

Notice of Intent to Certify Sole Source

To: Interested Parties

From: Jennifer Douglas
Administrative Director, Category Management and Procurement

Date: January 26, 2024

Re: Sole Source Certification Number **SS5838** for **Imaging Flow Cytometer and all associated components**

Contact Email Address: solesource@umc.edu

Sole Source Certification Award Details

Regarding UMMC Sole Source Certification Number **SS5838** for **Imaging Flow Cytometer and all associated components**, please be advised that UMMC intends to award the purchase to Cytek as the sole source provider.

UMMC issues this notice in accordance with Mississippi state law, policy, and procedures for sole source procurements.

Sole Source Criteria

1. Where the compatibility of equipment, accessories, or replacement parts is the paramount consideration (and manufacturer is the sole supplier).
2. Where a sole supplier's item is needed for trial use or testing.
3. Where a sole supplier's item is to be required when no other item will service the needs of UMMC.

Schedule

Task	Date
First Advertisement Date	February 2, 2024
Second Advertisement Date	February 9, 2024
Response Deadline from Objectors	February 16, 2024 at 3:00 p.m. Central Time
Notice of Award/No Award Posted	Not before February 26, 2024

Project Details

1. Describe the commodity that the agency is seeking to procure:

The University of Mississippi Medical Center (UMMC) seeks to purchase a four-laser imaging flow cytometer, an instrument that seamlessly combines the functionalities of a flow cytometer with those of a rapid, high-resolution fluorescence microscope. A flow cytometer is an instrument for examining the characteristics of cells or particles in a fluid. This includes assessing factors such as size, granularity, relative quantities of specific cell surface and intracellular proteins, and cell viability based on fluorescence and light scatter. The cytometer integrates this technology with that of a traditional fluorescence microscope. The instrument is equipped with four lasers; Violet 405 nm, 120mW; Blue 488nm, 200mW; Red 642 nm, 150mW, and a darkfield laser 785 nm, 70 mW. The instrument's high-speed camera has three objectives to capture images at 20x, 40x, or 60x magnification. As such, this advanced instrument can measure the intensity of up to 10 different colors of fluorescence associated with each cell while simultaneously providing up to 12 high-resolution images per cell at a rate of up to 5,000 cells per second.

2. Explain why the commodity is the only one (1) that can meet the needs of the agency:

The integration of fluorescence microscopy and flow cytometry that this product provides allows for a more comprehensive understanding of cellular characteristics and functions than what is possible with any other single-instrument technology. This is necessary for advanced research applications in cell biology, immunology, and cancer research, where detailed analysis of individual cells in a population is crucial. No other instrument can capture 12 high-resolution fluorescence microscopy images of individual cells while at the same time collecting multiparametric flow cytometry data from the same cells.

3. Explain why the source is the only person or entity that can provide the required commodity:

Cytek® Biosciences is the sole manufacturer of the Cytek® Amnis® ImageStream®x Mk II Imaging Flow Cytometer. There is no other distributor of this instrument in the USA.

4. Explain why the amount to be expended for the commodity is reasonable:

The estimated annual amount to be expended for the purchase of the Imaging Flow Cytometer and associated components is \$496,200.00. This amount is within the expected price range for these products.

5. Describe the efforts that the agency went through to obtain the best possible price for the commodity:

Through market intelligence, UMMC was able to negotiate best pricing for these products. All applicable discounts were explored and applied.

Submission Instructions and Format of Response from Objecting Parties

Interested parties who have reason to believe that the Imaging Flow Cytometer and all associated components, (hereafter, “Products”) should not be certified as a sole source should provide information in the Vendor Form for the State to use in determining whether or not to proceed with awarding the sole source to Cytek. The Vendor Form may be found at <http://www.dfa.state.ms.us/Purchasing/documents/ObjectiontoSoleSourceDetermination.pdf>.

Objections must include the certification in Attachment B.

