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NOTICE OF ALLOWANCE AND FEE(S) DUE

49556 7590 11/09/2022
NASSER ASHGRIZ
7805 Bayview Ave.
# 1510
Thornhill, ONTARIO L3T 7N1
CANADA

Table with 2 columns: EXAMINER (PAK, HANNAH J), ART UNIT (1764), PAPER NUMBER

DATE MAILED: 11/09/2022

Table with 5 columns: APPLICATION NO. (17/742,500), FILING DATE (05/12/2022), FIRST NAMED INVENTOR (JAVAD KARIMI), ATTORNEY DOCKET NO. (707-202011-02), CONFIRMATION NO. (6893)

TITLE OF INVENTION: METHOD FOR PRODUCTION OF ANTIMICROBIAL POLYMERS

Table with 7 columns: APPLN. TYPE (nonprovisional), ENTITY STATUS (MICRO), ISSUE FEE DUE (\$300), PUBLICATION FEE DUE (\$0.00), PREV. PAID ISSUE FEE (\$0.00), TOTAL FEE(S) DUE (\$300), DATE DUE (02/09/2023)

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies. If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above. If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)". For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

**PART B - FEE(S) TRANSMITTAL**

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**

By fax, send to: **(571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the **ISSUE FEE** and **PUBLICATION FEE** (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

49556                      7590                      11/09/2022  
**NASSER ASHGRIZ**  
**7805 Bayview Ave.**  
**# 1510**  
**Thornhill, ONTARIO L3T 7N1**  
**CANADA**

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17742,500	05/12/2022	JAVAD KARIMI	707-202011-02	6893

TITLE OF INVENTION: **METHOD FOR PRODUCTION OF ANTIMICROBIAL POLYMERS**

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	MICRO	\$300	\$0.00	\$0.00	\$300	02/09/2023

EXAMINER	ART UNIT	CLASS-SUBCLASS
PAK, HANNAH J	1764	527-300000

<p>1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).</p> <p><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.</p> <p><input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. <b>Use of a Customer Number is required.</b></p>	<p>2. For printing on the patent front page, list</p> <p>(1) The names of up to 3 registered patent attorneys or agents OR, alternatively, _____ 1</p> <p>(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. _____ 2</p> <p>_____ 3</p>
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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE \_\_\_\_\_ (B) RESIDENCE: (CITY and STATE OR COUNTRY) \_\_\_\_\_

Please check the appropriate assignee category or categories (will not be printed on the patent) :  Individual  Corporation or other private group entity  Government

4a. Fees submitted:  Issue Fee  Publication Fee (if required)  Advance Order - # of Copies \_\_\_\_\_

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

Electronic Payment via EFS-Web  Enclosed check  Non-electronic payment by credit card (Attach form PTO-2038)

The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. \_\_\_\_\_

5. Change in Entity Status (from status indicated above)

- Applicant certifying micro entity status. See 37 CFR 1.29
- Applicant asserting small entity status. See 37 CFR 1.27
- Applicant changing to regular undiscounted fee status.

**NOTE:** Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.  
**NOTE:** If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.  
**NOTE:** Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

**NOTE:** This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_



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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
Row 1: 17/742,500, 05/12/2022, JAVAD KARIMI, 707-202011-02, 6893
Row 2: 49556, 7590, 11/09/2022, NASSER ASHGRIZ, 7805 Bayview Ave., # 1510, Thornhill, ONTARIO L3T 7N1, CANADA
Row 3: EXAMINER PAK, HANNAH J
Row 4: ART UNIT 1764, PAPER NUMBER
Row 5: DATE MAILED: 11/09/2022

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

### Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

<b>Notice of Allowability</b>	<b>Application No.</b> 17/742,500	<b>Applicant(s)</b> KARIMI et al.	
	<b>Examiner</b> HANNAH J PAK	<b>Art Unit</b> 1764	<b>AIA (FITF) Status</b> Yes

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to an after non-final response submitted by applicants on 09//27/2022.  
 A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_\_.
2.  An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_\_; the restriction requirement and election have been incorporated into this action.
3.  The allowed claim(s) is/are 1 and 19 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

- a)  All      b)  Some\*      c)  None of the:
1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_ .
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
 including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_ .  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                  |
| 2. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____.          | 6. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| 3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material _____. | 7. <input type="checkbox"/> Other _____.   |
| 4. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date. <u>10/25/2022.</u>    |  |

/HANNAH J PAK/  
Primary Examiner, Art Unit 1764

*Notice of Pre-AIA or AIA Status*

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.
2. The instant application is made special under the patent prosecution highway (PPH). All the information provided under PPH has been taken into account.

