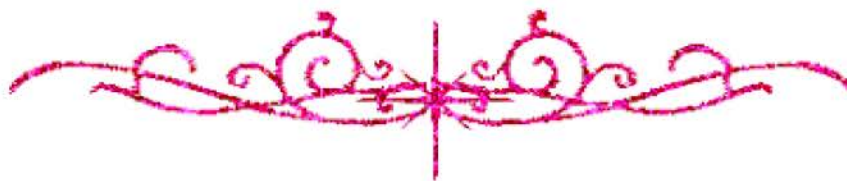


بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ





شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

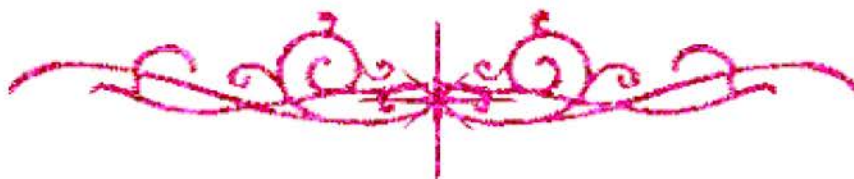
قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغييرات



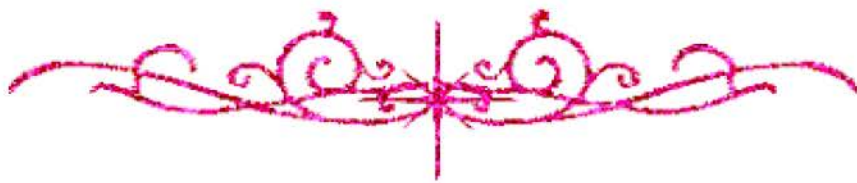
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تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



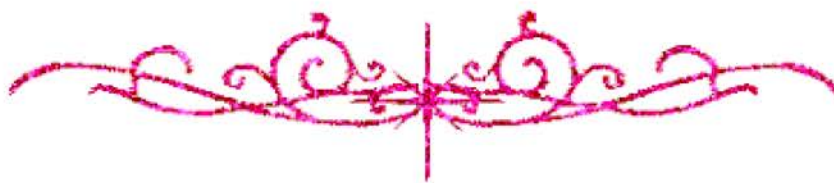


بعض الوثائق الأصلية تالفة





بالرسالة صفحات لم ترد بالأصل





**Antibacterial Effectiveness of Ginger Extract and
Chlorhexidine as Root Canal Irrigants in Primary
Teeth Contaminated with Enterococcus faecalis
(An In Vitro Study)**

Thesis submitted to
The Department of Pediatric Dentistry and Dental Public
Health, Faculty of Dentistry, Ain Shams University
In partial fulfillment of the requirements for the Master's
Degree in **Pediatric Dentistry**

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(وَقُلِ اعْمَلُوا فَسَيَرَى اللَّهُ عَمَلَكُمْ وَرَسُولُهُ وَالْمُؤْمِنُونَ وَسَتُرَدُّونَ إِلَى
عَالِمِ الْغَيْبِ وَالشَّهَادَةِ فَيُنَبِّئُكُمْ بِمَا كُنْتُمْ تَعْمَلُونَ)

صدق الله العظيم

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List of Abbreviations

Abbreviation	Full term
AAPD	American Academy of Pediatric Dentistry
ANUG	Acute Necrotizing Ulcerative Gingivitis
BHI	Brain Heart Infusion
BOP	Bleeding On Probing
C.officinalis	Calendula officinalis
C. albicans	Candida albicans
CAT	Catalase
CHX	Chlorhexidine
CP	Chronic Periodontitis
CAL	Clinical Attachment Loss
CFU	Colony-forming Unit
CRP	C-reactive protein
E. faecalis	Enterococcus faecalis
E.coli	Escherichia coli
IL-6	Interleukin-6
ml	millimeter
NaOCl	Sodium Hypochlorite
NSPT	Non-surgical periodontal therapy
PCR	Polymerase Chain Reaction
PD	Pocket Depth
R. officinalis	Rosmarinasofficinalis
S.typhi	Salmonella typhi
SD	Standard Deviation
S.aureus	Staphylococcus aureus
S.mutans	Streptococcus mutans
SOD	Superoxide dismutase
T2DM	Type 2 Diabetes Mellitus
WHO	World Health Organization
Z officinale	Zingiberofficinale

Introduction

The aim of root canal treatment is to maintain teeth with compromised pulp in the oral cavity in order to avoid more complex treatments. This reaches more importance in children, as the early loss of deciduous teeth can compromise the development of the stomatognathic system and the installation of the permanent dentition as well as can lead to emotional, psychological and behavioral problems. The primary objective of pediatric pulp therapy is to maintain the deciduous teeth in their form and function and to facilitate the proper eruption of permanent successors.⁽¹⁾

Deciduous teeth with primary infected root canals are characterized by the predominance of obligatory both anaerobic and aerobic microorganisms. However, in secondary infected root canals, there is a predominance of facultative anaerobic microorganisms. *Enterococcus faecalis* (*E.faecalis*) is one of the most predominant bacteria found in root canal failures and persistent infections of endodontic treatment.⁽²⁾

The success of endodontic treatment in primary teeth strongly relies on achieving an adequate level of disinfection within their root canals. Mechanical instrumentation cannot effectively eliminate the micro-flora from the root canals of the teeth due to their anatomical complexity. The dependence on irrigating solutions for endodontic success becomes more crucial, especially in primary teeth due to thin dentinal walls, complex morphology, and irregularity of root canal system.⁽³⁾

Among the phases of endodontic treatment, the choice of instrumentation and irrigating solution that permit bacterial neutralization and toxin inactivation without negative interference with the healing process
