



# FILARIA: RIVER BLINDNESS

## DEVELOPING A RAPID CURE FOR A DEVASTATING ILLNESS

**New treatments are needed for filarial diseases**, including onchocerciasis (river blindness), an eye and skin disease caused by filarial worms. Millions are at risk of river blindness in sub-Saharan Africa, where people can be infected by blackflies that breed next to fast-flowing rivers. In humans, the worms produce offspring (microfilariae) that migrate through the skin or eyes. This can cause severe itching and disfiguring skin lesions, and infection can lead to visual impairment and blindness.

### FILARIAL DISEASES STATISTICS



**205** ABOUT  
MILLION  
people at risk



**21** MILLION  
people infected with  
river blindness



**>1** MILLION  
people with  
vision loss

### TREATMENT CHALLENGE

The current approach for river blindness is based on the mass distribution of preventive chemotherapy, which has been successful in reducing the prevalence of the disease. But these treatments need to be repeated annually or biannually for many years because they only kill juvenile worms, not adult worms, which can live for more than 10 years in the human body. There are also major gaps in treatment coverage in regions where people are co-infected by both river blindness and *Loa loa*, another filarial disease also known as 'African eye worm'. The current treatment cannot be used in these settings because it can cause a potentially fatal inflammatory reaction in people with the co-infection.

**DNDi aims to deliver a safe, effective, affordable, and field-adapted drug** that can kill adult filarial worms (a 'macrofilaricide') and be used for prevention or individual treatment.

“ You’ve got to help people; you can’t leave people like this. ”

**Angel Mozenge**, from Uma, Democratic Republic of Congo, volunteers to distribute a drug used to prevent river blindness. She thinks that over half of the population of her village refuses to take the preventive drug.



## Advancing three drug candidates for river blindness

Clinical proof-of-concept studies are being prepared in West and Central Africa for two potentially macrofilaricidal drugs: emodepside with Bayer, and TylAMac with AbbVie. DNDi is planning Phase I trials for a third potential drug, oxfendazole, and has signed an agreement with Celgene (now part of Bristol-Myers Squibb) for another potentially macrofilaricidal compound known as CC6166.

In 2019, DNDi announced the launch of a public-private partnership called the Helminth Elimination Platform (HELP), a new consortium coordinated by the Swiss Tropical and Public Health Institute to identify new treatments against ‘nematode’ worms, including onchocerciasis, lymphatic filariasis, hookworm, and whipworm.



“ Bayer is proud to collaborate with DNDi in the development of emodepside as novel treatment for people with river blindness. After completion of Phase I studies, we are excited to conduct a Phase II study with DNDi in Ghana to evaluate emodepside’s potential to alleviate suffering from this debilitating disease. ”

**Dr Joerg Moeller**

Head of Global R&D and Member of the Pharmaceuticals Executive Committee, Bayer AG

“ We are working closely with DNDi to develop the novel antibiotic ABBV-4083 (TylAMac), which targets the Wolbachia bacteria that have an endosymbiotic relationship with the worms that cause river blindness. We are thrilled that DNDi is preparing for a Phase II study in the DRC and is renovating clinical sites in areas hard-hit by river blindness. ”

**Dr Dale J. Kempf**

Distinguished Research Fellow, AbbVie