

Project Information

5P20GM103641-07

DESCRIPTION DETAILS RESULTS HISTORY SUBPROJECTS

Project Number: 5P20GM103641-07

Title: DIETARY SUPPLEMENTS AND INFLAMMATION
PHASE-2

Contact PI / Project Leader: [NAGARKATTI, PRAKASH S](#)

Awardee Organization: UNIVERSITY OF SOUTH
CAROLINA AT COLUMBIA

Abstract Text:

Abstract: The overall objective of the COBRE Phase-2 for Dietary Supplements and Inflammation (CDSI) at the University of South Carolina (USC) is to continue to build on the success of Phase-1 and advance the research infrastructure specifically in the area of dietary supplements and inflammation by promoting multi-disciplinary research pursued by junior investigators so that they become highly competitive in obtaining NIH R01 grants and similar type of extramural funding to pursue their research. The overall objective is to investigate how botanicals can attenuate inflammation and be used to prevent and/or treat inflammatory diseases. The CDSI will test the overarching hypothesis that botanicals or their constituents regulate inflammation through epigenetic regulation of immune cell functions. In Phase-1, we have made outstanding progress in the successful transition of all of our junior faculty into extramurally-funded investigators. Additionally, we were successful in securing NIH Complementary and Alternative Medicine (CAM) Center (P01) for Epigenetic Regulation of Inflammation, in which 'graduated' faculty are leading the projects, thereby paving the path towards sustainability of CDSI. Thus, the CDSI will complement the CAM Research and create a unique niche at USC in inflammation research. The main goal of COBRE Phase-2 is to establish multi-disciplinary research that will identify the epigenetic mechanisms through which botanicals modulate inflammation so that they or their analogs can be used to prevent and/or treat inflammatory diseases. The US population spends ~\$33.9 billion/year on CAM, of which ~\$20 billion is on dietary supplements. It is becoming increasingly clear that inflammation plays a critical role in the pathogenesis of not only autoimmune diseases but also a wide range of clinical disorders including cardiovascular diseases, neurodegenerative disorders, obesity, aging and cancer. Thus, understanding the mode of action of botanicals or their constituents on inflammation, could lead to novel treatment modalities with far ranging clinical implications. The CDSI goal will be accomplished through promotion of multi-disciplinary research pursued by 4 junior faculty in the area of inflammatory diseases, through highly structured mentoring of each by a senior faculty and a recently graduated faculty member of the COBRE Phase-1. The junior faculty will have access to state-of-the-art research core facilities that include Flow Cytometry, Microscopy and Imaging Core, and Bioanalytical Core, to aid epigenetic studies. The program will be evaluated by an External Advisory Committees consisting of nationally recognized scientists. Additionally, through institutional support, 5 new tenure-track junior faculty will be recruited and mentored at USC to bolster and advance inflammation research. The long term objective of the CDSI would be to build a self-sustaining, nationally and internationally recognized multi-disciplinary Center for dietary supplements and inflammation research, by promoting innovation, faculty entrepreneurship, collaborative research projects such as PPGs and Institutional training grants, and clinical/translational research.

Public Health Relevance Statement:

Overall Project Narrative Inflammation is considered to be the underlying cause of a larger number of clinical disorders that afflict heart, liver, brain, and other vital organs. Our Center will pursue multi-disciplinary research to study how compounds found in dietary

supplements (botanicals) can suppress inflammation so that they can be used to treat a wide range of diseases. This will be accomplished through mentoring highly accomplished junior investigators.

Project Terms:

Acute Disease; Advisory Committees; Aging; Alternative Medicine; analog; Area; Attenuated; Autoimmune Diseases; Award; biomarker discovery; Botanicals; Brain; Cardiovascular Diseases; career; Cell physiology; Cells; Centers of Research Excellence; Chronic; Chronic Disease; Clinical; college; Communicable Diseases; Complement; Complementary and alternative medicine; Complementary Medicine; Core Facility; Development; dietary supplements; Disease; Distress; effective therapy; Entrepreneurship; Epigenetic Process; epigenetic regulation; expectation; experience; Extramural Activities; Faculty; Financial Support; Flow Cytometry; Foreign Bodies; Funding; Ginseng Preparation; Goals; Grant; Healthy People 2020; Heart; Hispanic Americans; Holistic Medicine; Homeostasis; Human; Hypersensitivity; immunoregulation; Individual; Indoles; Inflammation; Inflammatory; innovation; Interdisciplinary Study; International; Invaded; K-Series Research Career Programs; Knowledge; Laboratories; Lead; Legal patent; Liver; Malignant Neoplasms; meetings; member; Mentors; Mentorship; microscopic imaging; Modality; multidisciplinary; nervous system disorder; Neurodegenerative Disorders; novel; novel therapeutics; Obesity; off-patent; Organ; pathogen; Pathogenesis; Phase; Pilot Projects; Play; Population; post-doctoral training; pre-doctoral; prevent; Preventive; programs; Quercetin; recruit; Reducing Agents; Reporting; Research; Research Infrastructure; Research Personnel; Research Project Grants; Resveratrol; Role; Scientist; Secure; senior faculty; Services; Small Business Innovation Research Grant; Small Business Technology Transfer Research; South Carolina; Structure; success; tenure track; Testing; Therapeutic; Tissues; Training; Translational Research; Trauma; United States National Institutes of Health; Universities; ward

Contact PI Information:

