

Posting Date: April 8, 2020

Closing Date: April 18, 2020 10:30 a.m. ET

Reference Number: 21-026353

To: NCI Bid Board

From: Tanika Crossen
NCI P-ARC Program Analyst
crossent@nih.gov

Subject: NCI Bid Board Posting – Single cell RNA sequencing of a murine model of lung adenocarcinoma

The Laboratory of Human Carcinogenesis has a multifaceted research program integrating basic, translational, clinical, and population research, with a major focus on common and lethal human cancers that include tumors of the breast, colon, esophagus, liver, lung, pancreas and prostate. Our studies utilize a Precision Medicine Strategy. Our main objectives are to conduct investigations that assess: (1) Mechanisms of carcinogenesis including the cellular functions of cancer driving genes; (2) experimental approaches in biological systems for the extrapolation of carcinogenesis data and mechanisms from in vitro models and experimental animals to humans; (3) molecular integrative epidemiology of human cancer risk; and (4) cancer biomarkers of diagnosis, prognosis, and therapeutic outcome.

The Laboratory of Human Carcinogenesis (LHC) has previously used 16S sequencing to determine changes in the microbiome of non-small cell lung cancer patients. We identified one genus, *Acidovorax*, as highly dysbiotic and enriched in cancer patients, particularly smokers and those with *TP53* mutations. Targeted sequencing revealed that *Acidovorax temperans* was species present in these patients.

We have utilized an autochthonous mouse model for lung adenocarcinoma driven by mutant Kras and p53 to determine if repeated exposure to *A. temperans* can increase tumor growth. We have demonstrated that exposure to this bacteria increases tumor growth approximately 5-fold compared to PBS, due to increased inflammation. We hypothesized that exposure to *A. temperans* would induce changes to the gene expression profile in mice. To this end, we propose sequencing RNA isolated from the lung tissues of 8 mice, instilled with PBS (4) or *A. temperans* (4).

Sole Source Justification:

We will purchase reagents required for single cell RNA sequencing from 10X Genomics, which is the sole provider of this technology for the NCI Single Cell Analysis Facility (SCAF), a core facility responsible for preparing single cell libraries and sequencing them. In addition to 10X Genomics, their reagents are available at a discounted price through another vendor who has a pre-existing contract with NCI.

Attached Documents:

SF18

Statement of Work

FAR Clause 52.204-24 Representation Regarding Certain Telecommunications and Video Surveillance Services or Equipment.

FAR Clause 52.213-4 Simplified Acquisitions Terms and Conditions (AUG 2019) is applicable and available in full text upon request

REQUEST FOR QUOTATION (THIS IS NOT AN ORDER)	THIS RFQ <input type="checkbox"/> IS <input checked="" type="checkbox"/> IS NOT A SMALL BUSINESS SET-ASIDE	PAGE 1 OF 1 PAGES 1
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1. REQUEST NO. 21-026353	2. DATE ISSUED 4/8/2021	3. REQUISITION/PURCHASE REQUEST NO.	4. CERT. FOR NAT. DEF. UNDER BDSA REG. 2 AND/OR DMS REG. 1	RATING
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5a. ISSUED BY
NCI CCR Purchasing Administrative Resource Center

5b. FOR INFORMATION CALL (NO COLLECT CALLS)

NAME Tanika Crossen, Program Analyst	TELEPHONE NUMBER AREA CODE NUMBER 301 480-0602	7. DELIVERY <input checked="" type="checkbox"/> FOB DESTINATION <input type="checkbox"/> OTHER (See Schedule)
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8. TO: NIH, NCI

a. NAME	b. COMPANY Government Scientific Source	b. STREET ADDRESS
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c. STREET ADDRESS	c. CITY Bethesda
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d.. CITY	e.. STATE MD	f.. ZIP CODE 20892	d.. STATE e. ZIP CODE MD 20892
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10. PLEASE FURNISH QUOTATIONS TO THE ISSUING OFFICE IN BLOCK 5a ON OR BEFORE CLOSE OF BUSINESS (Date)
4/18/2020 11:30 EST

IMPORTANT: This is a request for information, and quotations furnished are not offers. If you are unable to quote, please indicate on this form and return it to the address in Block 5a. This request does not commit the Government to pay any costs incurred in the preparation of the submission of this quotation or to contract for supplies or services. Supplies are of domestic origin unless otherwise indicated by quoter. Any representations and/or certifications attached to this Request for Quotations must be completed by the quoter.

11. SCHEDULE (Include applicable Federal, State and local taxes)

ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)
	<p>Single cell RNA sequencing of a murine model of lung adenocarcinoma</p> <p>Notice of Intent: If submitting a capability statement, please e-mail only 1 copy of the technical capability statement to Tanika Crossen @ crossent.mail.nih.gov</p> <p>See attached statement of work</p> <p>This will be awarded as a Firm-Fixed Price Contract.</p>				

12. DISCOUNT FOR PROMPT PAYMENT	a. 10 CALENDAR DAYS (%)	b. 20 CALENDAR DAYS (%)	c. 30 CALENDAR DAYS (%)	d.. CALENDAR DAYS NUMBER PERCENTAGE
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NOTE: Additional provisions and representations are are not attached.

