UNIVERSITY OF MISSISSIPPI

Notice of Intent to Certify Sole Source

SS 289

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

Commodity or commodities to be purchased (manufacturer, model, description):

TA Instruments Affinity ITC - Isothermal Titration Calorimeter

The need to be fulfilled by this item(s) and why it is the only one that can meet the specific needs of the department:

The Affinity ITC – Isothermal Titration Calorimeter is the only instrument with the required functionality to characterize molecular binding events and structural stability of the materials generated within our research program. Isothermal titration calorimetry (ITC) is a powerful analytical technique for in-depth characterization of molecular binding events and structural stability. Thermodynamic binding signatures not only reveal the strength of a binding event, but the specific or nonspecific driving forces involved. This instrument will be used for research as part of the Nano-Bio ImmunoEngineering Consortium (NIEC) and is compatible with other characterization instruments used in the labs of Dr. Tanner (chemistry), Dr. Werfel (BME) and Dr. Smith (Ch E). The Affinity ITC is the only microcalorimeter on the market that meets our research needs. In particular, it is the only instrument on the market that provides slower stirring speeds (125 rpm), active cooling, and a specialized paddle for mixing. All of these functions are unique to the Affinity ITC and are critically important for precise and accurate analysis of the interactions of our materials with biomolecules like proteins. Below are the specific technical requirements necessary for us to conduct our research that this instrument provides: -The Affinity ITC has a cylindrical cell which maximizes stirring efficiency which eliminates dead zones and air bubbles which are common in the competitive coin shaped cell. Air bubbles change the volume and heat capacity which leads to inaccurate data. -The AccuShot titrant delivery system delivers the right amount of titrant to the right location every time. The syringe needle is positioned on top of the stirring paddle for better mixing. The FlexSpin paddle's new shape and separation from the injection system also provides better mixing. Better mixing produces sharper peaks and faster return to baseline. The syringe is also much more robust than the competitive system. -Because of the more efficient mixing, the Affinity ITC can stir at much slower speeds than the competitive system. It typically stirs at 125 rpm and has a maximum stir rate of 200 rpm. The competitive system stirs at 700 rpm. Slower stirring rates are incredibly important for proteins. Faster stirring can lead to protein shearing and the proteins falling out of solution during the test. -The Affinity ITC has both active heating and cooling which results in incredible baseline stability. The competitive system does not have active cooling which results in sloped data which can lead to inaccuracies in data analysis. -The Affinity ITC is easy to use.

There is a loading wizard in the software to walk a user through loading the syringe. Once the syringe is loaded, it can be used for a few runs. The competitive system can only run one run from a loaded syringe. The cleaning station provides automated cleaning of the sample cells. - The stirring system is independent of the injection system and is user replaceable. Both the injection syringe and the sample delivery cannula are also user-replaceable. Specifications Minimum Detectable Heat: 0.04 µJ Maximum Measurable Heat: 5,000 µJ Low Noise Level: 0.0013 µWatt Baseline Stability: 0.02 µWatt/hr Temperature Stability: 5ºµC at 25ºC Operating Temperature: 2 ºC to 80ºC Active Cell Volume: 190 µL Response Time: 3.3 Seconds Cell Geometry: Fixed Cylindrical Cell Composition: Gold Stir Speed Range 0-200 rpm Recommended Stir Speed 125 rpm Injection Syringe Volume up to 250 µL Minimum Injection Volume 0.01 µL

Name of company/individual selling the item and why that source is the only possible source that can provide the required item(s):

The Affinity ITC is manufactured and sold directly (not through any dealers) by TA Instruments. No other microcalorimeter on the market has the features necessary to conduct our research, specifically the 125 rpm stir speed, specialized paddle shape, and active cooling system.

Why the amount to be expended for the commodity is reasonable:

The amount is reasonable because this instrument is required for our research and is compatible with existing lab equipment.

Efforts that the agency went through to obtain the best possible price for the commodity:

Multiple discussions were held with the sales representative from TA instruments.

Submission Instructions and Format of Response from Objecting Parties:

Interested parties who have reason to believe that the item(s) above should not be certified as a sole source should provide information in the following format for UM to use in determining whether or not to proceed with awarding the Sole Source purchase.

1.1 **Interested Party Information**

1.1.1 **Contact Name, Phone Number, Address and email address**

1.1.2 **Company Website URL, if applicable**

1.2 **Objection to Sole Source Certification**

1.2.1 **Interested parties must present specific objections to the Sole Source certification using the criteria listed above.**

1.2.2 **A statement regarding the Interested Party's capabilities as related to this Sole Source Certification Request.**

1.3 **Comments will be accepted at any time prior to Monday, October 17, 2022 at 10:00 am (Central Time) to Katherine Jones at kajones4@olemiss.edu (with Cc: to purchase@olemiss.edu) at The University of Mississippi Procurement Services Department, 164 Jeanette Phillips Drive, PO Box 1848, University, Mississippi 38677. Responses may be delivered by hand, via regular mail, overnight delivery, or e-mail. The envelope or email should reference the sole source number. UM WILL NOT BE RESPONSIBLE FOR DELAYS IN THE DELIVERY OF RESPONSES. It is solely the responsibility of the Interested Parties that responses reach UM on time. Interested Parties may contact Katherine Jones to verify the receipt of their Responses. Responses received after the deadline will be rejected.**

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

If UM determines after review that there is only one (1) source for the required commodity, then UM will appeal to the Public Procurement Review Board for approval to purchase.