
Seek and ye shall find: Molecular surveillance of bird schistosomes and swimmer's itch

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Swimmer's itch (cercarial dermatitis) is a waterborne allergic skin condition caused by bird schistosomes, parasites that accidentally infect humans. With reported cases increasing across Europe, including recent outbreaks in Poland and Denmark, the disease presents both public health and socio-economic challenges. Traditional monitoring relies on collecting and examining aquatic snails, the parasites' intermediate hosts, a process that is labour-intensive and often limited in scope.

This project builds on the development of an environmental DNA (eDNA) toolkit using loop-mediated isothermal amplification (LAMP) for rapid and reliable detection of bird schistosomes directly from water samples. Fieldwork and training sessions in Poland and Denmark will equip parasitologists with the skills needed to collect and process samples, apply molecular techniques, and interpret results. Testing the toolkit under different ecological conditions will validate its robustness, reproducibility, and usability in diverse settings.

By fostering cross-border collaboration between research teams in Prague, Copenhagen, and Warsaw, the project will establish a sustainable monitoring network, encourage systematic data sharing, and strengthen preparedness for emerging parasitic threats. The integration of molecular diagnostics, parasitology, and environmental science ensures that research outputs will be translated into practical public health interventions, creating lasting impact beyond the project's duration.