

# Parasiticides biotransformation assay for lead optimization

How would you propose to set up an assay investigating environmental biotransformation kinetics of animal parasiticides during lead optimization to guide drug design?

Submit your [application](#) as a Postdoctoral Researcher in Environmental Biodegradation Assessment at the research facilities of Boehringer Ingelheim in Biberach, Germany, one of the leading pharmaceutical companies worldwide.

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# What is the context of the opportunity that we are currently offering?

At Boehringer Ingelheim Animal Health we recognize the importance of sustainability and the interconnection between human, animal, and environmental health. In line with our ongoing commitment to sustainability, we are actively integrating environmental considerations into the design and development of our medicines. This initiative is aimed at minimizing the environmental footprint across every stage of a medicine's lifecycle. Within our Animal Health division, we have made significant strides in focusing these efforts on products for parasite control in companion animals and livestock production animals. Our dedication to sustainable practices is not just a goal but a reality we are continuously enhancing.

The search for new antiparasitic drugs follows the same drug discovery process as for human pharma drugs - from hit finding and optimization, through lead optimization, candidate identification and development.<sup>1</sup> This also includes a rigorous assessment of the environmental safety of new parasiticides. Thus, it becomes increasingly important to investigate the API's environmental profile early to inform decision making during the research phase.<sup>2</sup> In this context innovation frameworks such as Safe and Sustainable by Design (SSbD), the Green Chemistry Principles<sup>3</sup> as well as emerging regulatory frameworks, emphasize biodegradation as one important factor influencing the environmental fate and safety of active molecules. However, the routinely available methods for evaluating the environmental persistence of active ingredients have long timelines and are tailored for in-depth characterization of individual development candidates. Moreover, their low throughput makes them unsuitable for the lead optimization stage.

Consequently, we are looking for a Postdoctoral Researcher in Environmental Biodegradation Assessment to join our Discovery Research team and establish workflows for the early environmental fate assessment of antiparasitic active ingredients (APIs). In your new role you will

- Work with the Sustainable Medicines Lead for Animal Health to establish workflows for the early environmental fate assessment of antiparasitic active ingredients (APIs) during Drug Discovery from the ground up.
- Develop an innovative assay for investigating the environmental persistence, transformation kinetics and half-life of APIs.
- Design and execute experiments to select appropriate environmental test matrices, validate the assay, and show translatability to real-world environmental data.
- Optimize the assay for higher throughput to ensure the assay is suitable to facilitate the design of APIs with improved environmental half-lives.
- Collaborate with multidisciplinary project teams to integrate this new approach in existing workflows and disseminate key learnings from the experimental work into the organization.

With your work you will be able to benefit from the ecosystem of a large pharmaceutical company while contributing to the design of sustainable medicines for the generations to come.

## What potential solutions could be in scope?

- Assay set-ups using or emulating different relevant environmental matrices
- Assays enabling compound ranking based on degradability and/or allowing structure-property-relationship insights
- Approaches combining substance testing and predictive modelling

## What potential solutions would be out of scope?

- Assays requiring radiolabeled test substances or quantities of the test item > 10 mg
- Non-experimental predictive model approaches

## What will be the reward to the winner?

As a winner of this call, you will have the unique opportunity to a fully resourced PostDoc position in the Animal Health Research team at Boehringer Ingelheim at the Discovery Research site in Biberach/Riss, Germany. You will obtain a position for up to 3 years\* with Boehringer Ingelheim within a cross-functional, international team of world-class scientists at the interface of drug discovery research across Animal Health and Human Pharma and environmental sustainability. [\*The offered position initially covers a duration of 24 months with an option for extension by another 12 months.]

You want to learn more  
about living in Biberach

Find out more [here](#)

At Boehringer Ingelheim, you will have access to a fully equipped laboratory in a state-of-the-art research facility including access to all relevant tools and technologies. You will benefit from mentoring through our internal experts, have the chance to attend international conferences, and to publish your results in high-ranking journals. You will be part of the vibrant PostDoc community at Boehringer Ingelheim in Biberach with manifold opportunities for scientific, cross-functional

exchanges for your personal development. You will have the opportunity to learn the process and challenges of drug discovery from the inside, including additional training and mentoring program.

