

NOTICE OF ACQUISITION

POST DATE: February 8, 2021

CLOSING DATE: February 17, 2021

RFQ NUMBER: RFQ NICHD-21-041

CONTACT: Amber Harris
Eunice Kennedy Shriver
National Institute of Child Health
and Human Development
Acquisition Support Branch
6710B Rockledge Drive, Room 1159A
Bethesda, MD 20817

DESCRIPTION:

The National Institutes of Health (NIH), *Eunice Kennedy Shriver* National Institute of Child Health and Human Development on the behalf of the National Institute of Digestive, Diabetes & Kidney Diseases (NIDDK), intends to award a purchase order for the acquisition of Liquid Nitrogen Bulk.

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) conducts and supports research on many of the most serious diseases affecting public health. The Institute supports much of the clinical research on the diseases of internal medicine and related subspecialty fields, as well as many basic science disciplines.

The Institute's Division of Intramural Research encompasses the broad spectrum of metabolic diseases such as diabetes, obesity, inborn errors of metabolism, endocrine disorders, mineral metabolism, digestive and liver diseases, nutrition, urology and renal disease, and hematology. Basic research studies include biochemistry, biophysics, nutrition, pathology, histochemistry, bioorganic chemistry, physical chemistry, chemical and molecular biology, and pharmacology.

NIDDK extramural research is organized into 4 divisions: Diabetes, Endocrinology, and Metabolic Diseases; Digestive Diseases and Nutrition; Kidney, Urologic, and Hematologic Diseases; and Extramural Activities. The Institute supports basic and clinical research through investigator-initiated grants, program project and center grants, and career development and training awards. The Institute also supports research and development projects and large-scale clinical trials through contracts.

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Dr. Clore/Bax labs plan to acquire a microplate reader instrument to be used for assays to monitor protein/peptide fibril formation, as well as COVID-19 main protease activity, using fluorescence detection. We looked for options for this instrument from the vendor TECAN U.S. because this replaces an existing Tecan plate reader and it is the same brand of plate readers in other sections of LCP. A TECAN U.S. instrument and its parameters are necessary for the continuity of ongoing experiments and projects.

The objective of this order is to procure a microplate reader instrument from TECAN U.S. It is to be used for THT assays to monitor protein/peptide fibril formation as well as measure COVID-19 main protease activity using a FRET substrate.

Specifically, the NIDDK requires the following:

SALIENT / REQUIRED FEATURES AND SPECIFICATIONS:

infinite M series (MNano, MPlus, MPlex) SOLE SOURCE SPECIFICATIONS

Instrument Requirements

Detection Modes	Absorbance (Abs) Fluorescence Intensity (FI) Top / FI Bottom with Optimized Read Time-Resolved fluorescence (TRF), Luminescence Photon Counting (Lumi)
Wavelength Selection	Quadruple monochrometers (tunable in 1nm steps. 230nm to 1000nm) 2-Excitation (EX) and 2-Emission (EM) monochrometers The required instrument must have a total of 4 monochromators to reduce stray light to 2×10^{-7}
Bandwidth Selection	EX: 5nm for $\lambda \leq 295\text{nm}$; 9nm for $\lambda > 295\text{nm}$; EM: 20 nm
Light Source	10-Watt UV Xenon Flash Lamp The system must have ONLY ONE light source to minimize maintenance expenses
Detectors	Photomultiplier Tube (PMT): analogue-type for fluorescence measurements Standard PMT: EX 230-600nm, EM 330-600nm

Optional spectrally enhanced (red shifted) PMT: EX 230-850nm, EM 280-850nm

UV Silicon Photodiode for absorbance measurements

Photon Counting (CPS) PMT for luminescence

EACH detection mode must have its own dedicated detector for increased sensitivity

Measurement Speed 20sec, 96-well plate; 30sec 384-well plate
Wavelength EX/EM-scan, 96-well plate, 450-550nm, 5nm step: 125sec

Plate Formats 6, 12, 24, 48, 96, and 384-well plates; cuvettes
User created Plate Definition Files allows for custom microplate definitions for all plate types plates.
If microvolume measurement is required, must be capable of handling 2ul volumes on a NanoQuant plate. NanoQuant plate MUST be free of Teflon.

Software: i-Control – standard
Must be able to select individual non-continuous wells
(RAW data acquisition sent directly to MS-Excel[®] including measurement parameters)
Magellan - optional (instrument control and full data reduction)

Temperature Incubation Ambient +5⁰C up to 42⁰C optimized to eliminate ‘‘edge well effect’’

Shaking **Linear and orbital**; 1– 600 secs; amplitude from 1 – 6mm in 0.5mm increments
Movement, speed and amplitude must be user selectable

The following optional items should be available as a later addition to the instrument in the likely event that future experiments require such items:

Optional NanoQuant Plate 16 Position Quartz Optics Based Plate for Low Volume (2 ul) NA
Quantification; must require no calibration or correction factors;

Optional Cuvette Port Module 10mm pathlength cuvettes for quick Abs measurement
4 position cuvette plate accessory.

