opnMe by Boehringer Ingelheim

opn2EXPERTS – Endothelial cell assays that model pathogenesis of Systemic Sclerosis

How do you propose improving the understanding of the role of endothelial cells in the progression of Systemic Sclerosis using novel *in vitro* cellular systems?

Answers to this question including a proposal for collaboration can only be considered if they arrive no later than August 31, 2020 12:59 pm PST.

Boehringer Ingelheim

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

Systemic sclerosis (Ssc) is a complex, debilitating disease characterized by fibrosis of connective tissue. Prominent organs affected include skin as well as lung, heart and GI tract. Although the etiology of Ssc remains obscure, it is currently understood to involve an interplay between vascular damage, autoimmunity and myofibroblast activation. Given the high prevalence of Raynaud's Phenomenon in individuals that are ultimately diagnosed with Ssc, vascular injury may represent the initial event leading to disease onset. Improved understanding of how vascular damage connects with autoimmunity and myofibroblast activation is likely to provide insights for the development of new therapeutics that can address the unmet medical needs of patients. Novel endothelial cell assays that more accurately model the disease setting are necessary in order to define potential key disease-driving pathways and identification of new targets for intervention.

What potential solutions could be in scope?

The following potential approaches to answer our question include, but are not limited to the following:

- Cell culture systems including specific cell growth and maintenance conditions that enable the study of primary (healthy donor and/or patient-derived) endothelial cells and/or endothelial cell progenitor cells.
- Identification of novel measureable phenotypic or functional features (e.g. microvesicles/exosomes, secreted factors, tube formation, etc.) relevant to disease pathology in cell culture systems as above.
- Co-culture methods and conditions that allow for the characterization of endothelial cell interactions and communication with different disease-relevant cell types (e.g. fibroblasts, macrophages, epithelial cells, pericytes adipocytes).
- Identification of innovative cellular systems using primary or transformed human cells that allow for the identification, characterization and screening of pathways with pathological function in Ssc.

What potential solutions would be out of scope?

- Proposals focused on mechanisms of action that are unique or specific to endothelial cell lines and/or large vessel biology (e.g. HUVEC).
- Proposals focused primarily on role of chemokines and adhesion molecules.
- Proposals for cell systems lacking applications to the disease setting.

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

We are open to all proposals that can fully or partially meet its requirements.

If your project is selected, you will have the opportunity to directly collaborate with the Immunology and Respiratory Disease Research team of Boehringer Ingelheim. You can expect appropriate funding for the prospective collaboration period. Your exact funding request should be outlined in your proposal. As a framework, we suggest that your initial funding request is structured in milestone 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) publically 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 idea,
- A novel, testable working hypothesis distinct from those previously published,
- Framing the questions and the innovation aspects which includes a well thought-through project plan with key decision points and budget requirements,
- Proven track record in the required field of expertise,
- Outlining the technical feasibility of the innovative proposed approach,
- The quality and feasibility of potentially existing data and/or the experimental plan that will be used to test the hypothesis.
- 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 confidential 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 **August 31, 2020 12:59 pm PST** the very latest.
Phase 2	Our review of Proposals will start in September 2020 and we aim to finalize our review within four weeks.
Phase 3	Potential collaboration starting date late Q4/2020 or Q1/2021

Submitting a collaboration proposal

- Check the outline of the opn2EXPERTS Exosomes question on opnMe or alternatively,
- Click the "Download your answer submission template" banner to access the collaboration submission template.
- Follow the instructions upload your submission document (requires login or registration).
- The upload allows you to attach additional application files if you want to.
- 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.