PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT5545620

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
SANYASI R KALIDINDI	10/12/2018
CHANDAN K SEN	05/22/2019

RECEIVING PARTY DATA

Name:	NATREON, INC.
Street Address:	2-D JANINE PLACE
City:	NEW BRUNSWICK
State/Country:	NEW JERSEY
Postal Code:	08901

PROPERTY NUMBERS Total: 2

Property Type	Number
Application Number:	16018876
PCT Number:	US2018039593

CORRESPONDENCE DATA

Fax Number: (312)884-7352

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 3124661033
Email: patent@amintalati.com
Correspondent Name: AMIN TALATI UPADHYE LLP
Address Line 1: 100 S. WACKER DRIVE
Address Line 2: SUITE 2000
Address Line 4: CHICAGO, ILLINOIS 60606

ATTORNEY DOCKET NUMBER:	NTR-120-US & NTR-120-PCT
NAME OF SUBMITTER:	GEORGE M. CARRERA, JR
SIGNATURE:	/George M. Carrera, Jr./
DATE SIGNED:	05/29/2019

Total Attachments: 15
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U.S. & WORLD-WIDE ASSIGNMENT

IN CONSIDERATION of the sum of One Dollar ($1.00), and of other good and valuable consideration

the undersigned inventor

Sanyasi R. Kalidindi – (hereinafter, the "Assignor")
1 Angelo Court
Monroe, NJ
08831 USA

acknowledges the payment by and receipt from

Natreon, Inc. – (hereinafter, the "Assignee")
2-D Janine Place
New Brunswick, NJ
0890l USA

wherein the undersigned Assignor assigns and transfers to Assignee, pursuant to the Clinical Study Agreement between The Ohio State University and Natreon, Inc. (attached), which is incorporated herein by reference in its entirety, any personal world-wide, entire, complete, and exclusive rights, title, and interest to and in: any and all invention(s) of U.S. Patent Application entitled

IMPROVEMENT OF BLOOD MICROPERFUSION TO SKIN BY SHILAJIT

which is/are described and/or claimed in applications for Letters Patent of the United States Serial Numbers

16/018,876	**filed on**	**June 26, 2018**	
PCT/US18/39593			

executed by the Assignor and naming as inventor(s) Chandan K. Sen and Sanyasi R. Kalidindi (the "Patent Application"); the Patent Application; any and all nonprovisional(s), continuation(s), division(s), renewal(s), substitute(s), reissue(s), reexamination(s), foreign application(s) including PCT application(s), or any other counterpart application(s) based in whole or in part on the Patent Application (collectively "Counterpart Non-Provisional Application(s)"); and any and all Letters Patent(s) granted on the Patent Application or granted on Counterpart Non-Provisional Application(s) in the United States and in any other country or territory for the full term or terms for which said U.S. Letters Patent(s) and for which said foreign Letters Patent(s) may be issued or granted, including any extensions thereof.

Upon Assignee's request, Assignor agrees, at Assignee's expense, to promptly take such actions as may be reasonably necessary to vest, secure, perfect, protect, and/or enforce the rights and interests of Assignee as received by the Assignee by way of this Assignment. Such actions shall include, without limitation, the prompt execution and delivery of documents in recordable form (including the prompt execution and delivery of additional confirmatory assignments), information, rightful oaths, and sworn testimony useful or necessary for Assignee or its affiliates, designees, or agents to file, prosecute, or maintain any registration or application relating in part or in whole to the Patent Application, or to pursue or defend any administrative, court, or other legal proceeding involving any U.S. or foreign patent(s) granted on the Patent Application or granted on Counterpart Non-Provisional Application(s).

