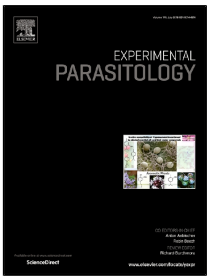
# Accepted Manuscript




Longitudinal cohort study of serum antibody responses towards *Giardia lamblia* variant-specific surface proteins in a non-endemic area

Torunn Hjøllo, Eirik Bratland, Hans Steinsland, Matej Radunovic, Nina Langeland, Kurt Hanevik

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| PII: | S0014-4894(18)30081-X |
| DOI: | 10.1016/j.exppara.2018.06.005 |
| Reference: | YEXPR 7571 |
| To appear in: | *Experimental Parasitology* |
| Received Date: | 15 February 2018 |
| Accepted Date: | 12 June 2018 |

Please cite this article as: Torunn Hjøllo, Eirik Bratland, Hans Steinsland, Matej Radunovic, Nina Langeland, Kurt Hanevik, Longitudinal cohort study of serum antibody responses towards *Giardia lamblia* variant-specific surface proteins in a non-endemic area, *Experimental Parasitology* (2018), doi: 10.1016/j.exppara.2018.06.005

**Title:** Longitudinal cohort study of serum antibody responses towards *Giardia lamblia* variant-specific surface proteins in a non-endemic area

**Authors**: Torunn Hjøllo 1, Eirik Bratland 1, Hans Steinsland 3,4, Matej Radunovic 1, Nina Langeland 1,2 and Kurt Hanevik 1,2

**Affiliations:**

1. Department of Clinical Science, Faculty of Medicine, University of Bergen
2. Norwegian National Advisory Unit on Tropical Infectious Diseases, Department of Medicine, Haukeland University Hospital, Bergen, Norway
3. Centre for International Health, Department of Global Public Health and Primary Care, University of Bergen, Norway
4. Department of Biomedicine, University of Bergen, Bergen, Norway

# Abstract

Introduction/Aims: The long-term humoral immune response after a natural giardiasis infection is not well understood. The aim of this study was to evaluate longitudinal serum IgA and IgG/M responses towards conserved regions of two *Giardia* variant-specific surface proteins (VSP) and whether these responses differ between *Giardia* assemblages and durations of infection.

Methods: We recruited thirty *Giardia*-positive patients, mainly returning travellers, and eighteen healthy adults presumed to be *Giardia* unexposed. Blood samples were collected before treatment, and at 6 weeks, 6 months and 12 months after the infection cleared. We used a multiplex bead-based flow cytometry immunoassay to measure *Giardia* specific IgA and IgG/M responses targeting two recombinant antigens from *G. lamblia* VSP proteins 3 and 5 (VSP3 and VSP5).

Results: Serum levels of anti-VSP5 and anti-VSP3 IgA decreased rapidly to low levels after treatment but continued to be substantially higher than that of presumed unexposed controls even after 6 and 12 months. The IgG/M response decreased more gradually but remained significantly higher than presumed unexposed controls at all time points, except for anti-VSP3 at 12 months. There were no significant difference in responses for infections with