Optional Injector Module **Must have 2 injectors. Must have Quick prime/flush button independent of software.**

Must have a plate In/Out button independent of software connection.

Power Source **120V, Power source should be internal to the instrument (NOT external) in order to protect users from any accidental spill in the lab.**

In no circumstances should the user be required to open the instrument (Not for installation and not for maintenance).

General Specifications

Fluorescence Module

Wavelength Range	230-850nm in 1nm increments
Measurement Range	0 – 60,000 RFU / 0 – 6,000,000 RFU (extended dynamic range)
PMT Gain Adjustment	1 – 255
FI top reading	170 amol / well (384 well plate)
FI bottom reading module	1.2 fmol / well (96 well plate)
TRF	90 amol / well (384 well plate)
Miscellaneous.	Well Scanning (multiple read points per well; Round shape, square shape, vertical or horizontal line) Internal Auto Spectral Correction Must have Z focusing capability (fully automatic)

Absorbance Module

Wavelength Range	230 – 1000nm 0 to 4 OD
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Luminescence Module

Wavelength Range	400 – 700nm
Linear Dynamic Range:	8 decades
Cross-talk (96 well plate):	< 0.01 %
Sensitivity	12 amole ATP/well based on real aqueous sample. Gas standards for establishing sensitivity limit do not reflect real applications.

Dual Color **BRET and NanoBRET assay capable**

Integration times adjustable from 20-2000 μ sec in 1 μ sec steps.
Dedicated low noise dark count Photon Counting Tube.

Automatic Attenuation: 2 OD Automatic Attenuation of bright samples

Injector Module (optional)

Pump speed	100 - 300 μ l/s
Injection volumes	selectable in 1 μ l increments. 1 ml syringes.
Dead volume	100 μ l including pump back and back flush. Injectors must be completely separate from the instrument in order to easily clean them. Pump stroke must be activated by external button independent from software for ease of cleaning. Both injectors must be capable to work with both 96 and 384 well plates formats.

Tecan's Infinite M200 and F200 PRO Microplate Reader

Tecan Incorporated is the manufacturer and sole provider for this instrument, which incorporates unique capabilities and functionalities as described below:

- UV and VIS absorbance, excitation scans, emission scans, spectral scans, fluorescence top read with time-resolved fluorescence (TRF) and fluorescence resonance energy transfer (FRET), enhanced PMT with 4 monochromators (quadruple monochromators; 2-Excitation 2-Emission). Quadruple monochromators are required to blocking of undesired wavelengths/stray light and are found to be more efficient (10⁻³ vs. 10⁻⁶, a value typical of most interference filters). Because of this higher level of blocking, the Infinite M200Pro does not require cut off filters as typically found in dual mono readers.
- Specialized Quartz Optics via the NanoQuant capacity for concentrations as low as 1ng/ul (in a 2ul volume). The NanoQuant plate is the first plate of its kind on the market and very intelligently designed. Robust, No consumables required and no wearable parts.
- The infinite 200 plate reader is available with either a single injector or dual injectors for flash kinetics in absorbance, fluorescence and luminescence.
- i-Control Software (data acquisition, MS-Excel interface), Magellan Software instrument control and full data reduction).
- The software allows for automatic switching between modes absorbance, fluorescence and luminescence, and all plate formats are allowed, from a single petri dish to high-density 384-well microplates including flat-bottom, U-bottom and V-bottom terasaki plates and cuvettes, well scanning (multiple read points per well) and internal auto spectral correction
- A robust plate shaking mechanism allows for orbital or linear shaking at different speeds and amplitudes. Temperature control: 5°C above ambient to 42°C.

All these specifications are required for THT assays to monitor fibril formation as well as assaying COVID-19 main protease using a FRET substrate.

Task Area 1 – Delivery is 4-6 weeks ARO

Task Area 2 - Shipping and handling charges will be added to the invoice. If special delivery arrangements are necessary (truck with lift gate, inside delivery and unpacking services, advance notice before delivery), please clearly indicate these needs on the Purchase Order. Charges for additional shipping services will be added to the invoice. Customer will accept the instrument when the equipment is delivered to customer location as stated on the quote.

Task Area 3 - The customer will provide a compatible Win 7/10 computer with local administrator rights, required for software installation, at time of installation.

Task Area 4 – Software and warranty are described as is on the quote.

PERIOD OF PERFORMANCE:

The period of performance is: Within 60 Days of Award.

The provision at FAR clause 52.212-1, Instructions to Offerors – Commercial Items, applies to this acquisition.