ASSIGNOR

By: Sanyasi R. Kalidindi
Signature
Sanyasi R. Kalidindi
Printed Name
10/12/18
Date

Accepted By:

ASSIGNEE

Sanyasi R. Kalidindi
Signature
Sanyasi R. Kalidindi, *Chairman & CEO*
Printed Name and Title
10/12/18
Date

U.S. & WORLD-WIDE ASSIGNMENT

IN CONSIDERATION of the sum of One Dollar ($1.00), and of other good and valuable consideration

the undersigned inventor

Chandan K. Sen – (hereinafter, the "Assignor")
450 E. Vermont St.
Indianapolis, IN
46202 USA

acknowledges the payment by and receipt from

Natreon, Inc. – (hereinafter, the "Assignee")
2-D Janine Place
New Brunswick, NJ
08901 USA

wherein the undersigned Assignor assigns and transfers to Assignee, pursuant to the Clinical Study Agreement between The Ohio State University and Natreon, Inc. (attached), which is incorporated herein by reference in its entirety, any personal world-wide, entire, complete, and exclusive rights, title, and interest to and in: any and all invention(s) of U.S. Patent Application entitled

IMPROVEMENT OF BLOOD MICROPERFUSION TO SKIN BY SHILAJIT

which is/are described and/or claimed in applications for Letters Patent of the United States Serial Numbers

16/018,876 PCT/US18/39593	filed on	June 26, 2018	

executed by the Assignor and naming as inventor(s) Chandan K. Sen and Sanyasi R. Kalidindi (the "Patent Application"); the Patent Application; any and all nonprovisional(s), continuation(s), division(s), renewal(s), substitute(s), reissue(s), reexamination(s), foreign application(s) including PCT application(s), or any other counterpart application(s) based in whole or in part on the Patent Application (collectively "Counterpart Non-Provisional Application(s)"); and any and all Letters Patent(s) granted on the Patent Application or granted on Counterpart Non-Provisional Application(s) in the United States and in any other country or territory for the full term or terms for which said U.S. Letters Patent(s) and for which said foreign Letters Patent(s) may be issued or granted, including any extensions thereof.

Upon Assignee's request, Assignor agrees, at Assignee's expense, to promptly take such actions as may be reasonably necessary to vest, secure, perfect, protect, and/or enforce the rights and interests of Assignee as received by the Assignee by way of this Assignment. Such actions shall include, without limitation, the prompt execution and delivery of documents in recordable form (including the prompt execution and delivery of additional confirmatory assignments), information, rightful oaths, and sworn testimony useful or necessary for Assignee or its affiliates, designees, or agents to file, prosecute, or maintain any registration or application relating in part or in whole to the Patent Application, or to pursue or defend any administrative, court, or other legal proceeding involving any U.S. or foreign patent(s) granted on the Patent Application or granted on Counterpart Non-Provisional Application(s).

ASSIGNOR

By: _____ Accepted By:

Signature
Chandan K. Sen
Printed Name
5/22/2019
Date

ASSIGNEE

Signature
Sanyasi R. Kalidindi, *Chairman & CEO*
Printed Name and Title
5/28/19
Date

CLINICAL STUDY AGREEMENT

This Clinical Trial Agreement ("Agreement") is entered into by and between Natreon, Inc. located at 2D Janine Place, New Brunswick, NJ 08901, USA ("Sponsor") and The Ohio State University, located at 1960 Kenny Road Columbus, Ohio 43210-1063 ("Institution").

WHEREAS, the research study contemplated by this Agreement is of mutual interest and benefit to Institution and Sponsor, and will further Institution's instructional, research and public service objectives in a manner consistent with its status as an educational institution; and

WHEREAS, the Institution has the facilities and the personnel with the requisite skills, experience, and knowledge to undertake such study;

NOW, THEREFORE, in consideration of the mutual promises and considerations contained herein, and other good and valuable consideration, receipt of which is hereby acknowledged, Institution and Sponsor agree as follows:

1. Description of the Study. Institution agrees to conduct a clinical research study entitled "PrimaVie and Exercise Training on Human Skeletal Muscle Adaptation" (the "Study") on behalf of Sponsor. The Study shall be conducted according to the protocol which will be written as part of the Scope of Work provided in Exhibit A, incorporated herein by this reference, and fully details the clinical research activities and responsibilities to be undertaken (the "Protocol"); provided, however, that the Study is conducted with the express approval of the Institution's Institutional Review Board ("IRB"). **Study activity involving human subjects shall not commence until such time as the IRB has approved the Protocol.**

2. Study Materials. Sponsor will provide sufficient PrimaVie ("Study Drug") for the Study unless otherwise specified in the Scope of Work or Protocol.

