

# بسم الله الرحمن الرحيم





# شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم





# جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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# بعض الوثائق الأصلية تالفة







بالرسالة صفحات  
لم ترد بالأصل





# **Evaluation of point of care testing for Diagnosis of Human Giardiasis**

Thesis

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# List of Abbreviations

Abb.	Meaning
EIA.....	enzyme immunoassays
ELISA .....	enzyme-linked immunosorbent assays
FDA .....	Food and Drug Administration
G. lamblia .....	Giardia lamblia
ICT .....	immunochromatography
IDSA .....	Infectious Diseases Society of America
IFA.....	Immuno Fluorescence assay
IgE.....	immunoglobulin E
OD .....	optical density
RDTs.....	rapid antigen detection tests
RFLP.....	restriction fragment length polymorphism
SAF.....	sodium acetate–acetic acid–formalin
sIgA.....	Secretory IgA
VSP.....	variant surface proteins

# Introduction



# INTRODUCTION

*Giardia* is a unicellular flagellated parasite that infects a wide range of vertebrate hosts, including humans. Infection is usually transmitted through ingestion of infective cysts (**Robertson, 2013**). Infection occurs worldwide, but mostly affects populations in the developing countries. Giardiasis is commonly asymptomatic but mild to moderate self-limiting diarrhea occurs in some cases. In other cases, diarrhea may be severe, prolonged, and even life threatening (**Hawash et al., 2016**).

In particular, children in resource-poor countries can be severely affected by *Giardia* infections, which may lead to significant malabsorption, weight loss and growth retardation (**Halliez and Buret, 2013**). Some survey data indicates that in industrialized countries, the prevalence ranges between 2% and 5% and the rate for developing countries ranges from 20% to 30% (**Sanchez et al., 2017**).

The diagnosis of *Giardia* infection relies totally on laboratory diagnosis. Examination of feces with classical wet mount microscopy is frequently employed as a rapid, cheap, and simple method. Microscopy, though gold standard, offers low sensitivity as fecal shedding of parasites is usually intermittent and sometimes load is very low and it depends to a great extent on the skill and experience of laboratory personnel (**McHardy et al., 2014**).



Commercially available ELISA kits are found to be rapid and effective method to diagnose Giardiasis by detecting *Giardia* associated antigens (*Jahan et al., 2014*). In addition, rapid immunochromatographic-based kits have been developed and became widely used for detection of *Giardia* antigens in stool samples. These lateral flow immunoassays can be accomplished within 10 minutes (*Hawash, 2014*). Molecular techniques as PCR are also available; however, in contrast to microscopy it needs a high-tech laboratory, which is even more of a challenge for diagnostic laboratories within endemic countries (*Meurs et al., 2017*).