

بسم الله الرحمن الرحيم

Sudan University of Science and Technology

College of Graduate Studies

Detection of *Shigella bodyii* in Stool Specimens by Real time Polymerase Chain Reaction

**كشف شيقلة بوديى في عينات البراز بتقنية تفاعل
البلمرة المتسلسل الزمنى**

A dissertation Submitted in Partial Fulfillment for the Requirement
of M.S.c. In Medical Laboratory (Microbiology)

By

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بسم الله الرحمن الرحيم

﴿قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ
أَنْتَ الْعَلِيمُ الْحَكِيمُ﴾

صدق الله العظيم

(سورة البقرة الآية 32)

Dedication

To my father ...& sons

Who work hardly for us.

To soul of my mother ...

Who taught me

How I could be human

To my beloved brothers and sisters....

To my extended family

To the people whom I loved,

Respect and appreciate....

I dedicate this research.

Acknowledgment

- ❖ All praise and thanks to **Allah** the Almighty, who blessed me with the courage for preparation and completion of this study.
- ❖ With a great deal of respect I want to thank my supervisor Dr. Hamodi Ahmed Saeed, who spared neither time nor effort in enlightening and helping me.
- ❖ I want to extend my deep thank to Dr. Mogahd, Ustaz Mansoor and Dr. Mesk Alyaman for helping and supporting.
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- ❖ I am very grateful to Microbiology department staff that participated in this study.
- ❖ It is a pleasure to express my respect sincere thanks and gratitude to all test subjects for agreement to participate in this study.

Abstract

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This study was carried out in the period from May 2007- March 2008 to detect the presence of *Shigella bodyii* in patients with diarrheal disease. Fourty seven specimens were collected from patients attending Khartoum Teaching Hospital, Gaffer Ibniauff Specialized Hospital & Omdurman Teaching Hospital.

Bacterial DNA was extracted from each stool specimen using phenol-chloroform technique. Then Real Time PCR technique was adopted to detect the presence of *Shigella bodyii* using specific primer.

The result revealed that only 7 (14.8%) specimens were positive, while 40 (85.2%) were negatives specimens.

The study concluded that the Real Time PCR facilitates detectio0n of *Shigella bodyii* without bacteriological culture.

Comment on the number of the cell of *Shigella bodyii* according to cycle threshold shown by generated graphs.

Show the distribution of the 7 positive specimens according to the hospital, gender & age group.

النتائج

تم إجراء التحليلات الكيميائية والفيزيائية للمنتج في عامي 2007 و 2008 في مختبري الأبحاث في جامعة القاهرة. النتائج هي:

تم إجراء التحليلات الكيميائية والفيزيائية للمنتج في عامي 2007 و 2008 في مختبري الأبحاث في جامعة القاهرة. النتائج هي:

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لُستخلص الحمض النووي- من عينات البراز التي جمعت بواسطة طريقة فينول كلوروفورم ، ثم استخدمت طريقة تفاعل البلمرة المتسلسل الزمني

للتحديد الكمي للبكتيريا. النتائج هي:

كانت النتائج الإيجابية المتحصل- عليها- هي (7) عينات تمثل (14.8 %) بينما كانت النتائج السلبية هي (40) عينات تمثل (85.2 %)

النتائج هي:

هذا لدراسة خلص إلى أن طريقة تفاعل البلمرة المتسلسل الزمني يمكن استخدامه لاكتشاف البكتيريا الممرضة والحاجة إلى زراعة العينة

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