13. NAME AND ADDRESS OF QUOTER	14. SIGNATURE OF PERSON AUTHORIZED TO SIGN QUOTATION	15. DATE OF QUOTATION
a. NAME OF QUOTER	16. SIGNER	
b. STREET ADDRESS	a. NAME (Type or print)	b. TELEPHONE AREA CODE
c. COUNTY	c. TITLE (Type or print)	
d. CITY	e. STATE f. ZIP CODE	NUMBER

STATEMENT OF NEED (SON)

1.0 TITLE

Single cell RNA sequencing of a murine model of lung adenocarcinoma

2.0 BACKGROUND

The Laboratory of Human Carcinogenesis (LHC) within NIH-NCI/CCR has previously used 16S sequencing to determine changes in the microbiome of non-small cell lung cancer patients. We identified one genus, *Acidovorax*, as highly dysbiotic and enriched in cancer patients, particularly smokers and those with *TP53* mutations. Targeted sequencing revealed that *Acidovorax temperans* was species present in these patients. We have utilized an autochthonous mouse model for lung adenocarcinoma driven by mutant Kras and p53 to determine if repeated exposure to *A. temperans* can increase tumor growth. We have demonstrated that exposure to this bacteria increases tumor growth approximately 5-fold compared to PBS, due to increased inflammation. We hypothesized that exposure to *A. temperans* would induce changes to the gene expression profile in mice. To this end, we propose sequencing RNA isolated from the lung tissues of 8 mice, instilled with PBS (4) or *A. temperans* (4).

We will purchase reagents required for single cell RNA sequencing from 10X Genomics, which is the sole provider of this technology for the NCI Single Cell Analysis Facility (SCAF), a core facility responsible for preparing single cell libraries and sequencing them. In addition to 10X Genomics, their reagents are available at a discounted price through another vendor who has a pre-existing contract with NCI.

3.0 TYPE OF ORDER

This is a Firm Fixed-Price Purchase Order.

4.0 SPECIAL ORDER REQUIREMENTS

4.1 PRODUCT FEATURES/SALIENT CHARACTERISTICS

The following product features/characteristics are required for this requirement:

All reagents listed below work exclusively with the 10X Genomics platform, which is the equipment used solely by the NCI SCAF.

- Chromium Next GEM Single Cell 3' Kit v3.1 – this kit is used to perform capture of individual cells in gel droplets.
- Chromium Next GEM Chip G Single Cell Kit – this kit is used to generate cDNA from the 3' end of mRNA in each cell for library preparation.
- Dual Index Kit TT Set A 96 rxns – this reagent is used to individually label each sample to allow them to be identified in downstream data analysis.

4.2 DELIVERY / INSTALLATION

Items will delivered to LHC within 10 days of purchase order award. The shipping address is:

STATEMENT OF NEED (SON)

Joshua Stone
37 Convent Drive
Bldg 37, Room 3050
Bethesda, MD 20892
(240)-760-7261

4.3 TRAINING

Single cell gel-based capture and library prep training has already been provided by NCI SCAF to users Joshua Stone and Natalia von Muhlinen. The users require no further training to use the requested items.

52.204-24 Representation Regarding Certain Telecommunications and Video Surveillance Services or Equipment.

As prescribed in 4.2105(a), insert the following provision:

REPRESENTATION REGARDING CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT (AUG 2019)

(a) Definitions. As used in this provision—

Covered telecommunications equipment or services, Critical technology, and Substantial or essential component have the meanings provided in clause 52.204-25, Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

(b) Prohibition. Section 889(a)(1)(A) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2019, from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. Contractors are not prohibited from providing—

(1) A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(2) Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(c) Representation. The Offeror represents that—

It [] will, [] will not provide covered telecommunications equipment or services to the Government in the performance of any contract, subcontract or other contractual instrument resulting from this solicitation.

(d) Disclosures. If the Offeror has responded affirmatively to the representation in paragraph (c) of this provision, the Offeror shall provide the following information as part of the offer—

(1) All covered telecommunications equipment and services offered (include brand; model number, such as original equipment manufacturer (OEM) number, manufacturer part number, or wholesaler number; and item description, as applicable);

(2) Explanation of the proposed use of covered telecommunications equipment and services and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b) of this provision;

(3) For services, the entity providing the covered telecommunications services (include entity name, unique entity identifier, and Commercial and Government Entity (CAGE) code, if known); and

(4) For equipment, the entity that produced the covered telecommunications equipment (include entity name, unique entity identifier, CAGE code, and whether the entity was the OEM or a distributor, if known).

(End of provision)