**DETAILED ACTION**

**EXAMINER'S AMENDMENT**

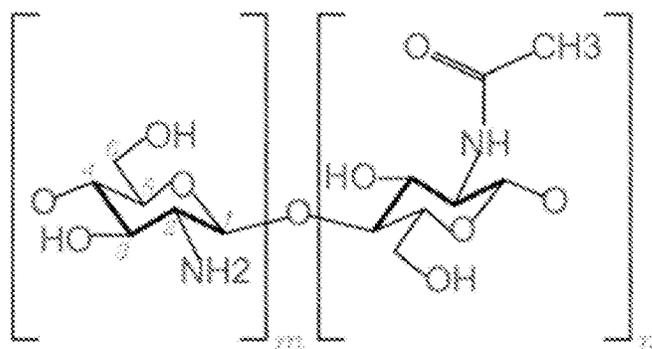
3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Nasser Ashgriz on October 25, 2022.

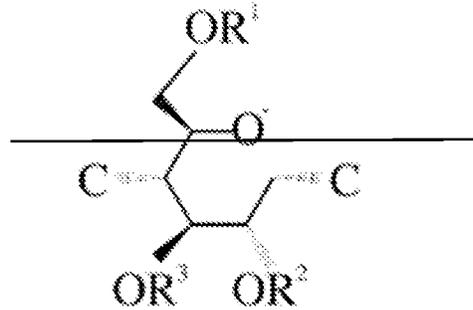
**The application has been amended as follows:**

Claim 1 is amended as follows:

1. (Currently Amended) An inclusion complex, referred to as Z-Chitosan, formed by interaction in solvent between: Chitosan bearing hydrophobic groups of the formula

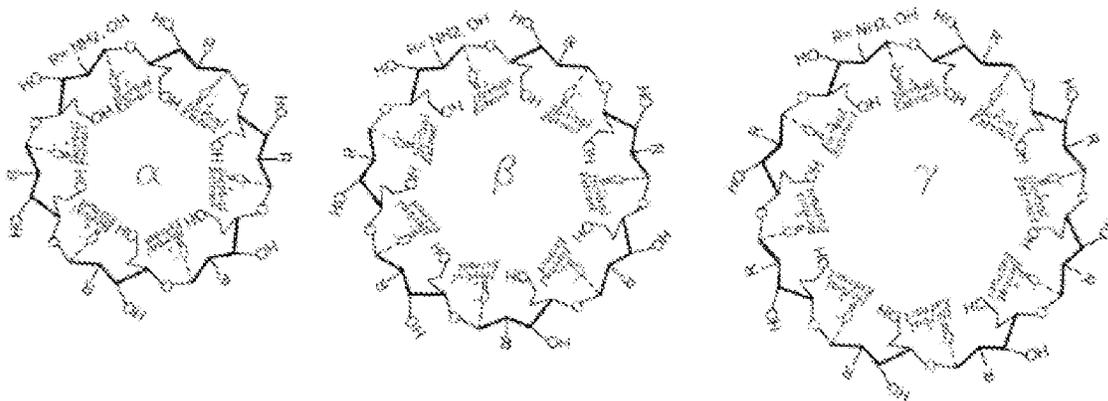


wherein m is the number of D-glucosamine units, and n is the number of N-acetyl-D-glucosamine units of Chitosan, [[wherein Z-Chitosan is processed using a catalyst to form]] in which a negatively charged oxygen atom is formed from breaking the -O- group in between C5 and C1 of an internal 5C-O cycle of Chitosan [[to form]],



[[wherein R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> comprise of hydrogen and carbon atoms of other Chitosan molecules, or carbon atoms of a herbal extract molecules,]]

and at least one herbal extract, in the presence of [[the]] a catalyst, is attached to the negatively charged atom[[s]] in [[a]] cyclic oligomers of D-glucosamine and/or N-acetyl-D-glucosamine joined together in three forms of  $\alpha$ ,  $\beta$ , and  $\gamma$  cycles formed respectively from 6, 7, or 8 subunits in a truncated cone delimiting a cavity at its center, and in which the at least one herbal extract is attached to the negatively charged oxygen atom to form:



wherein  $\alpha$ ,  $\beta$ , and  $\gamma$  cycles correspond to 6, 7, and 8 subunits, respectively.

