

# Request for Proposal RFP\_2019\_0112: Technology that Prevents Increase in Water Activity of Freeze-dried Bacteria

**RFP Title** Technology that Prevents Increase in Water Activity of Freeze-dried Bacteria

**Due Date** Jun 19

**Opportunity**

**Timeline**

**Financials**

**RFP Description** NineSigma, **representing a multi-billion-dollar food manufacturer, seeks a technology that prevents the increase in water activity of freeze-dried bacteria in food product.** The client aims to maintain the viability of freeze-dried bacteria over a long period of time by preventing the increase in water activity. We also welcome proposals that can improve the viability of freeze-dried bacteria by focusing on the other factors besides water activity. In particular, we expect proposals from organizations that proactively respond to sample testing.

**Background**

**Key Success Criteria**

## **KEY SUCCESS CRITERIA**

At the current stage, proposals that satisfy the requirement of either 1) water activity or 2) viability are welcome.

1) The water activity ( $A_w$ ) of freeze-dried bacteria is maintained at 0.3 or less in substances with  $A_w > 0.6$ , (including aqueous solution) at cold or room temperature (10–25°C) for 1 month to 1 year.

2) The decrease of viability of freeze-dried bacteria can be lowered under the following conditions:

- Refrigerated conditions (10–15°C, 1 month)
- Room temperature conditions (20–25°C, 1 month-1 year)
- Frozen conditions (-18°C, 2 years)

3) Applicable to food

4) Hygienic treatment is possible

**Area of Interest**

Chemistry-Physical > Surface Chemistry

Materials Science > Coatings

Materials Science > Encapsulated Materials

Chemistry-Physical > Surface Chemistry > Surface Chemistry-All disciplines

Materials Science > Encapsulated Materials > Encapsulated Materials-All disciplines

Materials Science > Coatings > Protective coatings

Physics > Chemical Physics > Surface Physics

**Possible Approaches**

## **Possible Approaches**

Possible approaches might include, but are not limited to the following. Proposals from a wide range of technology such as chemical and pharmaceutical fields, including technology that has not been applied to food products, are also welcomed.

- Coating with protective agents
- Oily (hydrophobic) substance
- ionic liquid
  
- Encapsulation
- Physicochemical approach
- Surface treatment (hardening or water repellent treatment etc.)
- Retaining freeze-dried bacteria in oil drops in water

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- Production process of freeze-dried bacteria
- Inclusion of viable freeze-dried bacteria in crystals

**Approaches not of Interest**

**Preferred Collaboration Types** Contract Analysis and Testing  
Contract Research  
Joint Development  
Research Collaboration  
Technology Licensing  
To Be Negotiated

**Items to be Submitted**

**Background**

The client, a leading food manufacturer, is working to produce food products containing freeze-dried bacteria. The viability of freeze-dried bacteria can be maintained for a long time in low water activity, but the viability decreases when the water activity increases. Therefore, it is a challenge to disperse the freeze-dried bacteria in food product without increasing the water activity.

The client has been examining coating technology by using several protective agents, but the effects have not been acceptable. As a result, we decided to seek proposals in order to identify effective technology for preventing the increase in water activity or improving the viability of freeze-dried bacteria from various approaches including coating technology.

**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.

**Award Amount**

**Attachments**

	Name	Creation Time	Size	Created By
	AdditionalInformationShee...	Jun 12 at 10:02 PM	257.58 kB	Kimihiro Tanaka
	RFP2019_0012(0013)_Techno...	Jun 17 at 01:33 AM	161.93 kB	Hiroki Fujiwara

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**Picture**

