



FACTS



About

240 M

people at risk

**19 M**

people infected

**>1 M**people with vision
loss

FILARIA: RIVER BLINDNESS

Developing a rapid cure for millions at risk

Onchocerciasis – or river blindness – is a filarial disease caused by a parasitic worm transmitted by the bite of blackflies. It can result in long-term suffering, socio-economic exclusion, and chronic illness, including visual impairment and blindness. Current prevention efforts are based on mass administration of the drug ivermectin, which, while effective in reducing transmission of the disease, must be administered every year for 10 years or more because it only kills juvenile worms and not the adults. It also cannot be used in people infected with another worm, African eye worm, because of the risk of potentially fatal side effects.

The push for progress

New tools that permanently sterilize or kill the adult worms that cause river blindness are needed to break the cycle of transmission and support elimination of the disease. We have built a portfolio of four R&D projects for river blindness and are advancing the development of new drug candidates together with our partners. DNDi is also joining forces within the Helminth Elimination Platform (HELP), a consortium of research institutes, universities, NGOs, and pharmaceutical companies committed to developing new treatments for infections caused by parasitic worms.

Our goal is now to advance the development of new drug candidates, complete Phase II trials, and launch a Phase III confirmatory trial that we hope will result soon after in new treatment options for onchocerciasis. Our research efforts will also support the development of urgently needed diagnostic tools.



Photo credit: Ley Uwera-DNDi

For 30 years, **Professor Alphonse Assani** taught primary school students in the city of Kisangani, Democratic Republic of the Congo. Forced to flee conflict, he later settled in the village of Makana. While tending his fields, he was bitten by blackflies that transmit river blindness. The disease has taken a heavy physical and emotional toll on Professor Assani, but he strives to use his experience to raise awareness and help others.

“ Without research, we can't advance. We need research. We need to innovate.

Joining forces to deliver a rapid cure

In 2021, together with AbbVie and other partners, DNDi launched Phase II trials for emodepside and flubentylisin (formerly ABBV-4083) at study sites in the Democratic Republic of the Congo and Ghana, respectively. A third drug – oxfendazole – is also gaining ground in the drug development process. A fourth drug, CC6166, is in pre-clinical development and shows promise as a macrofilaricide candidate for filarial diseases.

Emodepside has a novel mode of action with a broad spectrum of activity against multiple stages of the parasite's life cycle, including adult worms. Under a joint development agreement, Bayer AG provides the active ingredient emodepside to DNDi, which is responsible for its clinical development. Bayer AG is responsible for pre-clinical and pharmaceutical development, as well as registration, manufacturing, and distribution of the drug.

Flubentylisin is a derivative of tylosin, an antibiotic that targets *Wolbachia*, a bacteria needed for the survival and reproductive processes of adult filarial worms. Coordinating with DNDi, the compound was identified through a screening process led by AbbVie and the anti-*Wolbachia* consortium A-WOL at the Liverpool School of Tropical Medicine.

With first-in-human clinical studies completed, preparations for a Phase I trial are underway to test the bioavailability of an oxfendazole tablet that is field adapted and easy to use. The trial will be sponsored by the Swiss Tropical and Public Health Institute and conducted by the Ifakara Health Institute in Tanzania.