

Peripheral mechanisms for negative energy balance

How does your pharmacological program create a clinically meaningful negative energy balance through peripheral mechanisms in the context of obesity?

Answers to this [question](#) including a proposal for collaboration can only be considered if they arrive no later than December 16, 2026, 11:59 pm PST.

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

Identifying and developing therapies that induce weight loss through mechanisms beyond appetite suppression remains a major unmet need in obesity treatment. While GLP-1-based therapies have demonstrated substantial clinical efficacy, their use is frequently associated with gastrointestinal adverse effects, including nausea and vomiting. Peripheral metabolic organs account for the majority of whole-body energy expenditure and therefore represent attractive alternative targets for increasing energy utilization or promoting energy loss.

With this opnMe call for collaboration, we invite experts in the field to submit novel therapeutic programs – validated in translationally-relevant preclinical models – that pharmacologically interrogate peripheral metabolic pathways enhancing energy expenditure or energy excretion, independent of sympathetic nervous system activation or adipose tissue browning.

Skeletal muscle, liver, and kidney (detailed below) illustrate three such peripheral organ systems with substantial, yet still under-exploited, potential to drive a clinically meaningful energy deficit. Proposals addressing other peripheral mechanisms with comparable potential are equally welcome.

Strategies aimed at preserving or enhancing skeletal muscle function during body weight loss induced by reduced caloric intake are currently receiving considerable attention. Beyond their role in locomotion, skeletal muscles are major determinants of whole-body energy expenditure and metabolic health. Improved muscle function has been associated with enhanced glucose homeostasis, increased substrate utilization, and favorable metabolic outcomes across a range of disease states. Therefore, we are interested in investigating mechanisms that increase muscle metabolic activity and energy consumption, ultimately improving muscle performance while contributing to a negative energy balance.

The emergence of glucagon-containing multi-agonists has highlighted the critical role of the liver in regulating the transition from nutrient storage to nutrient utilization. As a central metabolic organ with substantial metabolic capacity, the liver represents an attractive target for increasing energy expenditure through mechanisms such as enhanced fatty acid oxidation, ketogenesis, and ATP-consuming metabolic pathways. Modulating hepatic metabolism may therefore provide opportunities to create a meaningful energy deficit that supports significant body weight loss.

SGLT2 inhibitors have demonstrated clinical efficacy by promoting urinary glucose excretion, providing important benefits for patients with type 2 diabetes, cardiovascular disease, and chronic kidney disease. Although the associated weight loss is generally moderate, these agents have established the principle that the kidney can serve as an organ of energy excretion. By redirecting calories out of the body, renal pathways represent a promising and largely underexplored mechanism for inducing negative energy balance and supporting body weight reduction.

In summary, the aim of this call is to explore how peripheral organ systems can be harnessed to drive a clinically meaningful negative energy balance. We are interested in in-licensing existing therapeutic programs validated in (but not restricted to) the peripheral mechanisms outlined above.

To ensure a fair and efficient evaluation process, submissions must be limited to non-confidential information. Confidential details should not be included at this stage but may be described in general terms or indicated as available for sharing under a Confidential Disclosure Agreement (CDA) if the proposal is selected for further discussion.

What potential solutions could be in scope?

Drug discovery projects or therapeutic programs, including small molecules, biologics, peptides, siRNA-based approaches, and emerging modalities such as antibody-drug conjugates. Only peripheral mechanisms contributing to energy expenditure or energy excretion will be considered in scope.

Priority would be given to proposals that cover already validated drug discovery projects or programs. Validated means for us:

- Demonstration of on-target effect is required for all submissions (e.g., target engagement, provision of relevant biomarker (if required)).
- An *in vivo* proof of concept has been established in one or more obesity-relevant models, with readouts reflecting the mechanism of action of interest. Please specify the model(s) used and the readout(s) obtained (e.g., model: Diet-induced obesity (DIO); readout: prevention of body weight gain and/or increased weight loss, ANCOVA-normalized increase of EE, urinary metabolite excretion, muscle contraction energetics, hepatic fatty acid oxidation).
- Usage of relevant *in vitro/ex vivo* advanced human models (e.g., primary patient-derived cellular assays, 3D tissues/cellular systems) with functional characterization of energy-expenditure-relevant readouts. Please specify the model(s) used and the readout(s) obtained.

Programs should be supported by efficacy data from translationally relevant preclinical models and enable pharmacological interrogation of mechanisms that ultimately drive meaningful body weight loss, including but not limited to the example mechanisms outlined in the section above.

