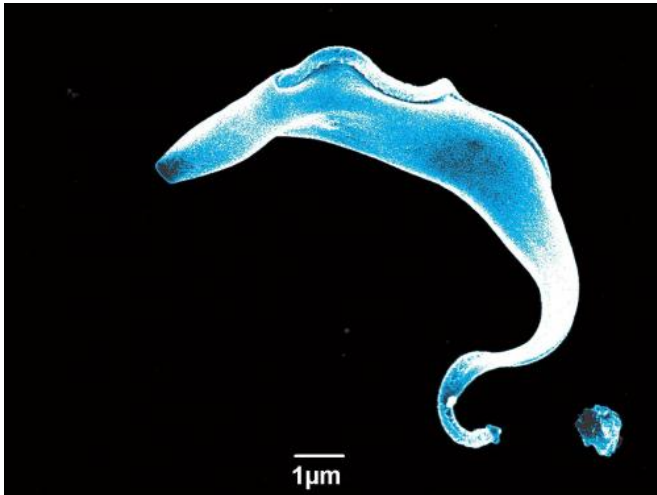


Silencing signals sent by parasite could aid sleeping sickness fight

15 December 2013



This is a microscopic image of the parasite that causes sleeping sickness. Credit: Dr. Susan Vaughan, Oxford Brookes University

A new discovery by scientists could help combat the spread of sleeping sickness.

Insights into how the [parasites](#) that cause the disease are able to communicate with one another could help limit the spread of the infection.

The findings suggest that new drugs could be designed to disrupt the flow of messages sent between these [infectious microorganisms](#).

Sleeping sickness – so named because it disrupts [sleep patterns](#) – is transmitted by the bite of the [tsetse fly](#), and more than 69 million people in Africa are at risk of infection. Untreated, it can damage the nervous system, leading to coma, [organ failure](#) and death.

During infection, the parasites – known as African trypanosomes – multiply in the bloodstream and communicate with each other by releasing a small

molecule. When levels of this molecule become sufficiently high, this acts as a signal for the parasites to stop replicating and to change into a form that can be picked up by biting flies and spread.

A team led by researchers at the University of Edinburgh were able to uncover key components of the parasites' messaging system. They used a technique known as gene silencing, to identify those genes that are used to respond to the communication signals and the mechanisms involved.

Professor Keith Matthews, of the University of Edinburgh's School of Biological Sciences, who led the research, said: "Parasites are adept at communicating with one another to promote their survival in our bodies and ensure their spread – but by manipulating their messages, new ways to combat these infections are likely to emerge."

The research, carried out in collaboration with the University of Dundee, was published in the journal *Nature*, and funded by the Wellcome Trust.

More information: Genome-wide dissection of the quorum sensing signalling pathway in *Trypanosoma brucei*, [DOI: 10.1038/nature12864](https://doi.org/10.1038/nature12864)

Provided by University of Edinburgh

APA citation: Silencing signals sent by parasite could aid sleeping sickness fight (2013, December 15)
retrieved 3 July 2022 from <https://medicalxpress.com/news/2013-12-silencing-parasite-aid-sickness.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.