

Merck Research Laboratories

Discovery Oncology (SEEDS) Programs

Scientific Engagement and Emerging Discovery Science

Bringing together the most promising academic research with Merck R&D capabilities to validate and advance emerging therapeutic targets, pathways and technologies that show potential relevance to treat human disease.

About Us

Merck Research Laboratories (MRL), the research arm of Merck & Co., Inc. focused on discovering and developing therapies to improve patients' lives, has expanded its discovery capabilities in South San Francisco (SSF) by opening a cutting-edge research facility. The new nine-story, multi-disciplinary discovery research hub, accommodates more than 300 scientists and support research spanning exploratory biology through early clinical development. The building was custom designed with an open atmosphere that encourages collaboration and team work. The site also boasts a large auditorium to provide space for nearby academics, scientists and entrepreneurs to convene and engage in scientific dialogue.

About the MRL SEEDS Program

The MRL SEEDS program is an initiative seeking research collaborations with academic researchers to advance the most innovative discoveries for therapeutic targets, pathways and technologies. The MRL SEEDS program and subsequent collaborations underscore the importance of industry and academic interactions in the early discovery space.

The MRL SEEDS program was launched in 2020 with initial focus on Cardio/Renal/Metabolic/Ophthalmic diseases and platform technologies for the discovery and development of protein and antibody therapeutics.

As a first step in a potential collaboration, ideas for proposed projects should be submitted for evaluation by the Scientific Review Committee (SRC) comprised of scientists from Discovery Oncology (DO). Ideas are to be submitted in the form of a brief **proposal form by March 31, 2025**. Proposals will be evaluated by the MRL DO SEEDS Scientific Review Committee (SRC) and may be selected for awarding a 1-year research grant (up to \$125,000 USD in direct costs plus institutional indirect costs). The 1-year grant can potentially be extended at the discretion of the MRL DO SEEDS SRC.

At the discretion of Merck, MRL scientists will work closely with investigators to make available relevant capabilities and technologies that will enhance the success of the joint research program. As part of the proposal and workplan development process, scientists from MRL will engage with lead investigators to ensure expertise and capabilities of both parties are incorporated into the project plan as applicable. During the grant period, the investigator and MRL scientists will meet at least quarterly for updates. A final report is required and it is expected that part or all of the results generated during the collaboration are disseminated in peer-reviewed publications.

Who can apply?

MRL DO SEEDS program RFPs are open to researchers at the following universities: Stanford University, the University of California, San Francisco, the University of California, Los Angeles, the University of California, San Diego, Vanderbilt University, and Vanderbilt University Medical Center. Master agreements have been put in place with these universities. At the discretion of the MRL DO SEEDS SRC, proposals by researchers from other academic institutions may be considered.

Why apply?

The MRL DO SEEDS program is an effort to jointly advance high-quality science. All proposals submitted will be reviewed for scientific merit, tractability and alignment with the published areas of interest. The strongest proposals with the most compelling cases to experimentally address areas relevant for the discovery and development of protein and antibody therapeutics will be considered for funding, collaboration and/or sharing of Merck's R&D capabilities.

DO-RFP-0125: Defining mechanism of Antibody-drug conjugate (ADC) resistance in human cancer therapy and developing next-line treatment options

We seek proposals to provide insights into the underlying mechanisms of resistance to ADCs and to develop new strategies that increase efficacy. In particular, we are interested in proposals that address the following areas using approved ADC drugs.

- Mechanisms of resistance to ADCs using clinical samples
- Exploring therapeutic strategies to overcome the proposed mechanisms of resistance
- Novel ADC payloads with higher therapeutic index
- Approaches to select combinations or sequencing of ADCs with other agents, including other ADCs

DO-RFP-0225: Strategies for enhancing the efficacy of antibody-drug conjugates (ADCs) based on topoisomerase 1 inhibitors in cancer therapy

We seek proposals to provide deeper insights into the underlying mechanisms of actions of topoisomerase 1 based ADCs and to identify the best strategies that increase efficacy. In particular, we are interested in proposals that address the following areas using approved ADC drugs in preclinical models, tumoroids, or other advanced models.