*Written descriptive support for this amendment is found at pages 5-6, paragraph [10] of the specification as originally filed.*

Claims 15-18 are cancelled as follows:

15. (Cancelled).
16. (Cancelled).
17. (Cancelled).
18. (Cancelled).

Claim 20 and 21 are cancelled as follows:

20. (Cancelled).
21. (Cancelled).

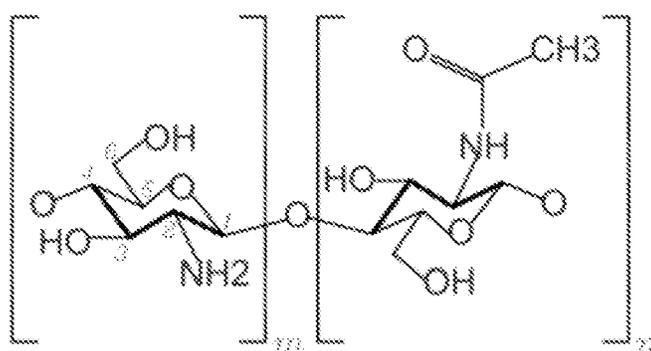
Abstract of Disclosure is amended as follows:

The present invention is [[an inclusion to produce Chitosan and herbal extract]] a product and process to produce a new inclusion of a Chitosan-based compound and herbal extract, to provide consistent and long-lasting antimicrobial, antiviral, antibacterial, antifungal, anti-spore, and anti-odor characteristics. [[The present Chitosan is processed using a catalyst to form a negatively charged oxygen atom originating from the -O-groups in between C5 and C1 of an internal 5C-O cycle of Chitosan. This provides a stronger bond, which makes the inclusion more stable than prior chitosan based inclusions]].

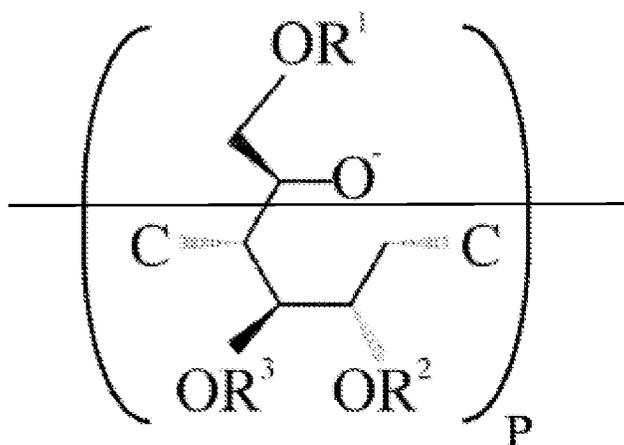
Written descriptive support for this amendment is found at page 5, paragraph [9], of the specification as originally filed.

Paragraph [10] of the present specification is amended as follows:

[10] Z-Chitosan is formed from regular Chitosan which has the following form (Formula 1)



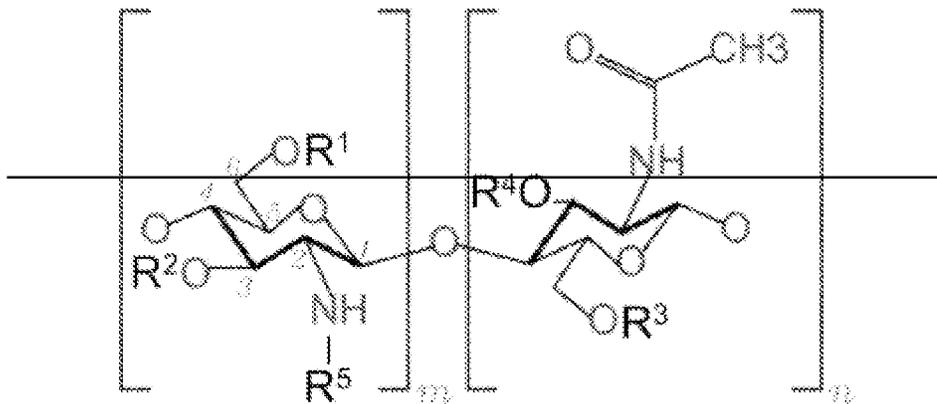
[[wherein m is the number of D-glucosamine units, and n is the number of N-acetyl-D-glucosamine units of Chitosan, wherein Z-Chitosan is processed by means of the presence of catalysts to form one bond between the oxygen atom and C5 or C1 atoms in the internal 5C-O cycle of Chitosan is broken to form (Formula 24)]]



