Proposed Sole Source Purchase Form

Pursuant to New Mexico Procurement law, the UNM Purchasing Department will post your completed form on the UNM Sunshine Portal for 30 days prior to purchase of the goods/services.

I. GENERAL INFORMATION. PLEASE PROVIDE THE FOLLOWING:

<table>
<thead>
<tr>
<th>Date of Request</th>
<th>Requisition Number (If Applicable)</th>
<th>Request Submitted by</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/2/18</td>
<td>99787822</td>
<td>Shea McClain</td>
<td>Research Scientist I</td>
</tr>
<tr>
<td>Department</td>
<td>Email</td>
<td>Amount</td>
<td></td>
</tr>
<tr>
<td>Pharmaceutical Sciences</td>
<td><a href="mailto:Smcclain@salud.unm.edu">Smcclain@salud.unm.edu</a></td>
<td>$111,693.56 + tax</td>
<td></td>
</tr>
</tbody>
</table>

Proposed Vendor | Life Technologies Thermo Fisher

Buyer Team - See Commodity list at [http://www.unm.edu/~purch/commcodes.pdf](http://www.unm.edu/~purch/commcodes.pdf)

Provide a basic description of goods/services to be provided:
Acoustic Assisted Flow Cytometer – blue 3-channel laser, violet 6-channel laser and red 3-channel laser plus Forward/Side Scatter.

Why is this purchase needed?
The system enables analyzing and counting cells in suspension, and can be used to quantify sub-populations of cells based on physical properties and fluorescent labels attached to specific proteins.

II. BASIS FOR SOLE SOURCE PROCUREMENT. CHOOSE APPLICABLE BOX(ES) AND PROVIDE ADDITIONAL INFORMATION, AS REQUESTED:

- Proprietary item, technology or service only available from the proposed vendor. (Check box and describe proprietary component)

  Acoustic focused flow cytometer with 3 lasers (Blue, Red and Violet). Contains patented piezoelectric device at 2.5 Mhz to help focus cells across laser interrogation point at high flow rates up to 1 ml/min and provide better data precision (%CV's). Also, must have flat top lasers for better stability and less alignment by field service engineers.

- Compatibility requirement with existing item, technology or service. (Check box and describe compatibility requirement)
☐ Renewal of support/maintenance/subscription of software, technology or other intellectual property. (Check box and describe)

☒ Other Basis for Sole Source: Please describe below:

1. Local field service engineer must reside in Albuquerque, NM area.
2. The instrument uses flat-top lasers, fiber optics and fixed optical alignment, and is designed to be highly stable so that, under normal operation, the customer is not required to align optics.

III. SUPPLEMENTAL DETAILS. PLEASE PROVIDE ADDITIONAL INFORMATION AS REQUESTED BELOW:

Describe in detail the unique capabilities of the proposed vendor's goods/service and/or personnel performing the work and why this constitutes the only source. Focus on what is unique about the goods/service and why no other vendor could meet your needs.

1. The instrument can process samples at sample flow rates between 12.5 µL and 1,000 µL per minute, providing both high sensitivity and high flow rates. This capability also provides a high degree of flexibility in the types of analyses that can be performed.
2. Able to acquire up to 14 parameters on a single sample: up to 12 colors of fluorescence data, plus forward and side scatter. Blue laser at least 50 milliwatts*. Red laser at least 100 milliwatts*. Violet laser at least 50 Milliwatts*. *Laser power must be measured at flow cell and not at laser source.
3. Must have at least 6 detector channels off Violet laser.
4. The instrument permits the adjustment of the photomultiplier gain, allowing user control over collection of experimental data.
5. The instrument’s fluorescence sensitivity is:
   ≤80 MESF, FITC
   ≤30 MESF, PE
   ≤70 MESF, APC
6. The instrument has 3 spatially separated lasers, which provide significant benefits for compensation when performing multicolor experiments.
7. The instrument provides at least 6 decades of resolution, enabling high data accuracy, it can capture up to 35,000 events/second, based on a 10% coincidence rate per Poisson statistics, enabling high data-collection rates.
8. The instrument has calibrated sample volume delivery with minimal draw variation, which enables the ability to perform accurate absolute cell counts without the use of counting-bead products.
9. The instrument loads sample via syringe, enabling sample recovery, while reducing sample volume requirements and waste.

10. The instrument has a minimum uptake volume of 20 µL and a maximum of 4 mL.

11. The instrument provides the ability to perform analyses of blood samples without the need to lyse, wash, or concentrate samples.

12. The software provides automated start-up and shutdown capability.

13. The software must be designed for real-time analysis during data acquisition or post-acquisition.

14. All maintenance functions, including unclog, debubble, and system decontamination are fully automated in the software, minimizing hands-on time.

15. Optical filters must be easily replaceable by end user.

16. Instrument itself only occupies 23" inches of linear bench space including liquid containers and uses less energy than a 60 watt light bulb. It is easily movable and weighs only 64 lbs.

17. The autosampler must accommodate both 96 and 384 well plates. Plates can be standard or deep well. The latter is for ease of use, process more cells and sample prep in the well.

18. Both plates and tubes can be used in the same run without priming, tools and no extensive switchover. Simple programming is only needed. A manual valve or switch must not be needed to change from tubes to plates.

19. Autosampler must mix samples by aspiration (simulating pipette mixing) and not by shaking or vibration. Ability to program 1-10 mixes and 1-10 rinses unattended must be available. This is for better homogeneity and less carryover than 0.5%.

Describe the due diligence made to locate other possible sources including communications with other universities, communications with similar providers, web searches, yellow page searches, review of advertisements and trade publications, etc.

Similar instruments of like, kind, and quality were web search from such companies that had a 3-laser, syringe operated system. Miltenyi and Life Technologies were the two main contenders for system requirements and capabilities. Both companies came to UNM in late 2017 to give individual presentations for their instruments.

List the other vendors who were contacted. Please describe the specs/qualifications/criteria that the other vendors were unable to satisfy.
We looked at Miltenyi Biotec because it has a similar system: MACSQuant 10 (violet-blue-red), which has the same lasers but only 10 colors compared to the Attune Nxt’s 12 colors. Miltenyi does not have the same high throughput capacity as the Attune Nxt nor has acoustic assisted flow dynamics.

Please list the other vendors who were contacted. Please describe the specs/qualifications/criteria that the other vendors were unable to satisfy.

Univ of New Mexico (Biology Dept) is an excellent reference for a 4-laser Attune Nxt flow cytometer and autosampler

VA Medical Center – Albuquerque NM is another excellent 3-laser Attune Nxt reference

Other vendors could not meet:
Sample recovery
Absolute Cell counts
Ability to run 1000ul/min with good precision
Autosampler that can do standard and deep 96/384 wells
Pipette mixing in autosampler
Ability to run 35,000 events/sec which impacts high concentration samples
Auto start-up and shutdown programs