

Programme: Horizon Europe

Project Start Date: 01/03/2025

Project Duration: 60 months

Project ID: 101217122

Call for proposals: HORIZON-WIDERA-2023-ACCESS-06

Coordinator: ACADEMISCH ZIEKENHUIS LEIDEN

Project participants: 2

Project website: <https://www.wormvacs.org/>

Project value: 593,587.50€

Genos contribution: 539,625.00€



Co-funded by
the European Union

WORMVACS2.0

Innovations For Vaccines Against Helminth Infections - Glycosylation Signatures Of Immunity

The WORMVACS2.0 Hop-on proposal aims to address critical gaps in our understanding of protective immunity against helminth infections, with a particular focus on glycosylation, a complex and common posttranslational modification of proteins. Glycans play essential roles in infectious disease biology, such as mediating host-pathogen interactions, contributing to immune effector functions, and regulating host immune responses.

Despite the importance of glycosylation in immunity, WORMVACS2.0 currently lacks an in-depth glycosylation analysis of the host's immune system components - a highly relevant yet underexplored aspect of immunity against helminths that needs to be addressed in support of the development of effective anti-helminth vaccines.

To address this gap, GENOS, a global leader in high-throughput glycomics, will join the WORMVACS2.0 consortium to perform comprehensive glycosylation analyses on samples from controlled human helminth infection trials, natural infection cohorts, and animal vaccination models. This will include studying the glycosylation patterns of total serum/plasma proteins, immunoglobulins (IgG, IgA, IgM), alpha-1-acid glycoprotein and complement component 3. The project aims to uncover inter-individual differences, track longitudinal changes, and investigate associations between glycosylation patterns and clinical, parasitological, and immunological data.

The project's objectives will be achieved through GENOS' cutting-edge glycoanalytical technologies, which have been successfully applied in largescale studies across various diseases. The findings are expected to enhance the WORMVACS2.0 consortium's capacity to develop more effective vaccines by incorporating insights into glycosylation and its role in protective immunity, thereby aligning with the work programme's goals of advancing vaccine research for neglected tropical diseases