Special Notice

Request for Information:
Biomolecule Purification
DARPA-SN-26-66
May 15, 2026

Defense Advanced Research Projects Agency
Microsystems Technology Office
675 North Randolph Street
Arlington, VA 22203-2114

Request for Information (RFI)
Special Notice DARPA-SN-26-66

Biomolecule Purification
Defense Advanced Research Projects Agency (DARPA)
Microsystems Technology Office (MTO)

Posting Date: May 15, 2026
Responses Due: June 8, 2026, at 5:00 p.m. Eastern Time (ET)
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RFI DESCRIPTION:
The Defense Advanced Research Projects Agency (DARPA) Microsystems Technology Office (MTO) seeks information on novel methods for the purification of large complex molecules that will enable the creation of a universal purification platform capable of separating and recovering multiple large and complex molecules with high specificity, purity, and yield from complex feedstock. It is posited that such a platform would decrease the time and complexity of purification and eliminate the need for current state of the art multistep chromatography processes.

In addition, this RFI seeks to understand a) the current advances and challenges in the purification of biologically-produced proteins, as well as of other critical biologically-produced molecules that could benefit from a novel purification approach; and b) new operational capabilities enabled by novel purification approaches.

Responses to this RFI may be used to inform the development of a new program.

BACKGROUND:
The Department of War (DoW) requires access to critical and complex molecules for a wide variety of applications. Currently, many of these molecules are made by cells genetically modified to produce a molecule of interest in addition to those it regularly produces. The production of these molecules involves intensive and inflexible multistep purification workflows comprising various filtration and chromatography methods.

REQUESTED INFORMATION:
DARPA seeks innovative insights into single-step and tunable purification platforms for large molecules generated by manufacturing processes. DARPA aims to simplify downstream manufacturing processes, as well as enable the purification of multiple molecules via tuning a single process.

DARPA is *not* interested in methods solely applicable to the purification of biopharmaceuticals.

Responses are welcome from all capable sources including, but not limited to, private or public companies, individuals, universities, university-affiliated research centers, not-for-profit research institutions, and U.S. Government-sponsored labs. Responses may address one or both of the topic areas listed below. The questions listed below each topic area are provided as a guide; respondents are free to address additional questions that meet the objectives of the RFI.

Topic Area 1 – Novel approaches:

- What new technologies or approaches allow for a single purification method to be tuned to specifically purify different molecules? What are the underlying challenges in realizing these technologies? What are the tunability and purification limits of these technologies and why?
- What new methods are possible to separate multiple large complex molecules using a single tunable unit with high specificity without using affinity tags or affinity columns? How do these methods compare to affinity columns? What are the performance limits of these techniques?
- How would we enable reusability of a purification platform/matrix?
- Are there paths beyond tunability to achieve a universal purification platform?
- What methods would enable the purification of *de novo* designed molecules?

Topic Area 2 – Impact and Capabilities:

- What future capabilities, markets, or concept of operations (CONOPS) would be enabled by the ability to separate large complex molecules, particularly those currently produced by cells? What existing capabilities, markets, or CONOPS would be improved or expanded?
- How would improvements to purification methods enable small-scale or expeditionary manufacturing at fixed sites? What new operational capabilities can be enabled by small-scale or expeditionary manufacturing?

SUBMISSION INSTRUCTIONS:
Responses to this RFI should be submitted no later than 5:00 p.m. ET on June 1, 2026.

Unclassified responses to this RFI should be submitted to DARPA-SN-26-66@darpa.mil. NO CLASSIFIED INFORMATION SHOULD BE SENT TO DARPA-SN-26-66@darpa.mil.

To the maximum extent possible, respondents should submit non-proprietary information. If proprietary information is submitted, it must be appropriately and specifically marked. It is the respondent's responsibility to clearly define to the Government what is considered proprietary data. Any proprietary information should be clearly labeled as "Proprietary." DARPA will disclose submission contents only for the purpose of review by DARPA staff, other Government agencies, or DARPA Support Contractors/SETAs.

FORMAT INSTRUCTIONS:
Responses to the RFI should be concise. DARPA will only review responses submitted as an unprotected Microsoft Word/PowerPoint document or PDF file. Responses may address either or both topic areas. Each response is limited to no more than 4 pages per topic area using 12-point font and 1-inch margins on 8.5-inch by 11-inch page size. Effective responses that can be provided in fewer than 4 pages are encouraged. Any submitted material in excess of these limits will not be reviewed.

Responses should adhere to the following formatting instructions:

1. Cover page (1 page, not included in page limit)
   a. Title
   b. Organization(s)
   c. Respondent's technical and administrative points of contact (names, addresses, phone and fax numbers, and email addresses)
2. Topic areas (4 pages per topic area maximum)
   a. A discussion of the capabilities/challenges addressed (from your perspective)

   b. Theoretical and/or simulation discussion
   c. Development strategy
   d. Identify current data (if any)
   e. Estimated time to availability and risk assessment (technical and other)
3. References (1 page, not included in page limit)
   a. All references to previously published work should be contained within this space.
4. Summary slides (1 summary slide and 1 technical description slide per topic area, not included in page limit)
   a. Responses are requested to include slides that summarize the main idea and development strategy. The purpose of these slides is to visually and succinctly indicate the new insights, main objectives, underlying technical mechanisms, fundamental assumptions and limitations, key innovations, expected impact, and/or other unique aspects of the response.

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Subscribe to DARPA MTO's newsletter for timely updates on research opportunities, upcoming events, ways to work with us, and more.

DARPACONNECT:
Entities who have not worked with DARPA before are encouraged to learn more about DARPAConnect, an initiative established to facilitate collaboration between DARPA and potential performers. The DARPAConnect team offers customized support, resources, and guidance on how to prepare your ideas for high-impact conversations with DARPA program managers. Please visit DARPAConnect.us to access a digital hub of online resources, including a curriculum for self-paced learning, personalized support, and in-person and virtual events. In addition to the self-paced online materials, the DARPAConnect team is able to schedule one-on-one conversations to discuss your specific ideas, questions, and paths to DARPA. You can use the contact form at DARPAConnect.us or email the DARPAConnect team directly at darpaconnect@darpa.mil to request assistance.

ADMINISTRATIVE:
This announcement contains all information required to submit a response. No additional forms, kits, or other materials are needed. All administrative and technical questions should be directed to DARPA-SN-26-66@darpa.mil. Please refer to the Special Notice number (DARPA-SN-26-66) in all correspondence.

This RFI is issued solely for information and program planning purposes and does not constitute a formal solicitation for proposals or proposal abstracts; any so sent will be disregarded. In accordance with FAR 15.201(e), responses to this notice are not offers and cannot be accepted by the Government to form a binding contract. Submission of a response is strictly voluntary and is not required to propose to subsequent Announcements (if any) or Solicitations (if any) on this topic. DARPA will not provide reimbursement for costs incurred in responding to this RFI. Respondents are advised that DARPA is under no obligation to acknowledge receipt of the information received or provide feedback to respondents with respect to any information submitted under this RFI.