[[Formula 4]]

[[wherein R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are identical or not identical, and comprise of hydrogen and carbon atoms of other Chitosan molecules, or carbon atoms of herbal extract molecules.]] wherein m is

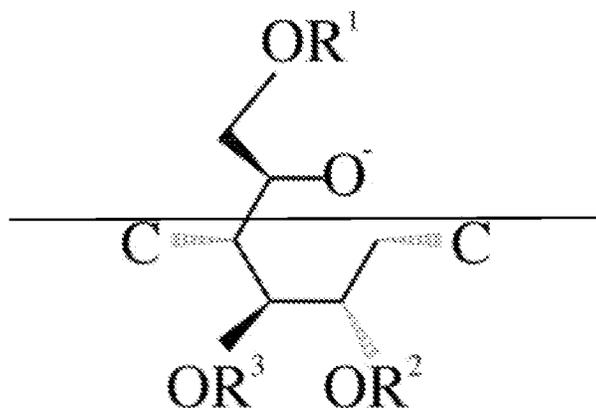
the number of D-glucosamine units, and n is the number of number of N-acetyl-D-glucosamine units of Chitosan, in which a negatively charged oxygen atom is formed from breaking the -O-  
group in between C5 and C1 of an internal 5C-O cycle of Chitosan. Then herbal extracts are attached to the free oxygen atom to produce a stable antimicrobial inclusion. [[And a combination of formular 1 and 2 is provided as formula below.]]



*Written descriptive support for this amendment is found at pages 5-6, paragraph [10] of the specification as originally filed.*

Paragraph [27] of the present specification is deleted as follows:

~~[27]—According to one embodiment of the present invention, a new formulation of Chitosan, which is referred to as Z-Chitosan, is provided that has the following form (Formula 4)~~



Formula 4

*\*\*Previously presented paragraphs [28]-[58] of the present specification are renumbered as “paragraphs [27]-[57]” of the present specification (see attachment for the modifications).*

4. **These claims are numbered as follows:**

Claim 1 remain as Claim 1.

Claim 19 becomes Claim 2, which depends on claim 1; reads as “The inclusion of claim 1”.

***Reasons for Allowance***

5. Claim 1 was amended to recite the following: “referred to as Z-Chitosan” (supported at page 5, paragraphs [9]-[10] of the specification as originally filed) and “where m is the number of D-glucosamine units, and n is the number of N-acetyl-D-glucosamine units of Chitosan” (supported at page 3, paragraph [6], of the specification as originally filed).

New claim 19 was added, which is supported at page 21, paragraph [44] of the specification as originally filed.

Thus, no new matter is present.

See Claim Amendment filed 09/27/2022.

6. The claim objection set forth in paragraph 13 of the previous Office action mailed 07/19/2022 is no longer applicable and thus, withdrawn because the applicants amended claim 1 to correct its informality.

See Claim Amendment filed 09/27/2022.

7. The 112(b) rejection set forth in paragraph 14 of the previous Office action mailed 07/19/2022 is no longer applicable and thus, withdrawn because the applicants amended claim 1 to provide the same with clarity and cancelled claim 2.

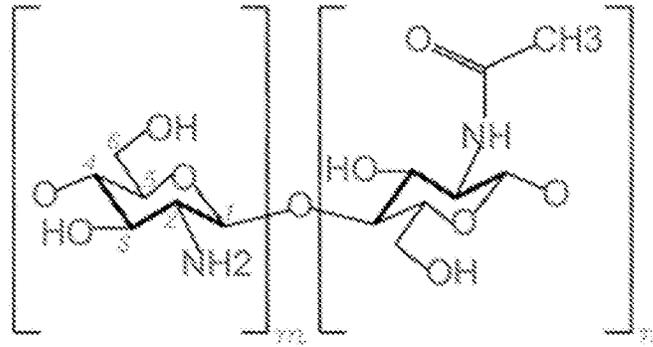
See Claim Amendment filed 09/27/2022.

