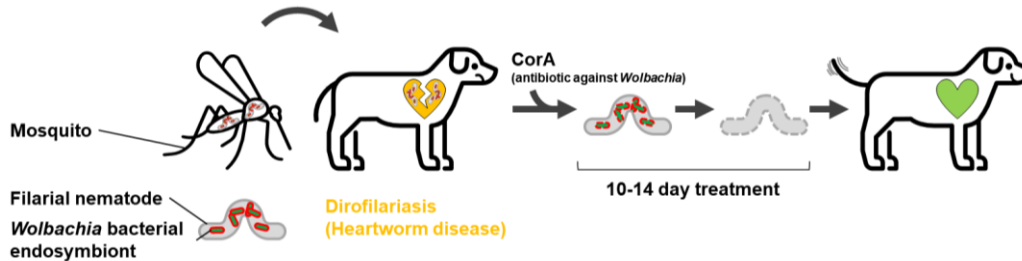


# Corallopyronin A as antifilarial drug

A natural antibiotic product for the effective treatment of dirofilariasis

## Invention



Canine dirofilariasis, commonly known as heartworm disease, is caused by the nematode parasites *Dirofilaria immitis* and *D. repens* and transmitted through mosquito bites into dogs. The parasites inhabit the heart and pulmonary arteries, causing damage to these organs. *Wolbachia*, the bacterial endosymbiont of the parasites, crucially regulates the nematodes' life cycle. Standard treatment for dirofilariasis involves ivermectin prophylactically or melarsomine on the therapeutic level. However, these drugs are known to cause side effects and resistance.

Corallopyronin A (CorA) is a novel non-competitive inhibitor of the bacterial DNA-dependent RNA polymerase. CorA aims at slowly killing *Wolbachia*, thus avoiding strong inflammatory reactions. The IP package further comprises a production process of CorA, established on a 15,000 litre scale in preparation for GMP manufacturing, and a stable formulation for oral administration.

## Commercial Opportunities

On behalf of the University of Bonn, PROvendis offers an access to rights for commercial use (patent applications, patents and know-how).

## Current Status

Assessment CorA	Results
<b>Production and formulation</b> <ul style="list-style-type: none"> <li>USP, DSP</li> <li>Chromatographic purification</li> <li>Free flowing powder</li> </ul>	Each up to 15,000 L 35 to 90 g batches Gastro resistant capsules for oral application
<b>Toxicology (non-GLP)</b> <ul style="list-style-type: none"> <li>Off target profiling</li> <li>Cyp inhibition</li> <li>CYP 3A4 induction via PXR</li> <li>MTD dog</li> <li>7-day repeated-dose dog</li> </ul>	EC <sub>50</sub> [μM]: A3= 11, PPARγ= 2.2, COX1= 8.2 No inhibition of six recombinant human CYPs EC <sub>50</sub> [μM]: 12 1000 mg/kg; moderate, transient symptoms 0, 150, 450, 750 mg/kg bw/day 150 mg/kg bw/day: NOAEL (preliminary) C <sub>max</sub> 208 μg/ml (d1) / 212 μg/ml (d7)
<b>Safety Pharmacology</b> <ul style="list-style-type: none"> <li>14 day toxicity study in dogs</li> <li>Cardiovascular effects in dogs</li> <li>GLP toxicity</li> </ul>	2024 Radiotelemetry, 2024 Q4/2023 - Q2/2024

## Relevant IP and Publications

More information on IP status on request.

Becker T. et al. Eur J Pharm Biopharm (2023); Rox et al., Pharmaceutics. 2023; 15(1):131; Ehrens et al., Front. Trop. Dis., Vol. 3 (2022); Krome et al., Nat Prod Rep 39:1705-1720; Krome et al., Pharmaceutics 12 (2020):1105; Becker et al. Pharmaceutics (2022) 14:1657

An invention of the University of Bonn.

## Competitive Advantages

- Effective treatment of canine dirofilariasis
- Slow worm death prevents potential endotoxic shock
- Oral administration of CorA
- Stable formulation of CorA

## Technology Readiness Level

123456789

Technology validated in relevant environment

## Industries

- Pharmaceutical Industry
- Veterinary Medicine

## Ref. No.

2838

## Contact

Kordula Kruber

E-Mail: [kk@provendis.info](mailto:kk@provendis.info)

Phone: +49(0)208-94105-30

