

REQUEST RFP_2019_0125(0126)

SUNTORY

Minimally Invasive Measurement of Mitochondrial Function

RESPONSE DUE DATE: August 5, 2019

Contact Person

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Opportunity

Joint research, joint development, product supply

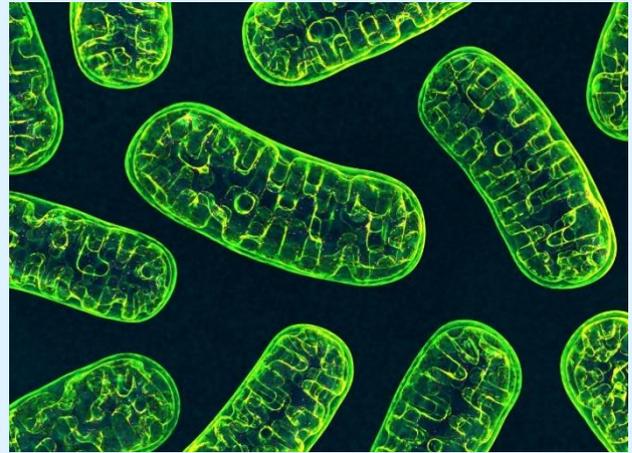
Timeline

Partner selection: Within 6 months

Start of collaboration: Within 1 year

Financials

Required budget guaranteed
(negotiable depending on the proposal)



- It shall be potentially possible to carry out measurement in humans.

Conditions welcomed (not mandatory)

- Past measurement achievements in vivo
- High throughput
- No need for large-scale equipment

POSSIBLE MEASUREMENT ITEMS

Possible measurement items might include, but are not limited to:

- Oxygen consumption
- Substrate consumption rate of mitochondrial enzymes
- Oxygen partial pressure in mitochondria
- Amount of glutathione, redox status
- Amount of reactive oxygen species (ROS)
- Mitochondrial membrane potential

MEASUREMENT ITEMS NOT OF INTEREST

The following measurements are not of interest:

- Mitochondrial function that is less related to ATP production by oxidative phosphorylation
 - Synthesis of steroid and heme
 - Regulation of the intracellular concentration of calcium and iron
 - Regulation of cell cycle and apoptosis, etc.

DESCRIPTION

NineSigma, representing **Suntory Global Innovation Center Limited**, seeks proposals concerning **the development of technologies to measure human mitochondrial function in a minimally invasive manner**. In particular, our client focuses on the functions involved in the production of ATP by oxidative phosphorylation. Proposals from a wide range of fields such as life sciences, engineering, pharmaceuticals, and medicine are welcome.

KEY SUCCESS CRITERIA

It is desirable to meet all the following requirements (“Essential” and “Conditions welcomed”); however, at this stage, proposals for the development of technologies that are expected to meet the “Essential Requirements” below are welcome.

Essential Requirements

- The items that are correlated with mitochondrial function shall be able to be evaluated quantitatively.
- The method of measurement shall be non-invasive or less invasive such as:
 - Minimally invasive measuring and sampling for urine, sweat, exhalation, body odor, blood, etc.
 - Measurement shall be possible using a wearable device that does not require sampling.

BACKGROUND

Our client aims to support the maintenance and improvement of human physical functions through the development of novel functional foods and beverages. This request focuses on mitochondrial function among human physical functions and seeks a technology that can easily measure human mitochondrial function.

Although a biopsy of the target tissue is commonly required to measure human mitochondrial function, the significant burden on the test subject that is caused by this is a problem to be solved.

Therefore, our client decided to issue this request to companies and researchers all over the world so as to find a joint partner that is willing to develop a technology that measures human mitochondrial function in a minimally invasive manner.

ITEMS TO BE SUBMITTED

[NineSights](#), the platform of NineSigma's Open Innovation community, allows you to manage all your proposals. Please contact the Solution Provider Help Desk phd2@ninesigma.com for assistance about registration and proposal submission.

Proposal may include the following items along the response form shown by clicking the "Respond" button.

- Overview of the proposal
 - Measurement items
 - Required samples
 - Required equipment
 - Measurement method (throughput, etc.)
- Principle of technology
 - Measurement principle
 - Method for assessing mitochondrial function from the measured data
- Reasons to believe that measurement in humans is possible
- Development stage (laboratory level, considering upgrading the scale, commercialized)
- Relevant historical data
 - Test method
 - Results
- Expected problems and solutions in applications targeting this challenge
- Status of intellectual property related to the proposal
- Historical achievements (additional information to prove R&D capabilities, such as research papers, patents, etc.)

- Organization overview

NOTES ON RESPONSE

Proposal shall have clear points and should not include confidential information. Supplemental files may be submitted in addition to the proposal.

RESPONSE EVALUATION

The client will evaluate all responses with the following criteria.

- Overall scientific and technical merit
- Approach to proof of concept or performance
- Economic potential of concept
- Realism of the proposed plan (action items, timeline, roles, deliverables, cost estimation)
- Potential for proprietary position
- Respondents' capability and related experiences

ANTICIPATED PROJECT PROCESS

After reviewing submitted proposals, the client possibly ask clarifying questions before selecting the most suitable candidates for collaboration. The client will select best candidates through evaluations. During the selection process, the client may execute NDA with selected respondents, seek further information disclosure, and discuss specific development targets or potential opportunities.

The client will execute necessary agreements with the selected respondents and move to the advanced development phase. Specifics of any collaboration will be determined through consultation with the concerned parties.