See also Examiner's Amendment dated 10/25/2022.

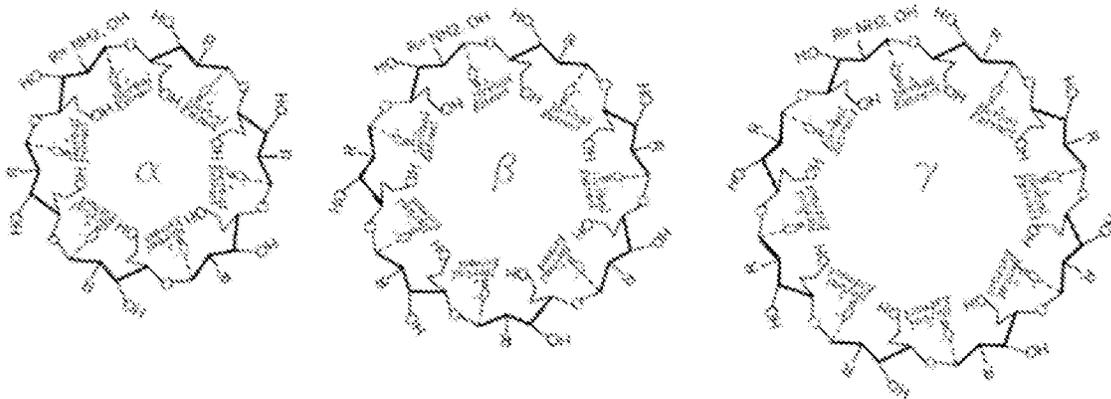
8. The title amendment of the application submitted by applicants on 09/27/2022 is entered and is supported at page 5, paragraph [9], of the specification as originally filed.

9. The present claims are allowable over the prior art references of record, namely, Bouchemal (WO 2013/150193; utilizing US 10,412,960 as its English equivalent) and Baker et al. (US 8,119,780). It is noted that Bouchemal (WO 2013/150193) is used for date purposes only, and all column, line numbers cited below refer to its English equivalent, namely US 10,412,960 because WO 2013/150193 is in French.

10. None of these references cited individually or in combination teaches or would have suggested the claimed inclusion complex, referred to as Z-Chitosan, formed by interaction in solvent between: Chitosan bearing hydrophobic groups of the formula



wherein  $m$  is the number of D-glucosamine units, and  $n$  is the number of N-acetyl-D-glucosamine units of Chitosan, in which a negatively charged oxygen atom is formed from breaking the -O- group in between C5 and C1 of an internal 5C-O cycle of Chitosan, and at least one herbal extract, in the presence of a catalyst, is attached to the negatively charged atom in cyclic oligomers of D-glucosamine and/or N-acetyl-D-glucosamine joined together in three forms of  $\alpha$ ,  $\beta$ , and  $\gamma$  cycles formed respectively from 6, 7, or 8 subunits in a truncated cone delimiting a cavity at its center, and in which the at least one herbal extract is attached to the negatively charged oxygen atom to form:



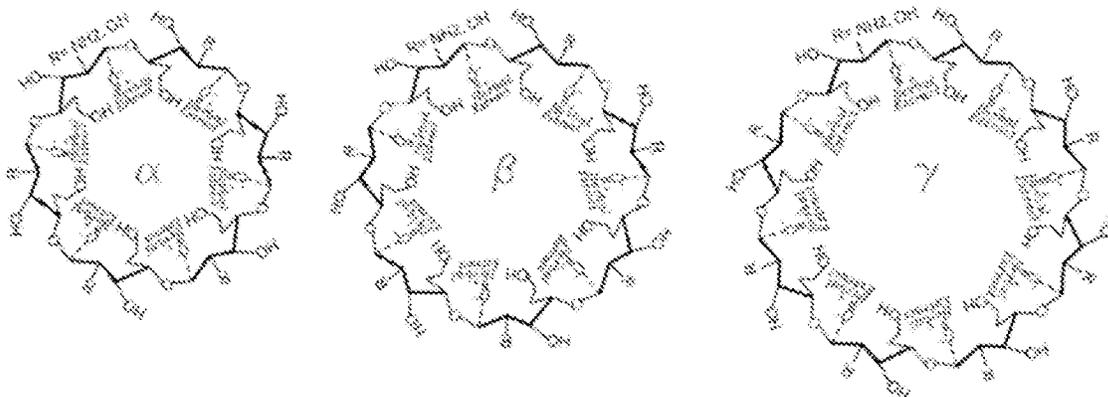
wherein  $\alpha$ ,  $\beta$ , and  $\gamma$  cycles correspond to 6, 7, and 8 subunits, respectively.