- Mode of action of topoisomerase 1 in comparison to other DNA-damaging chemotherapy drugs (e.g., platinum derivatives, alkylating agents, etc.)
- Resistance mechanisms to ADCs based on topoisomerase 1 inhibitors in cancer therapy Novel ADC payloads with higher therapeutic index
- The best combinations with ADCs based on topoisomerase 1 inhibitors or optimize ADC sequencing

DO-RFP-0325: Investigate the effects of ADC drugs on immune cells within the tumor microenvironment

We seek proposals to investigate the impacts of ADC drugs on immune cells within the tumor microenvironment and the overall effect on antitumor immune response in the preclinical models, tumoroids, or other advanced models.

DO-RFP-0425: Identify and characterize tumor-specific E3 ligases or other cell-surface degraders

We seek proposals to search for novel tumor-specific intracellular or cell-surface E3 ligases, and other cell-membrane receptors that may serve as degraders to remove extracellular and cell-surface targets

DO-RFP-0525: Explore mechanisms of resistance to T-cell engagers (TCEs) and combination strategies to enhance TCE efficacy in treating solid tumors

We seek proposals to investigate mechanisms of resistance to TCEs in *in vivo* syngeneic, orthotopic, or metastatic models and to explore the best combination strategies to overcome the resistance and enhance the efficacy of TCE in treating solid tumors.

DO-RFP-0625: Identify and characterize novel checkpoint inhibitors

We seek proposals to search for novel checkpoint inhibitors that regulate antitumor immune response. In particular, we are interested in proposals that focus on the following topics

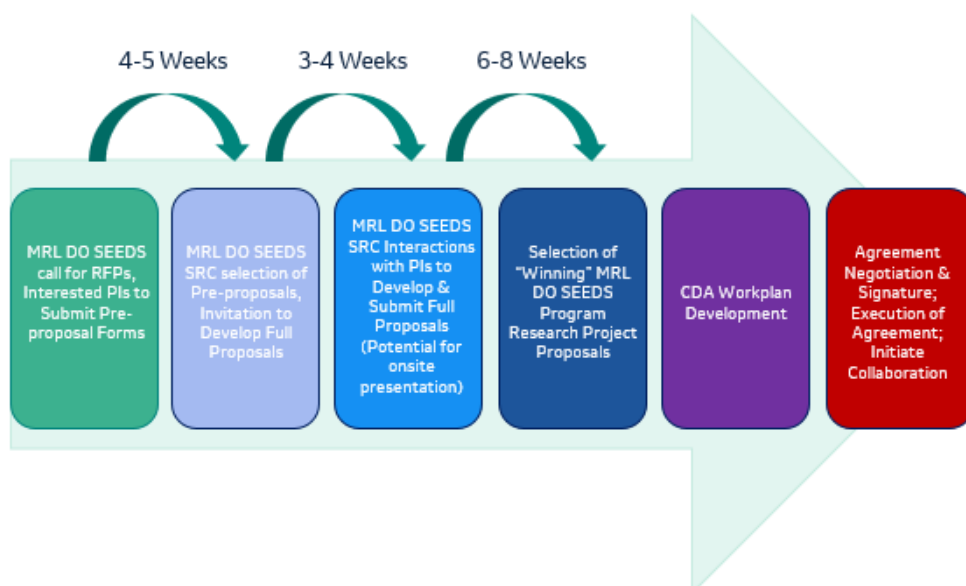
- Novel checkpoint inhibitors that upregulated and highly expressed in anti-PD1 resistant/refractory tumors
- Novel pathways and mechanisms that regulates immune cell migration, and the therapeutic strategy to promote antitumor immune cell infiltration in tumor

DO-RFP-0725: Develop novel methods to identify and profile tumor antigen-specific T cells.

The endogenous tumor antigens could be personalized/mutated antigens or shared/non-mutated or "dark antigens". We are interested in those research aimed to develop methods for identification and analysis of tumor antigen-specific T cells from the circulation or the tumor microenvironment, including TCR-related approaches.

