

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 054232-00031		<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US20/23818	International filing date ( <i>day/month/year</i> ) 20 March 2020 (20.03.2020)	(Earliest) Priority Date ( <i>day/month/year</i> ) 22 March 2019 (22.03.2019)	
Applicant Nephron Pharmaceuticals Corporation			

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. 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.

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**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:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fee must be paid.

Group I: Claims 1-27 are directed towards a method authenticating a network packet by recovering a dual payload using a member of a list of public keys.

Group II: Claims 28-51 are directed towards a system for remote management of patient compliance pushing packets to network coordinates.

\*\*\*-Continued in extra 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 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.:  
Group I: Claims 1-27

**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

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC - H04L 29/06, 29/04; G06F 21/62; G16H 50/70 (2020.01)

CPC - H04L 63/0457, 63/0421, 63/166; G06F 21/62; G16H 50/70

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)

See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

See Search History document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

See Search History document

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2017/0272410 A1 (MPH TECHNOLOGIES OY) 21 September 2017; para [0040], [0042], [0084], [0086], [0131]	1-27
Y	WO 2018/201009 A1 (ANONOS INC.) 01 November 2018; para [014], [035], [053], [0223], [0375]; claim 1	1-27
Y	US 2017/0259050 A1 (POP TEST LLC) 14 September 2017; abstract	12
Y	US 7634995 B2 (GRYCHOWSKI, J et al.) 22 December 2009; column 7, line 15-31	16
Y	US 2018/0094953 A1 (COLSON, S et al.) 05 April 2018; para [0127], [0180]	18
Y	US 2011/0173452 A1 (NAN, X et al.) 14 July 2011; para [0110], [0244], [0245]	21-26

 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

"D" document cited by the applicant in the international application

"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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

14 May 2020 (14.05.2020)

Date of mailing of the international search report

19 AUG 2020

Name and mailing address of the ISA/US

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## INTERNATIONAL SEARCH REPORT

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-\*\*\*-Continued from Box No. III - Observations where unity of invention is lacking-\*\*\*-

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical features of Group I include at least a method for processing data from mobile medical devices, comprising: receiving a network packet, the network packet comprising a first digital signature; authenticating the network packet by recovering the dual payload from at least the first digital signature using a member of a list of public keys assigned to authorized data sources; using the member of the list of public keys to identify a patient; inserting the anonymous data into a record for the patient in a privacy-compliant database; and pushing the anonymous data to a distributed ledger without any patient identification information, which are not present in Group II.

The special technical features of Group II include at least a system for remote management of patient compliance, comprising: a processor; a non-transitory computer readable memory in communication with the processor; a data source in communication with the processor; a reference to predetermined network coordinates stored in the memory; use instructions for treating a medical condition stored in the memory, and program code stored in the memory, the program code executable by the processor to perform data communication operations, the data communication operations comprising: processing signals from the data source to obtain device data; inserting dual payloads and device signatures applied to the dual payloads into network packets; device signatures applied to the hashes; and pushing the network packets to the predetermined network coordinates in response to internally-generated prompts, which are not present in Group I.

The common technical features shared by Groups I-II are a mobile medical device; a first payload of the dual payload; a second payload of the dual payload comprising a digital signature and a hash.

However, these common features are previously disclosed by US 2019/0036688 A1 to THIRDMWAYV, INC. (hereinafter "THIRDMWAYV"). THIRDMWAYV discloses a mobile medical device (mobile device communicating with a glucose monitor; para [0023]); a first payload of the dual payload (communicating one or more payloads (first of the dual payload); para [0102]); a second payload of the dual payload comprising a digital signature and a hash (communicating one or more payloads (second of the dual payload) comprising a digital signature computing using a secure hash output value; para [0102]).

Since the common technical features are previously disclosed by THIRDMWAYV, these common features are not special and so Groups I-II lack unity.