Please note that all submitted proposals must be based solely on non-confidential information and data.

What potential solutions would be out of scope?

- Any clinical stage asset
- Gene therapy or cell therapy approaches
- Microbiome directed mechanisms of action (MoAs)
- Nutritional supplements
- Assets inducing gastrointestinal side effects (vomiting, nausea, diarrhea, etc.)
- β -adrenergic activation, sympathetic nervous system stimulation, or approaches directed towards browning or brown adipose tissue-mediated thermogenesis
- Mechanisms primarily aimed at reducing food intake, enhancing satiety, or otherwise modulating energy intake
- Proposals involving central nervous system-mediated MoAs.

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

This call represents a unique chance to make a significant impact in obesity research. By participating, you have the opportunity to collaborate directly with the Cardiorenal Metabolic Diseases Research teams of Boehringer Ingelheim.

Successful proposals will be rewarded with tailored and scalable funding packages and / or if IP is involved, appropriate business options along well-defined parameters.

We expect promising solutions to originate from a broad range of sources, including academia, startups, biotech companies, and established pharmaceutical organizations.

Winning proposals should therefore expect appropriate funding that will help them bring their conceptual idea and/or discovery (invention) to the next level.

Depending on the complexity and maturity of a proposed solution, it may require different budget terms that will be negotiated with the selected partners in good faith. If applicable, respective business options will be negotiated with winning proposals. We also offer customized partnerships for equity into seed stage biotechs pioneering existing standard of care via the corporate Boehringer Ingelheim Venture Fund.

Besides, we present a range of possibilities to support the winner besides funding. Examples include access to high-quality molecules, execution of pharmacokinetics studies and collaboration with experts in fields from research to clinical studies.

We prefer to receive proposals focused on a timeframe of approximately two years to reach the next decision point on preclinical / clinical research or milestone towards clinical readiness.

In case a project proposal has reached sufficient maturity to build on existing – or reasonably soon to be filed – IP, licensing, or options to licensing agreements, or similar business

collaborations could be considered as well. Upon successful outcome, we may engage in a long-term collaboration with the selected winner.

We are particularly interested in finding mutually agreeable solutions concerning each partner's rights and obligations (including intellectual property rights). Furthermore, winners will be encouraged to publish their findings in accordance with the collaboration agreement, which will be negotiated in good faith. We hope that this represents a great opportunity for your innovative ideas and solutions to gain recognition in the scientific community.

In some cases, it may be beneficial for the winning teams to announce their partnership with Boehringer Ingelheim. Depending on the conditions of the agreement and mutual needs, we would be open to such an arrangement.

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

Our scientific review will address the following key success criteria for selecting winning proposals:

- The proposed solution must be based on a compelling scientific hypothesis and address the in-scope and out-of-scope criteria of this call
- A well-structured proposal with a clear outline of the required funding budget, actionable milestones, and timeline where it should be assumed that Boehringer Ingelheim would fund the next step towards proof-of-concept of the proposed approach for body weight modulation
- The proposed solution is backed up by relevant (preliminary) data, and it should be based on established / state-of-the-art methods and assays
- A mitigation plan should be included to overcome the anticipated hurdles that also includes a contingency plan in case one approach may not lead to the desired outcome
- Information regarding intellectual property / third party infringement used in the context of the submission
- Ability to reach tangible results within a timeframe of approximately two years to reach the next decision point on preclinical or clinical research / milestone towards clinical readiness

What information should be included in your answer submission?

Please use our answer submission template to provide a 4–5 page non-confidential proposal (available for download on the [following site](#)).

Submissions must be limited to non-confidential information. Please note that all submissions must include a signed confirmation stating that the information provided is based exclusively

on non-confidential sources. To ensure compliance, the use of our submission template is mandatory.

If you have confidential data that is essential to support your proposal, please describe it in general terms and indicate that additional information is available for sharing under a Confidential Disclosure Agreement (CDA). For proposals of interest, we will proceed with a CDA to enable further confidential discussions.

Anticipated Project Phases or Project Plan

Phase 1	Please complete your submission by December 16, 2026, 11:59 pm PST at the very latest.
Phase 2	Our review of all proposals will be completed by mid-February 2027, and applicants will be informed thereafter.
Phase 3	Start of discussions for the collaboration agreement in Q1/2-2027.

Submitting a collaboration proposal

- Check the outline of the opn2EXPERTS “[Peripheral mechanisms for negative energy balance](#)” 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.