Specifically, Bouchemal discloses microparticles and nanoparticles made of a hydrophobized polysaccharide and an alpha-cyclodextrine, wherein the polysaccharide includes a chitosan having the following formula:



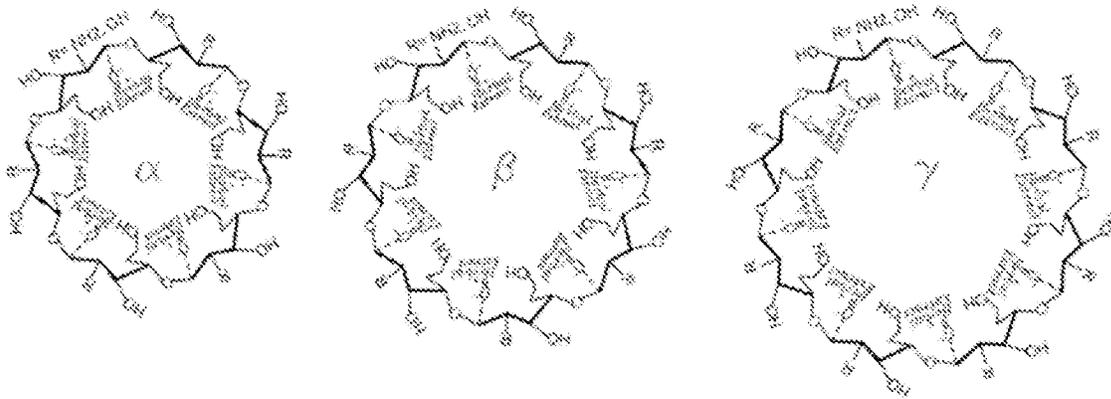
wherein m is the number of D-glucosamine units, and n is the number of N-acetyl-D-glucosamine units (Col. 1, line 5-Col. 2, line 45).

However, Bouchemal does not specifically mention forming a negatively charged oxygen atom by breaking the -O- group in between C5 and C1 of an internal 5C-O cycle from the above formula interacted with at least one herbal extract, in the presence of a catalyst, is attached to the negatively charged atom in cyclic oligomers of D-glucosamine and/or N-acetyl-D-glucosamine joined together in three forms of  $\alpha$ ,  $\beta$ , and  $\gamma$  cycles formed respectively from 6, 7, or 8 subunits in a truncated cone delimiting a cavity at its center, and in which the at least one herbal extract is attached to the negatively charged oxygen atom to form:



as required by the claims of the present application.

Baker et al. do not remedy the deficiencies of Bouchemal. Baker et al. only disclose administering effective amount of derivatized chitosan for animals (Col. 39, line 25-65). Like Bouchemal, Baker et al. do not mention forming a negatively charged oxygen atom by breaking the -O- group in between C5 and C1 of an internal 5C-O cycle from the above formula interacted with at least one herbal extract, in the presence of a catalyst, is attached to the negatively charged atom in cyclic oligomers of D-glucosamine and/or N-acetyl-D-glucosamine joined together in three forms of  $\alpha$ ,  $\beta$ , and  $\gamma$  cycles formed respectively from 6, 7, or 8 subunits in a truncated cone delimiting a cavity at its center, and in which the at least one herbal extract is attached to the negatively charged oxygen atom to form:



as required by the claims. Thus, Bouchemal alone or in combination with Baker et al. do not teach or would have suggested the claimed specific inclusion complex referred to as Z-Chitosan.

Accordingly, claims 1 and 19 are deemed allowable over the prior art references of record.

### *Correspondence*

11. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HANNAH J PAK whose telephone number is (571)270-5456. The examiner can normally be reached 8-5 PM; M-F.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Primary Examiner, Art Unit 1764