3. Principal Investigator. Study shall be under the direction of Sashwati Roy, PhD ("Principal Investigator" or "PI"). Institution and PI agree to use reasonable efforts to perform the work required under this Agreement and the Protocol. In the event of the departure, disability, or death of the principal investigator, Institution shall have the right to appoint a new principal investigator acceptable to Sponsor.

4. Effective Date and Term. This Agreement shall become effective on the date the Agreement is signed by the last party and shall continue in effect until completion of the Protocol or termination of this Agreement for other reasons as provided herein.

5. Compliance with Laws. Institution shall conduct the Study in accordance with the Protocol, with generally accepted standards of good clinical practice, and with all applicable federal, state and local laws and regulations governing the performance of clinical investigations, including the Federal Food, Drug

and Cosmetic Act and regulations of the Food and Drug Administration. For the purposes of this Agreement, good clinical practices ("GCP") shall mean 21 CFR parts 50 and 56, and the International Conference on Harmonization (ICH) GCP Consolidated Guidance that is consistent with the FDA GCP regulations and applicable to the Institution's and the Principal Investigator's conduct of the trial.

The parties agree that as part of this Agreement there may be an exchange of protected health information ("PHI") as that term is defined under the Health Insurance Portability and Accountability Act of 1996 and its implementing regulations set forth in 45 CFR §§ 160 and 164 ("HIPAA Privacy Rule"). Sponsor agrees to comply with the subject authorization (which shall be signed by each subject as part of or in addition to the informed consent document) regarding Sponsor's use and disclosure of such information. In addition, Sponsor agrees to the following: (i) to use appropriate safeguards to prevent uses or disclosures of PHI other than those uses and disclosures set forth in the authorization; (ii) to take appropriate steps to ensure that any agents or contractors to whom Sponsor provides PHI agree to the same restrictions and conditions that apply to Sponsor with respect to such PHI; and (iii) to make no attempt to identify or contact the individual to whom the PHI pertains unless such identification or contact is required by law or authorized by the subject or permitted by a waiver of authorization granted by an appropriate ethical review board or privacy board. Additionally should Sponsor wish to review PHI for the purposes of quality, safety or effectiveness as provided in the subject authorization, Sponsor shall limit such review of PHI to the minimum necessary information.

6. Notifications. Within the time period specified in the Protocol, Institution and PI shall report to Sponsor and the IRB all unexpected, fatal, life-threatening or other adverse events occurring as a result of any Subject's participation in the Study. A written report shall follow any telephone report.

Sponsor will promptly, and for a period of two (2) years after completion of the study, notify Institution and PI of any findings related to the Study Drug that could, in the best judgment of Sponsor, reasonably be expected to affect the safety of Subjects, affect Subject willingness to continue with the Study, influence Study conduct, or alter the IRB's approval to continue the Study.

Sponsor will inform Institution and PI, and Institution and/or PI will inform Subjects, of any results that, in the best judgment of Sponsor, could reasonably be expected to directly affect their safety or required medical care.

7. Schedule/Payment. In consideration of the work to be performed under this Agreement, Sponsor will pay Institution in the amount and manner set forth in the Budget attached hereto as Exhibit B and the Payment Schedule attached hereto as Exhibit C, which are incorporated and made part of this Agreement.

8. Termination. In the event either party shall commit any breach or default under the terms of this Agreement, and shall fail to remedy such breach or default within thirty (30) days after receipt of written notice from the other party, the party giving notice may, at its option and in addition to any other remedies which it may have in law or in equity, terminate this Agreement by sending notice of

termination to the other party, and the termination shall be effective immediately. In addition, either party may terminate this Agreement upon thirty (30) days written notice in its sole discretion. Sponsor and Institution shall ensure that termination has no adverse effect on patient care. In the event of termination by Sponsor, Sponsor shall reimburse Institution for all costs and non-cancelable commitments incurred as of the effective date of termination.

