opnMe by Boehringer Ingelheim

opn2EXPERTS: Role of GPR68 in mechanotransduction and fibrosis

How do you propose elucidating the role of GPR68-dependent mechanotransduction in the pathogenesis of fibrotic gut, skin, and lung diseases?

Answers to this question including a proposal for collaboration can only be considered if they arrive no later than October 15, 2020 11:59 pm PST.

Boehringer Ingelheim

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

GPR68 (also known as OGR1) senses extracellular protons and mechanostress, integrating chemical and physical stimuli from tissue microenvironment. Studies using genetic approaches have linked GPR68 signaling to the production of pro-inflammatory mediators, wound repair, epithelial barrier function and tumor biology. GPR68 may contribute to the pathogenesis of chronic inflammatory and fibrotic diseases although robust pharmacological proof of concept is still lacking.

Emerging data suggest mechanostress sensing mechanisms contribute to driving fibrotic disease progression by imparting biochemical and mechanical cues that regulate cell shape, differentiation and function. As individual cell types exhibit unique mechano-sensitivities that can promote pathological progression, we believe a better understanding of the mechanisms of mechanosensing will help elucidate novel therapeutic approaches for fibrotic diseases. Therefore, further understanding of the molecular interplay between GPR68-dependent mechanotransduction and disease driving pathways in key disease relevant cell types is required for the identification of novel therapeutic concepts that will improve tissue dysfunction and restore homeostasis.

What potential solutions could be in scope?

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

- Technologies to investigate mechanotransduction (e.g. compression, tension, shear, or stiffness)-dependent phenotypic and functional characterization of human primary cells such as intestinal epithelial cells, intestinal/dermal fibroblasts, intestinal smooth muscle cells, or monocytes/macrophages.
- Methods and conditions to delineate GPR68-dependent or -independent mechanotransduction in the human primary cells described above, preferentially, in the presence of disease relevant stimuli.

What potential solutions would be out of scope?

- Proposals focused on GPR68 functions that are unique or specific to non-human species.
- Proposals with a primary focus and applicability to infectious disease.
- Proposals lacking use of human primary cell-based assay systems.

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 Immunology and Respiratory Disease Research 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.

In addition, as part of the collaboration we will share an unprecedented proprietary preclinical GPR68 inhibitor molecule free of charge in the amount required for the experiments throughout the duration of the project.

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 **October 15, 2020 11:59 pm PST** the very latest.
Phase 2	Our review of Proposals will start in October and we aim to finalize our review within four to six weeks.
Phase 3	Potential collaboration starting date late Q4/2020 or Q1/2021

Submitting a collaboration proposal

- Check the outline of the opn2EXPERTS GPR68 Mechanotransduction 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.