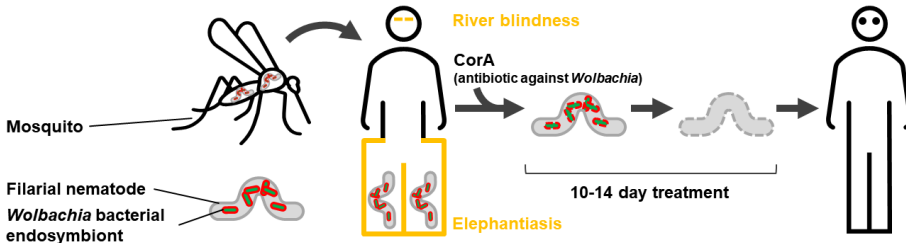


Corallopyronin A as antifilarial drug

A natural antibiotic product for the treatment of filariasis

Invention



Filariasis is a parasitic disease caused by filarial nematodes that are transmitted to humans through blood sucking mosquitoes. There is a symbiotic relationship between the nematodes and the bacterial endosymbiont *Wolbachia* that makes the nematodes' life cycle heavily dependent on *Wolbachia*'s presence. Standard therapeutic treatment for filariasis usually involves drug therapy with antiparasitic drugs or the antibiotic doxycycline. However, said treatment has disadvantages such as long therapeutic treatment, and contraindication for children < 8 years and during pregnancy/breast feeding.

Corallopyronin A (CorA) is a non-competitive inhibitor of the bacterial DNA-dependent RNA polymerase. *Wolbachia* can efficiently be removed by only one or two treatment regimens of CorA. In addition, side effects were not realised during the pre-clinical studies. A production process of CorA is established on a 15,000 litre scale in preparation for GMP manufacturing. A stable formulation has been developed for oral administration and medical use in logistically difficult regions.

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
Production and formulation <ul style="list-style-type: none"> USP, DSP Chromatographic purification Free flowing powder 	Each up to 15,000 L 35 to 90 g batches Gastro resistant capsules for oral application
Toxicology (non-GLP) <ul style="list-style-type: none"> Off target profiling Cyp inhibition CYP 3A4 induction via PXR 	EC ₅₀ [µM]: A3= 11, PPARγ= 2.2, COX1= 8.2 No inhibition of six recombinant human CYPs EC ₅₀ [µM]: 12
Safety Pharmacology	✓ On request
Pharmacokinetic results	✓ On request
Regulatory status <ul style="list-style-type: none"> Formal BfArM Scientific Advice BfArM Scientific Advice #2 BfArM Scientific Advice #3 	✓ 2018 ✓ (Q3/ 2023) Drug product quality, Dose calculation, Phase I trial protocol (Q1/ 2024)

Relevant Publications

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.

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Competitive Advantages

- Effective treatment of filariasis presumably also for children
- Alternative mode of action of CorA avoids selection for rifampicin cross-resistant *M. tuberculosis*
- Oral administration of CorA
- Stable formulation of CorA for medical care in logistically difficult regions

Technology Readiness Level

123456789

Technology validated in relevant environment

Industries

- Pharmaceutical Industry
- Human Medicine

Ref. No.

2838

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