9. Recordkeeping and Access. During the term of this Agreement, the Sponsor, the Sponsor's authorized representative(s), and regulatory authorities to the extent permitted by law, may, during regular business hours, arrange in advance with Institution and PI to: (i) examine and inspect Institution's facilities required for performance of the Study; and (ii) inspect and copy all Study data and work products. Institution agrees to cooperate with any regulatory authority and allow regulators access to applicable records and data. Institution shall maintain records as required by law.

10. Confidential Information. Institution and PI shall not disclose or use for any purpose other than performance of the Study, any and all trade secrets, privileged records or other confidential or proprietary information (collectively "Information") disclosed to the Institution by Sponsor pursuant to this Agreement. Such Information shall be disclosed to Institution in writing and clearly marked as confidential, or if disclosed orally or in other than documentary form shall be reduced to writing and marked appropriately thirty (30) days thereafter. Information which is not in oral or written form, such as, but not limited to data tapes, shall be designated in writing as confidential within thirty (30) days after disclosure. The obligation of non-disclosure shall not apply to the following: (i) Information at or after such time that it is or becomes publicly available through no fault of Institution; (ii) Information that is already independently known to Institution as shown by its prior written records; (iii) Information at or after such time that it is disclosed to Institution on a non-confidential basis by a third party with the legal right to do so; (iv) Information independently developed by Institution personnel not involved in the Study and not privy to the Information; or (v) Information that is disclosed by Institution to fulfill a request from a proper legal or regulatory authority.

The obligations of the Institution under this Article 10 shall survive and continue for three (3) year(s) after termination of this Agreement. In the event Sponsor shall come into contact with Study Subjects' medical records, the Sponsor shall hold in confidence the identity of the patient and shall comply with all applicable law(s) regarding the confidentiality of such records, including, but not limited to the obligations under Article 5 in this Agreement.

11. Publication. Institution shall have the right to publish the results of the Study provided such publication does not constitute a violation of Article 10. Institution will provide Sponsor with a copy of any proposed manuscript or other material for publication thirty (30) days prior to publication for review and comment. Expedited reviews for abstracts or poster presentations may be arranged if mutually agreeable to Sponsor and Institution or PI. Sponsor shall be permitted to advise as to the implications of timing of the publication if the same clinical trials set forth in Protocol are still in progress at other sites. Notwithstanding the foregoing, Institution agrees that if the Study is part of a multi-center study, the first

publication of the results of the Study shall be made in conjunction with the results from the principal investigators at the other study centers. The manner in which the publication will be generated will be negotiated between Sponsor and the principal investigators prior to initiation of Study. However, in the event no publication of the multi-center study has been made within one year of the completion of the study at all centers, then Institution will be free to publish its own results.

12. Inventions and Patent Rights. It is recognized and understood that inventions and technologies owned by Institution or Sponsor and existing at the date when this Agreement becomes effective are the separate property of Institution or Sponsor, respectively, and are not affected by this Agreement, and none of the parties shall have any claims or rights in such separate inventions or technologies of the other parties. Institution agrees that any inventions, discoveries, or improvements ("Inventions") arising out of work performed on Natreon's products or derivatives of Natreon's products in general, and Shilajit or its derivatives in particular, shall be owned by Sponsor and shall be promptly disclosed by Institution to Sponsor ("Sponsor Inventions"). All other Inventions developed under this Agreement solely by the PI or other Institution employees shall be owned by Institution ("Institution Inventions"). All Inventions developed by one or more employees of both Sponsor and Institution under this Agreement shall be owned jointly by Sponsor and Institution ("Joint Inventions").

Institution shall grant Sponsor first option to obtain an exclusive, royalty bearing, worldwide license, including the right to sublicense, to make, have made, use, and sell products incorporating any Institution Inventions or Institution's rights to Joint Inventions. Sponsor's option may be exercised at any time during a period of ninety (90) days after written notification by Institution to Sponsor of each Institution Invention or Joint Invention. Upon Sponsor's exercise of its option with regard to particular Institution Inventions or Joint Invention, Institution and Sponsor will negotiate in good faith in an attempt to reach a license agreement satisfactory to both parties, the negotiation period not to exceed six months. Upon the expiration of the unexercised option or the six-month negotiation period, Institution shall have no further obligation to Sponsor under this Agreement with regard to specific Institution Inventions or Joint Inventions under consideration.

