opnMe by Boehringer Ingelheim

opn2EXPERTS – Modeling human tertiary lymphoid structure formation

How would you propose to investigate the formation of tertiary lymphoid structures using models to characterize their role in the sustained immune response in diseases and identify actionable therapeutic strategies?

Answers to this question including a proposal for collaboration can only be considered if they arrive no later than July 29, 2021 11:59 pm PST.

Boehringer Ingelheim

Table of contents

What is the context of the problem that we would like to solve?

The presence of tertiary lymphoid structures (TLS) has been shown to correlate with anti-tumor immune response in several cancer indications as well as autoimmunity. As organized structures of immune/stromal cells, TLS may orchestrate a productive adaptive immune response against tumors, self or pathogens. Therefore, therapeutic intervention leveraging e.g. stromal cells to induce TLS formation may lead to improved immune response, especially in cold tumors deprived of immune infiltration and in combination with checkpoint blockade, chemotherapy, immunomodulation or oncolytic viruses. Likewise, disruption of TLS may improve the outcome of autoimmune/inflammatory diseases affecting e.g. lung, gut or skin.

We are looking for human *in vitro* translational and *in vivo* models to investigate the formation of TLS within tumors, tumor-like structures or tissues (defined *in vivo* models, cell line 2 or 3D, organ-on-a-chip, explant, else). Eventually, these models should enable testing and characterizing therapeutic strategies to induce TLS formation in patients and improve immunity against cancer and pathogens or to disrupt TLS in autoimmune settings.

What potential solutions could be in scope?

- Translational cancer or autoimmune/inflammatory models
- Approaches using primary immune cells and (tumor) cell lines (2 or 3D) or primary material that enable the characterization of human TLS formation in vitro
- Methods and conditions for cellular co-cultures (e.g. lymphoid cells/endothelial cells, organ-on-a-chip) for characterization of interactions and communication between different cell types.
- Models reflecting biological processes that leads to TLS in situ
- in vivo models allowing the characterization of TLS formation linked to human translational models
- Proposals including a description of the read out for the presence of TLS
- (Inducible) cell culture systems including specific cell growth and maintenance conditions enabling investigation of human primary (healthy donor or patient-derived) cell types involved in generation of TLS (e.g. stromal cells, lymphoid cells, lymphoid tissue inducer cells, and/or endothelial cells).
- Identification of (inducible) innovative cellular TLS using primary or transformed human cells that allow for the identification, characterization and screening of new targets and pathways leading to TLS in cold, immune-deserted tumors.

Applications containing preliminary evidences and characterization of the formation of TLS and applications containing human translational models will be prioritized.

What potential solutions would be out of scope?

The following will be considered out of scope:

- Proposals focused on mechanisms of action that are unique or specific to non-human species
- Approaches that recreate TLS only via “cell mixing” or 3D printing without reproducing biological process taking place in patients
- in vivo models in which TLS formation is not reproducible, poorly characterized or without demonstrated relevance/link to human biology
- Proposals without any preliminary/supporting data
- Proposals that are considered primarily fee for service

What benefits do we offer to you in exchange for having submitted a solution?

If your project is selected, you will have the opportunity to directly collaborate with the Cancer Immunology and Immune Modulation Discovery Research team of Boehringer Ingelheim. You can expect appropriate funding for the prospective collaboration period and your exact funding request should be outlined in your proposal. As a framework, we suggest that your initial funding request is structured in milestones and does not exceed 200,000 euros per submitted project in total.

The opportunity for a funded stay at Boehringer Ingelheim for technology exchange / training is potentially available, as is the availability of custom biological tools and reagents.

Our collaboration agreement will provide full transparency about each partner’s rights & obligations (including intellectual property rights). As part of the agreement you will be encouraged to publish following the collaboration agreement (to be negotiated in good faith).

To maintain the highest degree possible in an open innovation environment, we plan to announce the winner(s) publicly and feature them on opnMe.com and our social media channels. We would guide you through this process and as part of it we would kindly ask for your upfront consent, in case our scientific jury had selected your answer.

What are the key success criteria on which we base our selection for the best answer?

We are seeking research collaboration proposals that contain:

- A well-structured proposal outlining a new and compelling scientific approach including an experimental plan that will be used to test your hypothesis.
- A novel, testable working hypothesis distinct from those previously published.
- Outline of the technical feasibility of the innovative proposed approach, potentially supported by a few publications that support feasibility and display experience with the outlined technology, based on established techniques and/or assays.
- Potentially includes (non-confidential) existing data and results.

- Framing the questions and the innovation aspects which includes a well thought-
- through project plan with key decision points (e.g. clear Go/No-Go criteria).
- Contain a defined funding request. The project should be structured in milestones and planned with key decision points. The funding request for the initial milestones resulting in a Go/No-Go decision should not exceed 200,000 euros per submitted project in total.
- Proven track record in the required field of expertise.
- Ability to implement the outlined solution as part of a scientific collaboration project including access to a laboratory.

What information should be included in your answer submission?

Please use our answer submission template to provide a 2-3 page non-confidential proposal (available for download on the following site).

If confidential data exists that would strengthen the proposal, please indicate that information is available to share under a Confidential Disclosure Agreement (CDA). If we find the non-confidential concept proposal sufficiently interesting, we will execute a CDA for confidential discussions.

Anticipated Project Phases or Project Plan

Phase 1	Please complete your submission by **July 29, 2021 11:59 pm PST** the very latest
Phase 2	Our review of all proposals will be completed by Mid-September 2021 and scientists will be informed beginning of beginning of October 2021.
Phase 3	Potential collaboration starting date in Q4/2021

Submitting a collaboration proposal

- Check the outline of the opn2EXPERTS Modeling human tertiary lymphoid structure formation on opnMe.
- Alternatively, you may click the “Get Answer Template” banner to access the collaboration submission template.
- Follow the instructions to upload your submission document (requires login or registration).
- The upload allows you to attach additional application files if desired.

- You will be able to access your final submitted collaboration proposal in your personal dashboard and follow its review status.
- Please also visit the FAQ section on opnMe.com to learn more about our opn2EXPERTS program.