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Published:

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

[Continued on next page]

(54) Title: IMMUNOTHERAPY SYSTEM AND METHOD THEREOF

(57) Abstract: An aspect of the invention generally relates to an immunotherapy system and method thereof, and more particularly to a method and system for providing, generating, tracking an immunotherapy treatment.

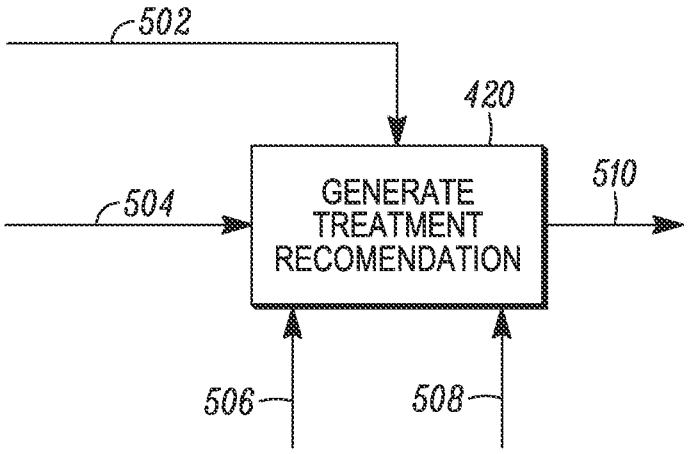


FIG. 5

WO 2014/145897 A3

(88) Date of publication of the international search report:
20 November 2014

INTERNATIONAL SEARCH REPORT

International application No.
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A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06F 17/00; G06Q 50/22, 50/24 (2014.01)

USPC - 128/923; 600/556; 705/3 CPC: G06F 19/324, 19/345; Y10S 128/92

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(8): A61K 39/35, 39/36; G06F 17/00, 17/30; G06Q 10/00, 50/00, 50/22, 50/24 (2014.01) USPC: 128/920, 923; 424/275.1; 600/300, 556; 705/2, 39 CPC: G06F 19/30; G06F 19/324; G06F 19/345; G06F 19/363; G06Q 50/22; Y10S 128/92

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)

MicroPatent (US-G, US-A, EP-A, EP-B, WO, JP-bib, DE-C,B, DE-A, DE-T, DE-U, GB-A, FR-A); Google Scholar; ProQuest; IP.com; generate, provide, immunotherapy, regimen, therapy, care, cancer, antibody, vaccine, recommendation, suggest, patient, input, pollen, medical history, individual, personal, preference, medication, preexisting condition, immune response, treatment, processor, computer

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2005/0234306 A1 (SCHULTE, M et al.) 20 October 2005; figures 1, 3; paragraphs [0001]-[0002], [0012]-[0014], [0016]-[0017], [0022]-[0023], [0028]-[0033], [0036]-[0037], [0048], [0051], [0067], [0090], [0100]-[0101], [0118]-[0119], [0121], [0127], [0129], [0132]-[0133], [0135], [0141], [0145], [0171]-[0173]	1-4, 6, 8, 10-18 --- 5, 7, 9
Y	US 2012/0003259 A1 (CHUA, KY et al.) 05 January 2012; paragraphs [0067], [0084], [0092], [0101]-[0102], [0112], [0513], [0530], [0644]	5, 7
Y	US 2009/0162383 A1 (PADLAN, EA) 25 June 2009; paragraphs [0093]-[0094]	9
P, Y	WO 2013/086619 A1 (DANTER, WR) 20 June 2013; entire document	1, 18
A	US 2011/0014231 A1 (ARIAD, S et al.) 20 January 2011; entire document	1, 18
A	US 2006/0218010 A1 (MICHON, F et al.) 28 September 2006; entire document	1, 18
A	US 2006/0031100 A1 (HUBER, BJ) 09 February 2006; entire document	1, 18
A	US 7,577,573 B2 (JANAS, III, JJ et al.) 18 August 2009; entire document	1, 18

☐ Further documents are listed in the continuation of Box C. ☐

* 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
14 July 2014 (14.07.2014)	19 SEP 2014
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Shane Thomas PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US14/30743

0114/030743 19.09.2014

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 fees must be paid.

Group I: Claims 1-18 are directed toward a method and system for generating a patient specific immunotherapy treatment recommendation.

Group II: Claims 19-59 are directed toward system for managing immunotherapy.

-***-Continued Within the Next Supplemental Box-***-

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.:
1-18

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/US14/30743

-***-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 receiving, from one or more location, a first input comprising information indicative of a patient medical history; receiving, from one or more location, a second input comprising information having characteristics indicative of one or more of science factors; receiving, from one or more location, a third input comprising information having characteristics indicative a patient's immune response to one or more antigens of a test; and a processor configured to process the first input, the second input and the third input to determine an immunotherapy treatment recommendation, which are not present in Group II; the special technical features of Group II include wherein the server is configured to provide the immunotherapy treatment recommendation to the provider device over the network; and wherein the server is configured to receive a verification of the immunotherapy treatment recommendation from the provider device over the network, which are not present in Group I.

The common technical features of Groups I-II are a method for generating a patient specific immunotherapy treatment recommendation at one or more devices, and generating, using a processor, an immunotherapy treatment recommendation from one or more inputs.

These common technical features are disclosed by US 2005/0234306 A1 to Schulte, et al. (hereinafter 'Schulte'). Schulte discloses a method for generating a patient specific immunotherapy treatment recommendation at one or more devices (a method for establishing (generating) suitable patient immunotherapy (immunotherapy treatment) proposals (recommendations) with computers (devices) based on data belonging specifically to a patient (patient specific recommendation) ; paragraphs [0001]-[0002], [0023], [0067], [0090]), and generating, using a processor, an immunotherapy treatment recommendation from one or more inputs (establishing (generating) suitable patient immunotherapy (immunotherapy treatment) proposals (recommendations) with computers (processors) based (from) on a patient's anamnesis answers (one or more inputs); paragraphs [0001]-[0002], [0012]-[0014], [0016], [0067], [0090]).

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