

opn2EXPERTS - Harness liver's regenerative capacity for late-stage NASH

How would you propose to harness molecular mechanisms underlying the regenerative power of the liver to act as a novel intervention against late-stage NASH?

Answers to this [question](#) including a proposal for collaboration can only be considered if they arrive no later than December 15, 2022, 11:59 pm PST.

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

Non-alcoholic steatohepatitis (NASH) is a progressive liver disease, beginning with inflammation and steatosis, and potentially progressing to fibrosis and cirrhosis. As fibrosis progresses, it gradually replaces functional hepatocyte mass, leading to impaired hepatic function and ultimately liver failure. According to the most recent data, nearly 20% of all US transplants are due to late-stage NASH, and it is the most common cause of transplant in female patients (34%) and patients older than 54 years of age (36%). NASH prevalence is expected to increase by 63% between 2015 and 2030. Despite these grim statistics, no treatment for NASH has been approved. Further, most of the potential therapies in development focus on the early stages of the disease.

After acute injury or resection, human and rodent livers will engage in a series of responses to return the liver to 100% of normal size. This remarkable regenerative ability makes the liver unique among solid organs, but the mechanisms of regeneration are not well understood. Liver failure in late-stage NASH is characterized by a loss of function due to a loss of hepatocyte mass; liver regeneration after resection is a coordinated replacement of hepatocyte mass. Our research question is: How would you propose to engage the mechanisms underlying liver regeneration to treat late-stage NASH?

What potential solutions could be in scope?

Innovative *in vitro* assay systems (preferably utilizing human cells), or *in vivo* models that allow the identification and validation of targets that engage regeneration pathways to increase hepatocyte mass and/or function to delay or prevent liver failure/decompensation.

Covering, but not limited to the following concepts:

- Novel screening assays to identify potential modulators of regeneration pathways that can be developed into potential NASH therapies.
- Novel model organ systems which demonstrate regenerative capacity
- Cellular models of the regenerating liver
- *In vivo* screens using current or novel models of liver regeneration or repair
- Studies leveraging human tissue and -omics approaches to better understand the mechanisms of liver regeneration.

What potential solutions would be out of scope?

- Solutions involving cell therapy
- Solutions involving xenotransplantation
- Solutions utilizing human fetal tissue

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 CardioMetabolic Discovery 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).

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.
- Outlining of the technical feasibility, and potentially existing data or previous publications that support feasibility / experience with outlined technology, based on existing techniques and established assays.
- Your exact funding request should be outlined in your proposal based on a well-thought-through project. The project should be structured in milestones and planned with key decision points (clear Go/No-Go criteria). 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 with Boehringer Ingelheim 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 **December 15, 2022, 11:59 pm PST** at the very latest
- Phase 2 Our review of all proposals will be completed through mid-February 2023 and scientists will be informed after that.
- Phase 3 Potential collaboration starting date in Q2/2023.

Submitting a collaboration proposal

- Check the outline of the opn2EXPERTS “[Can liver regeneration mechanisms be leveraged to treat NASH?](#)” on opnMe.
- Alternatively, you may click the “Get Submission Template” banner to access the material transfer 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.