



Procurement Hub – Fredericton
301 Bishop Drive
Fredericton, NB E3C 2M6

June 18, 2021

3000582

ADVANCED CONTRACT AWARD NOTICE

TITLE: Protein Extractions of Atlantic Cod Otoliths

ACAN:

The purpose of this Advance Contract Award Notice (ACAN) is to signal the government's intention to award a contract for these services to Memorial University of Newfoundland, 230 Elizabeth Avenue, St. John's Newfoundland and Labrador. Before awarding a contract, however, the government would like to provide other suppliers with the opportunity to demonstrate that they are capable of satisfying the requirements set out in this Notice, by submitting a statement of capabilities during the ACAN posting period.

If other potential suppliers submit a statement of capabilities during this ACAN posting period that meets the requirements set out in the ACAN, the government will proceed to a full tendering process on either GETS or through traditional means, in order to award the contract.

If no other supplier submits, on or before the closing date, a statement of capabilities meeting the requirements set out in the ACAN, a contract will be awarded to the pre-selected supplier.

INTRODUCTION:

This contract aims to develop a pilot study to establish valid otolith biomarker proteins that can measure the impact of global warming on cod.

OBJECTIVES:

This contract will establish the climate-change fish response and/or adaption strategies reflected in its protein expression, which will support the future eco-system-based management of fish stocks. The main objectives of this contract will also consist of evaluating the protein extracts obtained by the various isolation methods for suitability to proteomics sequencing by mass spectrometry and tandem mass spectrometry.

WORK REQUIREMENT:

Requirements for Phase 1:

The contractor must first determine the best otolith protein extraction methods. Protein extraction will be initiated by decalcification with aqueous organic acids. This will be followed by extraction of the Atlantic cod otoliths with different concentrations of various organic acids. In addition, different extraction methods will be assessed.

The contractor must then establish mass spectrometric proteomic profiles of the cod otoliths. Protein extracts will be first separated by 2D-gel electrophoresis and identified by MALDI-TOF-MS. The collected fractions will be digested with trypsin and subsequently analyzed and sequenced by high-resolution LC-ESI-FTICR-MS/MS.

Requirements for Option Phases:

The requirements for optional phases 2 through 4, will consist on performing the same tasks indicated in phase 1 on cod otoliths collected in 3KLMNO Divisions for the year 2010. The ESI-MS and MS/MS analyses and sequencing will have to be performed with a by high-resolution LC-FTICR-MS/MS instrument.

TASKS AND DELIVERABLES:

Tasks:

- 1) Determine the best otolith protein extraction methods.
- 2) Establish mass spectrometric proteomic profiles of the cod otoliths.

Deliverables:

- a) Production of 50 protein extracts from DFO supplied cod otoliths.
- b) Fractionation of the 50 protein extracts by 2D gel electrophoresis.
- c) Protein identification by MALDI-TOF-MS.
- d) Trypsin digestion and sequencing by LC-ESI-FTICR-MS/MS
- e) The new results accomplished from this pilot study project will be reported in a DFO technical report and/or published in a relevant peer-reviewed journal.

RESOURCES AND LEVEL OF EFFORT:

This contract will consist to develop valid extraction methods to isolate all protein constituents of cod otoliths collected in 3KLMNO Divisions. The ESI-MS and MS/MS analyses and sequencing will have to be performed with a by high-resolution LC-FTICR-MS/MS instrument.

The first phase can be broken down as follows:

- a) July 1, 2021 to August 1, 2021: Selection of suitable 50 otoliths from DFO otoliths archives
- b) August 1, 2021 to October 1, 2021: Protein Extraction.
- c) October 1, 2021 to December 1, 2021: Mass spectrometry data collection
- d) December 1, 2021 to March 1, 2022: Data analysis and writing the final report.

MANDATORY CRITERIA:

- Must be familiar with FTICR-MS/MS tandem analysis (infrared multi-photon dissociation, IRMPD, and electron capture dissociation, ECD)
- Must possess a graduate degree (PhD) in Mass Spectrometry

ESTIMATED VALUE

The total value of the contract shall not exceed \$20,000 excluding all applicable taxes for the firm period from contract award to March 1, 2022. Each of the four subsequent Optional Phases are estimated at \$20,000 (each).

TRADE AGREEMENTS APPLICABILITY OR OTHER OBLIGATIONS:

No Trade Agreements apply. Exemption for Fisheries Study.

GOVERNMENT CONTRACTS REGULATIONS EXCEPTION AND LIMITED TENDERING REASONS:

The following policy requirements are applicable to this ACAN process:

Applicable Exceptions to Soliciting Bids under the Government Contracting Regulations (GCRs) (Section 6):

Section 10.2.1 Section 6 (d) only one person or firm is capable of performing the work applies to this ACAN for the following reasons:

- There are no known alternative sources of supply. It is feasible and affordable to compete the requirement.

INTELLECTUAL PROPERTY:

No new Intellectual Property will be created in this contract.

CONTRACT PERIOD:

The period of the contract is from contract award to March 1, 2022 inclusive. The contract will include 4 optional phases each of 8 month duration, to be activated at the discretion of DFO.

Firm Period Phase 1: Contract Award to March 1, 2022

Option Phase 2: March 2, 2022 to November 2, 2022

Option Phase 3: November 3, 2022 to July 3, 2023

Option Phase 4: July 4, 2023 to March 4, 2024

First Period Breakdown:

- e) July 1, 2021 to August 1, 2021: Selection of suitable 50 otoliths from DFO otoliths archives
- f) August 1, 2021 to October 1, 2021: Protein Extraction.
- g) October 1, 2021 to December 1, 2021: Mass spectrometry data collection
- h) December 1, 2021 to March 1, 2022: Data analysis and writing the final report.

SUPPLIER'S RIGHT TO SUBMIT A STATEMENT OF CAPABILITIES:

Suppliers who consider themselves fully qualified and available to provide the services described herein, **must submit a Statement of Capabilities in writing to the Contracting Officer identified in this Notice on or before closing date. The Statement of Capabilities must clearly demonstrate how the supplier meets the advertised requirements.**

CLOSING DATE FOR SUBMITTING STATEMENT OF CAPABILITIES:

July 5, 2021 at 2:00 p.m. (ADT)

Inquiries and statements of capabilities are to be directed to:

Karen Dolan

Contracting Officer

Procurement Hub – Fredericton

Telephone: (506) 429-6073

Email: DFOtenders-soumissionsMPO@dfo-mpo.gc.ca