

# Wolbachia endobacteria in filarial infections - exploring their usefulness as targets for novel chemotherapies that are anti-filarial and improve lymphoedema

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<b>Registration date</b> 13/02/2009	<b>Overall study status</b> Completed	<input type="checkbox"/> Protocol
<b>Last Edited</b> 14/08/2012	<b>Condition category</b> Infections and Infestations	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

Not provided at time of registration

## Contact information

### Type(s)

Scientific

### Contact name

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### Contact details

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## Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

## Secondary identifying numbers

1/81 306

# Study information

## Scientific Title

Wolbachia endobacteria in filarial infections - exploring their usefulness as targets for novel chemotherapies that are anti-filarial and improve lymphoedema: a randomised double blind placebo-controlled trial

## Study objectives

Filarial infections belong to the major diseases in sub-Saharan Africa and are strongly associated with poverty. At present, World Health Organization (WHO) led control activities in Africa mainly rely on mass administration of microfilaricidal drugs, with a measure of success. However, it has become clear that new, complementary therapies, ideally being macrofilaricidal, must be developed for sustainable control.

In lymphatic filariasis (LF), there is the additional need to deliver new therapies for lymphatic pathology, i.e. lymphoedema and urogenital pathology such as hydrocele and lymphocele, which are not targeted by current mass drug administrations. Depletion of Wolbachia essential endosymbionts of filariae with doxycycline, an approach established by our group, resulted in macrofilaricidal activity in LF. The present study hypothesises that Wolbachia also play a major role in inducing and maintaining lymphatic pathology, and that doxycycline may therefore improve lymphoedema.

The aim of this project is:

1. To analyse to what extent lymphoedema is caused by Wolbachia. To this, the Wolbachia-depleting antibiotic doxycycline will be compared with amoxicillin, which does not target Wolbachia but only opportunistic exogenous bacteria that may worsen lymphoedema.
2. To analyse the role of Wolbachia in the systemic immune responses in lymphoedema patients, by comparing immune responses before and after Wolbachia depletion

## Ethics approval required

Old ethics approval format

## Ethics approval(s)

The Committee on Human Research Publication and Ethics, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana approved on 25th November 2005

## Study design

Randomised double blind placebo-controlled trial

## Primary study design

Interventional

## Secondary study design

Randomised controlled trial

## Study setting(s)

Other

**Study type(s)**

Treatment

**Participant information sheet**

Not available in web format, please use the contact details below to request a patient information sheet

**Health condition(s) or problem(s) studied**

Lymphatic filariasis (*Wuchereria bancrofti*)

**Interventions**

Study drugs and treatment regimens:

1. 200 mg/day doxycycline for 6 weeks
2. 1000 mg/day amoxicillin for 6 weeks
3. Placebo for 6 weeks

Contact details for Joint Principal Investigators:

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**Intervention Type**

Drug

**Phase**

Phase II

**Drug/device/biological/vaccine name(s)**

Doxycycline, amoxicillin

**Primary outcome measure**

Reduction of the stage of lymphoedema and number of acute attacks, measured pre-treatment as well as 3 months, 12 months and 24 months after the start of drug administration

**Secondary outcome measures**

1. Reduction in circulating filarial antigen levels as a measure of a macrofilaricidal effect of doxycycline
2. Change in systemic immune responses

All measured pre-treatment as well as 3 months, 12 months and 24 months after the start of drug administration.

**Overall study start date**

01/12/2005

**Completion date**

30/03/2009

## Eligibility

**Key inclusion criteria**

1. Men and women aged between 18 - 60 years
2. Resident in the village for five years or more
3. Clinical stage of lymphoedema (1 - 5) of at least one extremity
4. Good general health without any clinical condition requiring long-term medication
5. Minimum body weight 40 kg

**Participant type(s)**

Patient

**Age group**

Adult

**Lower age limit**

18 Years

**Sex**

Both

**Target number of participants**

150

**Key exclusion criteria**

1. Pregnancy (if not obvious all women are tested by dipstick chemistry: beta-human chorionic gonadotrophin [BhCG])
2. Currently breast-feeding
3. Evidence of clinically significant neurological, cardiac, pulmonary, hepatic, rheumatological, or renal disease by history, physical examination, and/or laboratory tests
4. Behavioural, cognitive or psychiatric disease that, in the opinion of the investigator, affects the ability of the volunteer to understand and cooperate with the study protocol
5. Laboratory evidence of liver disease (aspartate aminotransferase [AST], alanine aminotransferase [ALT] and/or gamma-glutamyl transferase [gGT] greater than 1.25 times the upper limit of normal of the testing laboratory)
6. Laboratory evidence of renal disease (serum creatinine greater than 1.25 times the upper limit of normal of the testing laboratory)

7. Other condition that, in the opinion of the investigator, would jeopardise the safety or rights of a volunteer participating in the trial or would render the subject unable to comply with the protocol
8. Volunteer has abused alcohol or illicit drugs during the past 6 months by history
9. History of severe allergic reaction or anaphylaxis
10. Intolerance to doxycycline or amoxicillin

**Date of first enrolment**

01/12/2005

**Date of final enrolment**

30/03/2009

## **Locations**

**Countries of recruitment**

Germany

Ghana

**Study participating centre**

**Institute of Medical Microbiology, Immunology and Parasitology**

Bonn

Germany

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## **Sponsor information**

**Organisation**

Volkswagen Foundation (VolkswagenStiftung) (Germany)

**Sponsor details**

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**Sponsor type**

Research organisation

**Website**

<http://www.volkswagenstiftung.de>

**ROR**

<https://ror.org/03bsmfz84>

## Funder(s)

### Funder type

Research organisation

### Funder Name

Volkswagen Foundation (VolkswagenStiftung) (Germany) (ref: 1/81 306)

### Alternative Name(s)

VolkswagenStiftung

### Funding Body Type

Private sector organisation

### Funding Body Subtype

Trusts, charities, foundations (both public and private)

### Location

Germany

## Results and Publications

### Publication and dissemination plan

Not provided at time of registration

### Intention to publish date

### Individual participant data (IPD) sharing plan

### IPD sharing plan summary

Not provided at time of registration

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	results	01/09/2012		Yes	No