

opn2EXPERTS: Monitoring neuronal networks at risk for schizophrenia

How would you apply innovative and scalable readouts to monitor neuronal function and connectivity in the brain of developmental models of schizophrenia risk?

If you have an answer to our question, please submit your proposal for collaboration via the [opn2EXPERTS web page](#).

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

Schizophrenia today is understood as a neurodevelopmental disease and its symptomatic progression is linked to the critical period in brain development during adolescence. We believe that functional maturation of the prefrontal cortex (PFC) is crucial to the disease process and its understanding could be key for discovering innovative therapeutic mechanisms. To probe cellular mechanisms and molecular targets for addressing early disease manifestations, we are looking for innovative approaches to monitor neuronal network function in schizophrenia risk models.

Which potential solutions could be in scope?

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

- New approaches to measure schizophrenia-linked cortical network deficits and response to pharmacological intervention in rodent models.
- Scalable technologies and approaches for reliable monitoring of neuronal activity and network function in acute tissue preparations.
- Solutions based on functional readouts, such as imaging and electrophysiology.

- Technologies built on genetically encoded functional reporters or derived mouse lines.

Which potential solutions would be out of scope?

- Proposals that are not related to schizophrenia network pathology.
- Proposals with experimental approaches that are not applicable to monitor rodent PFC circuitry or that are not scalable.
- Proposals with focus on cellular model systems, e.g. dissociated primary neurons or iPSC-derived neurons, as well as fee for service offers.

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

Your proposals will be rapidly evaluated and we will get back to you within a period of 6 weeks.

You can expect appropriate funding for the prospective collaboration period. Depending on the proposal, we may also provide the opportunity for a funded stay at Boehringer Ingelheim for technology exchange / training. This would be considered as part of a collaboration.

Transparency about your rights & obligations (including IP) will be addressed. You will be encouraged to publish following the collaboration agreement (to be negotiated in good faith).

If your project is selected, you have the opportunity to directly collaborate with the CNS Diseases Research team of Boehringer Ingelheim. It means also that you will be granted access to Boehringer Ingelheim's expertise in CNS drug discovery.

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.

Which information should be included in your answer submission?

You should include in your proposal how you would measure neuronal connectivity and excitatory-inhibitory balance during the critical period of adolescence based on innovative, scalable and functional readout(s). Based on your demonstrated expertise, we want you to provide a high-level project plan supported by references. Please include also putative timelines and required budget.

Please provide only non-confidential information as part of your answer submission. Please be note that we must initially treat all incoming information as “non-confidential”.

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.

We encourage you to use our submission template which can be found on the web page (Section: “What information should be included in your answer submission?”).

Anticipated Project Phases or Project Plan

- Phase 1 Please complete your submission.
- Phase 2 We commit to review your proposal within four to six weeks after submission and notify you about the outcome of our review after this timeline.
- Phase 3 We may propose a web-conference from our end to discuss your proposal and potential next steps in case of a positive review outcome. At this meeting you will also be encouraged to bring up your own questions and/or suggestions. As an outcome of this meeting, we may decide to proceed with a mutually agreed collaboration proposal.

Submitting a collaboration proposal

- Check the outline of the [opn2EXPERTS Schizophrenia question](#) on opnMe or alternatively,
- Click the “I have an answer” banner to access the collaboration submission template (requires login or registration).
- Follow the instructions to download the template or upload your submission document.
- 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.