The provision at FAR clause 52.212-2, Evaluation – Commercial Items, is applicable. Award will be made to the contractor providing the most advantageous quote to the Government. Technical factors, past performance, and price considered with technical factors outweighing price.

FAR clause 52.212-3, Offeror Representations and Certifications – Commercial Items, is applicable. An offeror shall complete only paragraphs (b) of this provision if the offeror has completed the annual representations and certificates electronically via <http://www.acquisition.gov>. If an offeror has not completed the annual representations and certifications electronically at the System for Award Management (SAM) website, the offeror shall complete only paragraphs (c) through (p) of this provision.

All responses received, before the closing date, of this announcement will be considered by the Government. Information received will normally be considered solely for the purpose of determining whether to conduct a competitive procurement. All responsible sources may submit a quotation which, if timely received, shall be considered by the Government.

1. REQUEST NUMBER NICHD-21-041	2. DATE ISSUED 02/08/2021	3. REQUISITION/PURCHASE REQUEST NUMBER 5932647	4. CERT. FOR NAT. DEF. UNDER BDSA REG. 2 AND/OR DMS REG. 1 <input type="checkbox"/>	RATING
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5a. ISSUED BY
Department of Health and Human Services, Eunice Kennedy Shriver, National Institute of Child Health and Human Development, 6710B Rockledge Drive, Room 1155A, Bethesda, MD 20817

5b. FOR INFORMATION CALL (NO COLLECT CALLS)

NAME Amber Harris	TELEPHONE NUMBER AREA CODE: 301 NUMBER: 402-8778	7. DELIVERY <input type="checkbox"/> FOB DESTINATION <input type="checkbox"/> OTHER (See Schedule)
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8. TO:

a. NAME	b. COMPANY	9. DESTINATION a. NAME OF CONSIGNEE
c. STREET ADDRESS		b. STREET ADDRESS
d. CITY		c. CITY
e. STATE	f. ZIP CODE	d. STATE e. ZIP CODE

10. PLEASE FURNISH QUOTATIONS TO THE ISSUING OFFICE IN BLOCK 5a ON OR BEFORE CLOSE OF BUSINESS (Date)
02/17/2021

IMPORTANT: This is a request for information and quotations furnished are not offers. If you are unable to quote, please so 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 service. Supplies are of domestic origin unless otherwise indicated by quoter. Any representations and/or certifications attached to this Request for Quotation must be completed by the quoter.

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

ITEM NUMBER (a)	SUPPLIES/SERVICES (b)	QUANTITY (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)
1	Infinite Base Unit, M200 and F200 PRO Microplate Reader, includes 1 year warranty	1			\$0.00
2	Mplex Option, Tunable Wavelength Optics for UV-Vis Absorbance and Fluorescence (top and bottom reading). Luminescence with sensitive photon counting PMT	1			\$0.00
3	Power Cable	1			\$0.00
4	Magellan Pro 7.3, 2-site	1			\$0.00
5	Manual, Magellan Pro 7.3	1			\$0.00
6	Shipping & Handling				

12. DISCOUNT FOR PROMPT PAYMENT <input type="checkbox"/>	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 a. NAME OF QUOTER b. STREET ADDRESS c. COUNTY d. CITY	14. SIGNATURE OF PERSON AUTHORIZED TO SIGN QUOTATION 16. SIGNER a. NAME (Type or print) c. TITLE (Type or print)	15. DATE OF QUOTATION b. TELEPHONE AREA CODE NUMBER
e. STATE f. ZIP CODE		

BID BOARD.Always Applicable Clauses.

- 52.219-28, Post-Award Small Business Program Representation (NOV 2020) (15 U.S.C. 632(a)(2)).
- 52.222-19, Child Labor–Cooperation with Authorities and Remedies (Jan 2014) (E.O. 13126).
- 52.222-21, Prohibition of Segregated Facilities (APR 2015).
- 52.222-26, Equal Opportunity (SEP 2016) (E.O. 11246).
- 52.222-36, Equal Opportunity for Workers with Disabilities (JUN 2020) (29 U.S.C. 793).
- 52.222-50, Combating Trafficking in Persons (OCT 2020) (22 U.S.C. chapter 78 and E.O. 13627).
- 52.223-18, Encouraging Contractor Policies to Ban Text Messaging While Driving (JUN 2020) (E.O. 13513).
- 52.225-1, Buy American--Supplies (May 2014) (41 U.S.C. chapter 83).
- 52.225-13, Restrictions on Certain Foreign Purchases (JUN 2008) (E.O.'s, proclamations, and statutes administered by the Office of Foreign Assets Control of the Department of the Treasury)
- 52.232-33, Payment by Electronic Funds Transfer– System for Award Management (Jul 2013) (31 U.S.C. 3332).