All materials supplied by Sponsor (e.g., case report forms, protocol, Investigator's brochure,) shall remain property of Sponsor. All data, results, reports, source documents (including all records of original observations, notations of clinical activities, and all reports and records necessary for the evaluation and reconstruction of the Study), data correction forms, workbooks, monitoring logs, schedules, correspondence, regulatory documents and all other clinical information prepared or generated by PI or Institution in the conduct of the Study shall be owned solely by the Institution.

13. Use of Name. Sponsor will not use, directly or by implication, the name of The Ohio State University, or the name of any member of the staffs thereof, in any publicity or advertising unless copy is submitted and written approval of the Director of the Office of Sponsored Programs is obtained.

14. Indemnification and Insurance Sponsor will indemnify, defend, and hold harmless Institution, its respective trustees, directors, employees, agents, contractors, subcontractors, fellows, and students ("Indemnitees") from any liability, damage, loss, or expense (including attorneys' fees and expenses of litigation) incurred by or imposed upon the Indemnitees or any one of them in connection with any claims, suits, actions, demands, or judgments arising out of or connected with this Agreement or the research done under this Agreement, except to the extent that the liability is due to the gross negligence and willful misconduct of Institution. Institution will notify Sponsor of any claim and will cooperate with Sponsor in the defense of the claim. Sponsor will, at its own expense, provide attorneys reasonably acceptable to the Ohio Attorney General to defend against any claim with respect to which Sponsor has agreed to indemnify Institution. Sponsor will not settle a claim admitting fault on the part of the Indemnitees without the Institution's written consent, which will not be unreasonably withheld. This indemnity will not be deemed excess coverage to any insurance or self-insurance Institution may have covering a claim. Sponsor's indemnity will not be limited by the amount of Sponsor's insurance.

Sponsor agrees to assume responsibility for the reasonable costs of immediate treatment of any adverse reaction or injury to a Subject which, in the reasonable judgment of Institution and Sponsor, specifically results from the Study Drug/Device, but only to the extent such expenses are not covered by the Subject's medical or hospital insurance, governmental program or similar third party payor providing such coverage and only to the extent such expenses are not attributable to a failure to adhere to the terms of the Protocol, to the negligence or misconduct of the Institution or PI or to a pre-existing abnormal medical condition or underlying disease of the Subject.

At all times during the term of this Agreement, the Sponsor shall provide and maintain comprehensive general liability and property insurance, with minimum limits of $1,000,000 per occurrence and $3,000,000 in the annual aggregate. Sponsor shall provided proof of said insurance at Institution's request, in a form satisfactory to Institution.

15. Notice. Any notice or other communication required or permitted under this Agreement shall be in writing and will be deemed given as of the date it is received by the receiving party. Notice shall be given to the parties at the addresses listed below:

As to Sponsor:
Natreon, Inc.
2D Janine Place
New Brunswick, NJ 08901
Attn: Sanni Raju/Venkat Raju

As to Institution:
The Ohio State University
Office of Sponsored Programs
1960 Kenny Road

Columbus, Ohio 43210
ATTN: Jeffrey Sleasman

As to Principal Investigator:
Sashwati Roy, Ph.D
Associate Professor of Surgery
Director, Laser Capture Molecular Core
511 DHLRI
473 W. 12th Ave.
Columbus, Ohio 43210

16. Waiver, Modification or Amendment. Any waiver, alteration, modification, or amendment of this Agreement must be in writing and signed by both parties. No waiver of any term, provision or condition of this Agreement, whether by conduct or otherwise in any one or more instances, shall be deemed to be or construed as a further or continuing waiver of any such term, provision or condition, or of any other term, provision or condition of this Agreement.

17. Independent Contractor. The relationship of Sponsor to Institution and PI under this Agreement shall be that of independent contractor(s) and not agent(s), joint venture(s) or partner(s) of Sponsor.

18. Assignment. This Agreement may not be assigned by either party without the prior written consent of the other; provided, however, that Sponsor may assign this Agreement without such consent in connection with the transfer or sale of all or substantially all of its assets or business, its merger, or consolidation with another company. Sponsor shall notify Institution in writing of any such assignment.