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Other PI Information:

NAGARKATTI, MITZI

Organization:

Name: UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA
City: COLUMBIA **Country:** UNITED STATES (US)

Department / Educational Institution Type:

PATHOLOGY
SCHOOLS OF MEDICINE

Congressional District:

State Code: SC
District: 06

Other Information:

FOA: [PAR-16-241](#)

Study Section: Special Emphasis Panel (ZGM1-RCB-3 (2A))

Fiscal Year: 2019 **Award Notice Date:** 30-MAY-2019

DUNS Number: 041387846

Project Start Date: 1-SEP-2012

Budget Start Date: 1-JUN-2019

CFDA Code: 859

Project End Date: 31-MAY-2023

Budget End Date: 31-MAY-2020

Administering Institutes or Centers:

NATIONAL INSTITUTE OF GENERAL MEDICAL SCIENCES

Project Funding Information for 2019:

Total Funding: \$2,016,232

Direct Costs: \$1,766,475

Indirect Costs: \$631,168

| Year | Funding IC | FY Total Cost by IC |
|------|--|---------------------|
| 2019 | NATIONAL INSTITUTE OF GENERAL MEDICAL SCIENCES | \$2,016,232 |

History:

Total project funding amount for 7 projects is **\$14,115,776***

* Only NIH, CDC, and FDA funding data.

| Project Number | Sub # | Project Title | Contact Principal Investigator | Organization | FY | Admin IC | Funding IC | FY Total Cost by IC |
|-------------------|-------|---|--------------------------------|--|------|----------|------------|---------------------|
| 5P20GM103641-07 | | DIETARY SUPPLEMENTS AND INFLAMMATION PHASE-2 | NAGARKATTI, PRAKASH S et al. | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | 2019 | NIGMS | NIGMS | \$2,016,232 |
| 2P20GM103641-06A1 | | DIETARY SUPPLEMENTS AND INFLAMMATION PHASE-2 | NAGARKATTI, PRAKASH S et al. | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | 2018 | NIGMS | NIGMS | \$2,037,552 |
| 4P20GM103641-05 | | CENTER FOR DIETARY SUPPLEMENTS AND INFLAMMATION | NAGARKATTI, PRAKASH S | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | 2016 | NIGMS | NIGMS | \$2,030,749 |
| 5P20GM103641-04 | | CENTER FOR DIETARY SUPPLEMENTS AND INFLAMMATION | NAGARKATTI, PRAKASH S | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | 2015 | NIGMS | NIGMS | \$2,031,538 |
| 5P20GM103641-03 | | CENTER FOR DIETARY SUPPLEMENTS AND INFLAMMATION | NAGARKATTI, PRAKASH S | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | 2014 | NIGMS | NIGMS | \$2,032,289 |
| 7P20GM103641-02 | | CENTER FOR DIETARY SUPPLEMENTS AND INFLAMMATION | NAGARKATTI, PRAKASH S | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | 2013 | NIGMS | NIGMS | \$1,961,849 |
| 1P20GM103641-01 | | CENTER FOR DIETARY SUPPLEMENTS AND INFLAMMATION | NAGARKATTI, PRAKASH S | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | 2012 | NIGMS | NIGMS | \$2,005,567 |

Subprojects:

| Project Number | Sub # | Project Title | Contact Principal Investigator | Organization | FY | Admin IC | FY Total Cost by IC |
|----------------------|-------|---|--------------------------------|---------------------------------|------|----------|---------------------|
| 5P20GM103641-07-5002 | | MODULATION OF MICRO-RNA AND INFLAMMATION BY | CHATTERJEE, | UNIVERSITY OF SOUTH CAROLINA AT | 2019 | NIGMS | \$216,467 |

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|----------------------|--|----------------------------|--|------------|-----------|
| 5P20GM103641-07 5993 | ANDROGRAPHOLIDE IN NAFLD PATHOLOGY | SAURABH | SOUTH CAROLINA AT COLUMBIA | 2019 NIGMS | \$210,707 |
| 5P20GM103641-07 5994 | ROLE OF MICRORNA IN RESVERATROL-MEDIATED SUPPRESSION OF MAST CELL-DRIVEN INFLAMMATION | GOMEZ, GREGORIO VALENZUELA | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | 2019 NIGMS | \$197,361 |
| 5P20GM103641-07 5992 | RESVERATROL-MEDIATED REGULATION OF INFLAMMATORY PATHWAYS IN AUTISM SPECTRUM DISORDERS | LIZARRAGA, SOFIA BEATRIZ | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | 2019 NIGMS | \$217,135 |
| 5P20GM103641-07 5988 | ADMINISTRATIVE CORE | NAGARKATTI, PRAKASH S | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | 2019 NIGMS | \$527,613 |
| 5P20GM103641-07 5990 | BIOANALYTICAL CORE | SINGH, NARENDRA P | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | 2019 NIGMS | \$330,068 |
| 5P20GM103641-07 5989 | FLOW CYTOMETRY, MICROSCOPY, AND IMAGING CORE | SINGH, UDAI P | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | 2019 NIGMS | \$330,182 |
| 5P20GM103641-07 5991 | MECHANISM OF DIETARY INDOLE-MEDIATED ATTENUATION HELICOBACTER-INDUCED INFLAMMATION AND COLITIS | TESTERMAN, TRACI L | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | 2019 NIGMS | \$197,406 |

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