MRL DO SEEDS: Request for Proposal (RFP) Process

The MRL DO SEEDS RFP process involves several steps illustrated in the diagram below. The timeline is meant as a general guide.



MRL DO SEEDS: Frequently Asked Questions

Questions and responses are divided by each phase of the MRL DO SEEDS program. To learn more or to ask a question, please contact the Merck SEEDS Program at oncologyseeds@merck.com. Your disclosure of information does not grant you any ownership interest in future Merck company inventions.

Submissions

1. Is there someone within Merck I can speak with to see if there is interest in my study idea (before submission of a proposal form) or in case I have any questions in preparing the proposal?

Yes. Please contact the Merck SEEDS Program at oncologyseeds@merck.com.

2. How do I submit a proposal?

Complete and submit the preproposal form to the Merck SEEDS Program by **March 31, 2025**.

3. Who should I contact if I need information regarding the MRL DO SEEDS program?

Please contact the Merck SEEDS Program at oncologyseeds@merck.com

4. Will Merck contribute any capabilities to the project?

Access to specific capabilities will be discussed and agreed upon for accepted proposals as part of the confidential discussions and workplan development process after acceptance of the pre-proposal.

5. Will Merck contribute any funding to the project?

Funding for approved collaborative 1-year pilot research projects is anticipated (up to \$125,000 in direct costs plus institutional indirect costs) in order to facilitate execution of the agreed upon specific aims of the project in the principal investigator's laboratory or at a third-party establishment. The amount of funding will be project-specific and will be discussed and agreed upon for accepted proposals as part of the confidential discussions and work plan development process after acceptance of the pre-proposal. Our goal is to enable the specific aims of the selected proposals.

6. How should I manage and communicate confidential information?

Submissions will be treated as confidential. If your proposal still requires a Confidential Disclosure Agreement (CDA), please contact the Merck SEEDS Program at oncologyseeds@merck.com.

Review & Decision

7. Who reviews the applications?

A Scientific Review Committee (SRC) comprised of Merck Research Laboratories Scientists will review all proposals.

8. What does Merck expect from investigators submitting a proposal?

The MRL DO SEEDS program funds proposals of scientific interest that can be conducted professionally and within the agreed timeline. Our expectations: 1) to receive a well-written proposal that is scientifically relevant and concise; 2) that investigators demonstrate the ability to conduct a study within the agreed timelines; 3) that, if approved, investigators agree to provide quarterly status updates and a final report of manuscript quality; 4) that part or all of the results generated during the collaboration are disseminated in peer-reviewed publications.

9. What can investigators expect from Merck?

Prompt and courteous response to submitted proposals; 2) thorough scientific review of the proposal; 3) timely decision on acceptance or rejection; 4) confidentiality of information under a Confidential Disclosure Agreement (CDA) as applicable.

10. What scientific points are considered when assessing a submitted proposal?

The following scientific points are considered: 1) the study is aligned with the published Active RFP statements; 2) the specific aims answer the scientific/medical questions with a well-organized study plan 3) a data analysis plan is included with the full proposal and work plan.

11. If there are questions regarding the proposal, will I have a chance to address them prior to a final decision being made?

Yes. If questions arise or clarifications are needed, you have the option of interacting with the MRL DO SEEDS SRC before a proposal and work plan are completed.

Contract Negotiations and Terms

12. How much will my lab be awarded if my full proposal is selected for collaboration?

After a sponsored research agreement is executed between Merck and the academic institution, in accordance with standard practices and terms, Merck will fund up to \$125,000 USD in direct costs for a 1-year pilot program plus institutional indirect costs.

13. What are the terms of the sponsored research agreement between Merck and the academic institution if my proposal is selected for funding?

Once your proposal is selected for contract negotiation and funding, a Merck Discovery Transactions Manager will contact the academic institution's Technology Transfer Office to negotiate a sponsored research agreement in accordance with established and reasonable practices and terms. Financial and/or reagent support of a proposal is contingent upon execution of a contract between Merck and the academic institution.