Vacc-iNTS project

The overall objective of the **Vacc-iNTS** project - **"Advancing a GMMA-based vaccine against invasive non-typhoidal salmonellosis through Phase 1 trial in Europe and sub-Saharan Africa" -** is to advance the development of the iNTS-GMMA candidate vaccine against the invasive non-typhoidal Salmonellosis (iNTS). iNTS is an emerging bacterial neglected infectious disease responsible for a huge health and socioeconomic impact in sub-Saharan Africa (sSA).

There is no licensed vaccine against iNTS and the emergence of multidrug antimicrobial resistant strains poses a major challenge in disease treatment especially in limited-resources settings. The Vacc-iNTS research project aims at bridging the gap between preclinical and early clinical development of a novel vaccine against iNTS.

The **iNTS-GMMA** candidate vaccine is based on the highly cost-effective GMMA technology, and it is composed of highly immunogenic outer membrane blebs used as antigen delivery system from the two most common African iNTS serotypes (Typhimurium and Enteritidis).

The objective of the Vacc-iNTS project is to conduct a Phase I study to demonstrate the safety and immunogenicity of the iNTS-GMMA candidate vaccine in healthy European and African adults, and to strengthen a collaborative network of iNTS experts to raise awareness of disease burden and favor vaccine deployment in limited-resource settings.

Vacc-iNTS facts

Start date: 1st October 2019
Duration: 60 months
EC contribution: 6 871 188.73 €
Coordinator: Sclavo Vaccines Association
Partners: 12 from 8 countries

Vacc-iNTS objectives

- **GMP manufacture** of the iNTS-GMMA vaccine and placebo lots;
- Conduction of a **two staged Phase I study** to demonstrate safety and immunogenicity of the iNTS-GMMA vaccine in healthy European and African adults;
- In depth **analysis of the immunological and molecular signatures** elicited by the iNTS-GMMA vaccine;
- **Sero-epidemiology studies** in high-burden African sites to plan for future Phase II and III studies on the iNTS-GMMA vaccine ;
- **Epidemiological analysis** and mathematical modelling of iNTS disease for an accurate estimate of disease burden;
- Planning and evaluation of **effective deployment and uptake of the iNTS-GMMA vaccine** in low-resource public health systems;
- **Training** of physicians through the Master Program in Vaccinology and Pharmaceutical Clinical Development and laboratory staff from iNTS endemic countries;
- **Strengthen a multidisciplinary collaborative network** of iNTS experts from academia and industry to delineate a clear pathway for vaccine uptake by health systems in limited-resource settings.

Vacc-iNTS partnership

Vacc-iNTS is a public-private consortium of 12 partners from 8 different countries, including iNTS-endemic countries (Burkina Faso, Ghana, Kenya), involving experts from academic and research institutions.
The Vacc-iNTS project is coordinated by the non-profit organization Sclavo Vaccines Association (www.sclavo.org).

Vacc-iNTS Partners

- Sclavo Vaccines Institute (IT)
- GSK Vaccines Institute for Global Health (IT)
- University of Oxford (UK)
- Kenya Medical Research Institute (UK)
- University of Cambridge (UK)
- University of Siena (IT)
- Institute of Tropical Medicine (BE)
- University of Liverpool (UK)
- University of Otago (NZ)
- University of Ouagadougou (BF)
- Kwame Nkrumah University of Science and Technology Kumasi (GH)
- MMGH Consulting GMBH (CH)

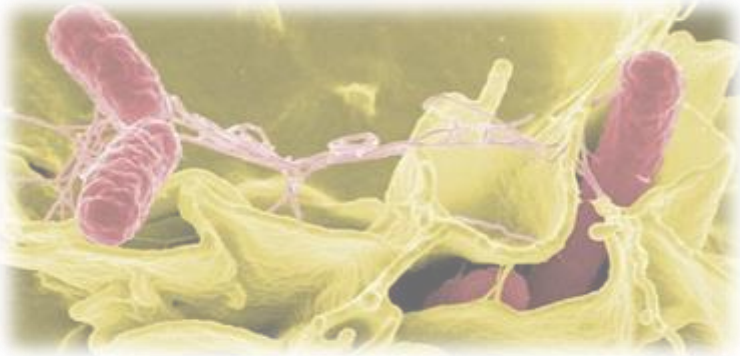
Vacc iNTS

Need for an iNTS vaccine

Invasive non-typhoidal Salmonellosis (**iNTS**) is an important emerging bacterial neglected infectious disease of sub-Saharan Africa (sSA). In 2017, iNTS was estimated to cause 59.100 deaths globally (GBD 2017, Lancet vol 392, 2018).
The majority of iNTS cases are observed in sSA, where it is among the leading cause of community-acquired bloodstream infection with an average case fatality rate of 19% (Uche et al., PloS Negl Trop Dis 2017). Infants and young children aged 9-24 months and HIV-infected individuals of all ages are the most affected. *Salmonella enterica* serovars Typhimurium and Enteritidis are the most common associated with invasive disease, causing 90% of cases.

There is no licensed vaccine against iNTS, and the emergence of multidrug antimicrobial resistant strains is compromising efficacy of current affordable antimicrobials. High case fatality rates, difficult diagnosis and increasing antibiotic resistance strongly advocate for rapid development of an effective vaccine.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 815439



Vacc iNTS

Advancing a GMMA-based vaccine against invasive non-typhoidal salmonellosis through Phase 1 trial in Europe and sub-Saharan Africa