Comments will be accepted at any time prior to February 16, 2024, at 3:00 p.m. (Central Time) to solesource@umc.edu. Responses may be delivered via email to solesource@umc.edu. UMMC WILL NOT BE RESPONSIBLE FOR DELAYS IN THE DELIVERY OF RESPONSES. It is solely the responsibility of the Interested Parties that responses reach UMMC on time. Responses received after the deadline and responses that lack all required information will be rejected. UMMC reserves the right to inspect Interested Party’s commodity for comparison purposes.

If you have any questions concerning the information above or if we can be of further assistance, please contact solesource@umc.edu.

Attachment A: Vendor Correspondence

Attachment B: Objection Certification

Attachment A



Unique Features, Capabilities and Selling Points of the Cytex[®] Amnis[®] ImageStream[®] Mk II Imaging Flow Cytometer

This document confirms Cytex[®] Biosciences is the sole manufacturer of the Cytex[®] Amnis[®] ImageStream[®] Mk II Imaging Flow Cytometer.

The ImageStream[®] Mk II system is a unique combination of flow cytometry and very fast, high-resolution fluorescence microscopy. The special features of this technology are based on the fact that it is not only capable of measuring fluorescence intensity associated with cells or particles, but it also provides high resolution images of every cell at the same time. These images enable many types of novel applications based on morphological parameters, but the system is also able to address traditional flow cytometry and microscopy applications as well. The ImageStream[®] Mk II is capable of measuring up to 12 images per cell at 5,000 cells per second (~300,000 cells per minute), which allows the user to identify rare populations of cells with a very high degree of accuracy and verify that population using images.

By combining brightfield, darkfield, and multiple fluorescent images of each cell, along with the speed necessary to image a statistically significant numbers of cells, researchers can make determinations no other single instrument alone can achieve. Examples of unique capabilities and bioassays reported in the scientific literature on the ImageStream[®] Mk II System include:

- **High resolution images in flow:** To accommodate a diversity of cell types and sizes the ImageStream[®] Mk II captures images at 20x, 40x or 60x magnification with $1\mu\text{m}^2$, $0.5\mu\text{m}^2$ and $0.3\mu\text{m}^2$ resolution respectively.
- **Tunable laser power:** Flow cytometry samples can vary greatly in overall fluorescence intensity. The ImageStream[®] Mk II system can be optimized for each experiment by adjusting the laser power to maximize the fluorescence intensity for each use case.
- **Spectral compensation of images:** Accurately measuring colocalization of probes using multiple fluorochromes requires image compensation on a pixel by pixel basis. ImageStream[®] Mk II captures single color compensation controls and automatically computes and applies this compensation matrix.
- **Characterizing morphology using masks and features:** Quantitative microscopy experiments require a robust feature set. ImageStream[®] Mk II generates 86 base features, and allows users to create custom masks and features that measure fluorescence intensity and morphology. IDEAS[®] with machine learning (ML) allows custom experiment specific features to be generated using ML.
- **Simplified workflow with wizards and analysis templates:** Novice users can struggle with image analysis. ImageStream[®] Mk II has eight wizards for core applications that make it simple for first time users. An analysis template can be saved for each assay making it simple to share analysis and repeat experiments.
- **Analysis with machine learning and AI tools:** Complex image-based applications require advanced analysis tools. Amnis[®] AI analysis software allows users to directly load their ImageStream[®] Mk II data into software that uses artificial intelligence (AI) with convolutional neural networks (CNN) to analyze their data.
- **Visual verification of every cell:** Unlike conventional flow cytometry, imaging cytometry allows gate boundaries to be optimized via visual feedback for improved population definition and identification of outliers and artifacts.

Attachment B

**SUBMITTED IN RESPONSE TO
Sole Source Certification No. SS5838
Accepted until February 16, 2024 at 3:00 p.m.**

I certify that the information contained in this objection is true and accurate to the best of my knowledge. I understand that UMMC will investigate all statements made in this objection and that any false or misleading information provided may result in adverse action.

Objector Name
Objector's title

Date