In addition, you benefit from the rich packages for employee benefit. Our most important asset in achieving our global vision is our people. We prioritize your growth, investing in our people through mentoring, coaching, skill-building, leadership development, and academic support. Our infrastructure promotes wellness with sports groups, health counseling, onsite medical services, and regular check-ups. Achieve work-life balance with flexible work hours, childcare support, counseling, and convenient amenities. We ensure financial health with employer loans, private insurances, access to discounts, and a company pension scheme. Benefit also

from our excellent and healthy on-site catering and the opportunity for take-away meals. We offer relocation support and interim accommodation to make joining us easy.

## What are the requirements to participate in this call?

- PhD in Environmental Sciences, Analytical Sciences, Biology, Biochemistry, Chemistry, or related fields
- Strong understanding of biotransformation and desire to apply knowledge to processes in environmental matrices (e.g., soil, sediment, activated sludge)
- Advanced experimental skills setting up assay systems with biological samples
- Ability to implement an innovative workflow or enabling new experimental setups from the ground up
- Experience in biodegradability and/or high-throughput testing is a plus
- Proven track record of independent research, demonstrated through publications or patents
- Excellent oral and written communication skills in English; German language skills are a plus
- Strong communicator and team player with the ability to work both independently and collaboratively in an interdisciplinary research environment
- Experience in managing and implementing projects with diverse teams
- Passion for sustainability and commitment to reducing the environmental footprint of medicines

## How to apply?

Submit your application including your CV and a cover letter [here](#).

## What else is important to Boehringer Ingelheim?

Our purpose is to transform lives for generations. Therefore, we developed three key principles for our PostDoc program which are determining our plans and actions: Drive cutting-edge science, new concepts and technologies; enrich Boehringer Ingelheim's innovation ecosystem with highly motivated, young fellows, who will help to build on science to develop new medicines; and train the next generation of leading scientists.

Our campus community culture is great for sharing ideas and makes it easy to access technologies, meet experts, and approach leaders of all levels. There's a great spirit of freedom, fluidity, and fierce collaboration.

Interactions are sound and informal. It's not particularly hierarchical, more team-based with a start-up attitude. We are always keen to help and speak up, open to positive change and new ideas that support our mission to improve lives.

Our Speak-Up policy is an important part of our Code of Conduct. Only in this way we can continuously develop and improve as a company.

Diversity, Equity, and Inclusion (DEI) is an integral part of Boehringer Ingelheim's identity; a key element of our culture and contributes to our 'Sustainable Development – For Generations'.

Our core values of empathy, respect, passion, and trust nurture a diverse, collaborative, open and inclusive environment which is key to innovation, value creation and sustainable growth. With the inclusion of various experiences, backgrounds, and characteristics, Boehringer Ingelheim creates an openness to different approaches, solutions, and perspectives, all contributing to create "Value through Innovation".

## References

1. Selzer P. M., Epe C. Antiparasitics in Animal Health: Quo Vadis? *Trends Parasitol.* **2021**, 37(1):77-89. DOI: [10.1016/j.pt.2020.09.004](https://doi.org/10.1016/j.pt.2020.09.004), [PubMed](#).
2. Moermond C. T. A., Puhlmann N., Brown A. R., Owen S. F., Ryan J., Snape J., Venhuis B. J., Kümmerer K. GREENER Pharmaceuticals for More Sustainable Healthcare *Environ Sci Technol Lett.* **2022**, 9(9):699-705. DOI: [10.1021/acs.estlett.2c00446](https://doi.org/10.1021/acs.estlett.2c00446), [PubMed](#).
3. Martinengo B., Diamanti E., Uliassi E., Bolognesi M. L. Harnessing the 12 Green Chemistry Principles for Sustainable Antiparasitic Drugs: Toward the One Health Approach *ACS Infect Dis.* **2024**, 10(6):1856-1870. DOI: [10.1021/acsinfecdis.4c00172](https://doi.org/10.1021/acsinfecdis.4c00172), [PubMed](#).