May 2017
		CN 107058249 A	18 Aug 2017
		EP 3162893 A1	03 May 2017
		JP 2017079721 A	18 May 2017
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WO 2017094776 A1	08 Jun 2018	WO 2017094776 A1	08 Jun 2017
		JP WO2017094776 A1	27 Sep 2018
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