**Mississippi State University  
Notice of Proposed Sole Source Purchase**

**234-21**

Mississippi State University anticipates purchasing the item(s) listed below as a sole source purchase. Anyone objecting to this purchase shall follow the procedures outlined below.

1. **Commodity or commodities to be purchased (make, model, description):** We are requesting purchase of the Formulatrix Rock Imager 182 Crystallography Hotel. This equipment is used to automate the storage and monitoring of protein crystal formation for enhancing the structural biology components of our research. This equipment will occupy a bench top space within the Johnson laboratory and must fit within a 3 x 3 x 4 ft requirement. This equipment will provide a temperature controlled bay that holds 182 x 96 well plates. Trays will be automatically be moved by an internal robotic arm from the hotel bay to an internal microscope where each of the 96 wells will be imaged. Images will be collected with incremental focus and merged to provide optimal detection of crystal formation activity. Images will be collected with both visible and UV light in order to aid identification and delineate between protein and salt crystals. We will use the resulting crystals for atomic resolution structural characterization.
2. **Explanation of the need to be fulfilled by this item(s), how is it unique from all other options, and why it is the only one that can meet the specific needs of the department:** The Johnson laboratory seeks capabilities to automate the monitoring of protein crystal formation and improve its detection capabilities and workflow. Specifically, we aim to acquire equipment that can store 180 x 96 well plates containing recombinantly produced protein in crystallography buffers under temperature controlled conditions. We require the equipment to provide images of each experimental condition within each plate on a daily basis at a user defined schedule. Importantly images need to be collected with both visible and Ultra-Violate (UV) light as this will allow us to discern if observed crystals are comprised of protein or salt. During the image acquisition process, a series of images should be collected with incremental focal planes and then merged to provide an optimal picture to ensure all crystal formation activity is detected and documented. This type of optimal imaging is unique to the Formulatrix Rock Imaging system. Data should be stored on a computer where it can be accessed remotely. The equipment is too be less than 600 lbs and occupy a bench top footprint of no greater than 3 x 4 x 4 feet (l x w x h). The equipment needs to operate using 120 volts and < 18 amps in current. To the best of our knowledge the Formulatrix Rock Imaging System is the only equipment available that meets these requirements.
3. **Name of company/individual selling the item and why that source is the only possible source that can provide the required item(s):**

Formulatrix, LLC

5 DeAngelo Dr, Bedford, MA 01730

Phone 1.781.788.0228

Fax 1.781.207.5522

www.formulatrix.com

The incremental focused imaging and monitoring process is unique to the Formulatrix ROCK imager. This provides the equipment with a unique capability of detecting crystalline formation and activity at a level that is not possible with other automated systems.

1. **Estimated cost of item(s) and an explanation why the amount to be expended is considered reasonable:** The $216,007 cost is considered reasonable as the instrument will perform a task that would require thousands of man hours for manually screening of crystallography trays and manual documentation of results. It is anticipated that this equipment will aid the advancement of the Johnson laboratory scientific capabilities to an extent that they are be competitive for attracting additional external grant funding.

1. **Explanation of the efforts taken by the department to determine this is the only source and the efforts used to obtain the best possible price:** To ensure this is the only equipment available that meets our needs at the best possible price Dr. Johnson has performed numerous internet searches, spoken with multiple sales representatives at several companies, as well as engaged discussion with other peer scientists at Vanderbilt University Medical Center, and other protein crystallography scientists at the University of Alabama.

Any person or entity that objects and proposes that the commodity listed is not sole source and can be provided by another person or entity shall submit a written notice to:

Don Buffum, CPPO  
Director of Procurement & Contracts  
[dbuffum@procurement.msstate.edu](mailto:dbuffum@procurement.msstate.edu)  
Subject Line must read “Sole Source Objection”

The notice shall contain a detailed explanation of why the commodity is not a sole source procurement. Appropriate documentation shall also be submitted if applicable.

If after a review of the submitted notice and documents, MSU determines that the commodity in the proposed sole source request can be provided by another person or entity, then MSU will withdraw the sole source request publication from the procurement portal website and submit the procurement of the commodity to an advertised competitive bid or selection process.

If MSU determines after review that there is only one (1) source for the required commodity, then MSU will appeal to the Public Procurement Review Board. MSU will have the burden of proving that the commodity is only provided by one (1) source.

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