19. Governing Law; Jurisdiction. This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of Ohio.

20. Precedence. In the event of any inconsistency between the terms of this Agreement and the Protocol, the terms of this Agreement shall take precedence.

21. Entire Agreement. This Agreement represents the entire agreement and understanding between the parties with respect to its subject matter. It supersedes all prior or contemporaneous discussions, representations or agreements, whether written or oral, of the parties relating to this subject matter.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first set forth above.

SIGNATURE PAGE TO IMMEDIATELY FOLLOW

Sponsor:

By: Sanni Raju

Name: SANNI RAJU

Title: CEO

Date: 05/31/13

The Ohio State University:

By: Kristy A. Baker

Name: Kristy A. Baker, CRA
Director, Office for
Business & Industry Contracts

Title:

Date: 6/6/2013

Tax ID No.: 31-6025986

I have read this Agreement and understand my obligations hereunder:

By: Sashwati Roy

Name: SASHWATI ROY

Title: Principal Investigator

Date: 06/04/13

EXHIBIT A

SCOPE OF WORK

Background: Inspired by findings on a recent murine study where PrimaVie (PV) was noted to significantly change expression of genes related to muscle function, we are led to the following hypotheses.

Hypotheses: Hypothesis 1: That oral supplementation of PrimaVie twice a day for 10 weeks will influence gene expression in the skeletal muscle of sedentary pre-obese to obese humans

Hypothesis 2: That oral supplementation of PrimaVie will synergistically act with treadmill exercise training to favorably impact skeletal muscle gene expression.

Research plan:

APPROACH.

- As opposed to indirect skeletal muscle measurements, direct measurements will be performed by obtaining skeletal muscle biopsies.
- Transcriptome profiling will be performed to ensure that PrimaVie sensitive genes in humans are discovered in an unbiased wide-net approach.
- Because miRNAs (Nobel Prize 2006) are now known to regulated clusters of coding genes, instead of looking at mRNAs which may or may not encode the corresponding protein – profiling of miRNAs will be performed. This approach is more suited to evaluate the functional aspects of skeletal muscle function as miRNAs are implicated in post-transcriptional gene silencing. miRNAs thus determine whether a mRNA would encode its corresponding protein. The protein, as we know, is then responsible for tissue and organ function. MicroRNAs (miRNAs) are a class of small, non-coding RNA that regulate gene expression of target mRNAs via post-transcriptional gene silencing. These short RNAs have been implicated in the widespread control of critical biologicalprocesses such as proliferation, differentiation, and apoptosis. Current literature supports that miRNAS are required for differentiation, myogenesis and regeneration of skeletal muscle.
- Our emphasis on miRNA will add a high level of innovation to the study as very few nutritional products currently are supported by information on late-breaking (discovered 1999) miRNA biology.

STUDY DESIGN.

- To benefit from the strength of repeated measurement, a longitudinal study design is adopted. The study will be for a total of 16 wks in the following three phases:
    - T1 - Baseline (prior to the start of supplementation)
    - T2- First 8 weeks of supplementation alone
    - T3- Next 8 weeks of supplementation together with exercise

-
    - 8 weeks of supplementation
    - 8 weeks of supplementation + Exercise

SUBJECT POPULATION

- Two groups of 15 subjects (total 30 subjects) will be studied following IRB approval.
- Sedentary pre-obese or obese (BMI: 25-35).

SUPPLEMENTATION & EXERCISE

- Group assignment will be randomized to PV (PrimaVie) or C (Control).
- Oral (PrimaVie™) 250 mg/twice per day will be provided as capsules
- Subjects will take oral supplementation for 8 weeks.
- Exercise (with supplementation): treadmill training (65% HRmax for 20 mins; 5 min warm up and 5 min cool down – total 30 mins a day; 4 days a week) for 8 weeks.

SAMPLE COLLECTIONS

- Muscle biopsies (using a 5 mm Bergstrom biopsy needle) will be collected from all subjects three times in the duration (16 wks) of the study
    - T1 - Baseline (prior to the start of supplementation)
    - T2- After completion of first 8 weeks of supplementation alone
    - T3- After completion of next 8 weeks of supplementation together with exercise

- Blood (20 ml) collection. During muscle biopsy collection at T1 and T2. For T3, the blood sampling will be done on 15 min before start of exercise and 30 min after end of exercise at the beginning of exercise + supplementation and 8 weeks after the combined intervention.

OUTCOMES

- Muscle samples from five subjects will be used for nCounter miRNA expression profiling assay.
- The remaining muscle samples (n=10) will be used to study the corresponding protein (histology) once PrimaVie-sensitive miRNA are discovered.
- The following muscle damage markers will be determined from blood samples: Plasma creatine kinase, myoglobin, troponin, In addition, testosterone and growth hormone levels will also be measured.
- Plasma glucose and lipid profiles will be determined
- Muscle and blood ATP levels will be measured
- Blood samples will archived and may be used for determination of PrimaVie metabolite and other constituents as required at a later stage (not part of this study).

COMPLIANCE FOR PV SUPPLEMENTATION:

- The subjects will be asked to return their empty packages for PV supplements weekly via pre-paid mail. The subjects will be provided with mailing envelopes for returning packages.

INCLUSION CRITERIA

- Adults healthy subjects (21-45 years old) with BMI between 25-35.

EXCLUSION CRITERIA

- Individuals who are deemed unable to understand the procedures, risks and benefits of the study, i.e. Informed consent will be excluded.
- BMI less than 25 and over 35
- Smokers
- Clinically diagnosed diseases.
- Females who are pregnant as well as individuals who are therapeutically immuno-compromised will also be excluded in order to minimize the risk to such individuals (and fetus) and to decrease statistical variability and to minimize potential of confounders.
- Candidates for inclusion into the study will not include individuals as defined in 45 CFR 46 Subparts B, C and D, nor from any other population which may be considered vulnerable.

PROCEDURES

- Subjects who have met the inclusion & exclusion criteria and have consented will be supplemented with PV 250 mg/twice per day for 16 weeks (Supplementation plus exercise in the last 8 weeks of supplementation).
- Muscle biopsy collection: Biopsy site: A biopsy (using 5mm Bergstrom biopsy needle) will be collected by a board certified Physician after application of local anesthetics to the site of biopsy.
- miRNA profiling will be performed using nCounter Human v2 miRNA expression assay system. We have substantial prior expertise with this novel system. The NanoString® nCounter miRNA Expression Assay Kit allows investigators to profile miRNAs with superior specificity and sensitivity and with lower cost than microarrays. This is the first and only product capable of highly multiplexed, direct digital detection and counting of miRNAs in a single reaction without amplification.
- Plasma analysis will be performed at OSU hospital pathology laboratories

Sample size and statistical analysis.

- All sample size calculations are powered to detect the effect under investigation with 80% probability. The probability of a type I error (alpha) was set at 5% and all test are two-sided.

Sample size estimates were run using n_Query Advisor®, release 5.0. Based on existing data (literature) the sample size needed will be n=15 each group (n=30 total study) for the study.

The statistical analysis will be performed using SPSS (v17.0). Descriptive summaries will be examined and recorded. These summaries will include histograms, determination of the distribution of population and boxplots that might indicate outlier observations or necessary transformations of scale. The difference will be analyzed using ANOVA.

EXHIBIT B

BUDGET

$125,000 (including 26% indirect).

EXHIBIT C

PAYMENT SCHEDULE

- **$10,000** at agreement – *IRB writing starts* – April 2013
- **$25,000** at signing of contract and evidence of IRB approval –July 2013
- **$25,000** at enrollment of first 10 subjects –September 2013
- **$25,000** at enrollment of next 10 subjects –December 2013
- **$25,000** at enrollment of all 30 subjects –February 2014
- **$15,000** at submission of miRNA data analysis report to Natreon –April 2014.

Payments shall be made payable to The Ohio State University

and sent to: The Ohio State University
Office of Sponsored Programs
1960 Kenny Road
Columbus, OH 43210-1063

Institution Tax Identification Number: 31-6025986

Payments shall reference PI name