بسم الله الرحمن الرحيم

"وقل رب زدنى علما"

صدق الله العظيم

سورة طه

آية رقم:(١١٤)

In VIVO STUDY ON THE BIOCOMPATIBILITY OF THE NEWLY DEVELOPED CALCIUM SILICATE BASED ENDODONTIC SEALER "*iRoot® SP*"

Thesis

Submitted to the Faculty of Oral and Dental Medicine,

Cairo University

In partial fulfillment of the requirements for the

Master Degree in Oral Pathology

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2010

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Acknowledgement

In the first place, I would like to record my gratitude and thanks to Prof. Dr. Amina Kamel, Professor of Oral Pathology, Faculty of Oral and Dental Medicine, Cairo University, for her supervision, encouragement and continuous guidance from the very early stage of this research, as well as for giving me extraordinary experiences throughout the work.

I also gratefully acknowledge Dr. Dalia Hussein El-Rouby, Assistant Professor of Oral Pathology, Faculty of Oral and Dental Medicine, Cairo University, for her tremendous effort, advice, supervision and crucial contribution throughout the research, which made her a backbone to this thesis.

My deep gratitude to Dr. Hend Mahmoud Abu El Nasr, lecturer of Endodontics, Faculty of Oral and Dental Medicine, Cairo University, for her generous help and valuable guidance at the beginning of this research.

I thank my family: my parents, for giving me life in the first place, for educating me with aspects from both arts and sciences, for their unconditional support and encouragement to pursue my interests.

Finally, my sincere thanks are extended to all members of Oral Pathology Department, Faculty of Oral and Dental Medicine, Cairo University, for their kind help.

Dedication

To

- ***The memory of my beloved father.***
- ***My mother; for her unlimited love, sacrifice & support throughout my entire life.***
- ***My brothers Ahmed & Kareem; for their help & support.***
- ***My sister Reem & my dear friends "Hanan& Reham"; for their continuous encouragement.***

دراسة التوافق الحيوي المجراة لمادة حشو الجذور

"iRoot® SP"

على فئران التجارب

رسالة مقدمة من

الطبيبة/ رانيا عبد المعطى السيد

بكالوريوس طب وجراحة الفم والأسنان

جامعة عين شمس

تمهيدا للحصول على درجة الماجستير فى باثولوجيا الفم

كلية طب الفم والأسنان

جامعة القاهرة

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Introduction

The traditional concept of biocompatibility of dental materials is the compatibility of manufactured materials and devices with body tissues and fluids, i.e. lack of significant adverse reaction between the oral tissues ***(Browne et al, 1988).*** An updated definition of biocompatibility might be the ability of a restorative material to induce an appropriate and advantageous host response during its intended clinical usage ***(Murray et al, 2007).*** It is now recognized that; there are few materials, if any, which do not create a significant interaction with the host tissues ***(Browne et al, 1994).*** Such reactions may aid the oral healing response following restorative treatment ***(Murray et al, 2007).***

The main goal of endodontic therapy is the proper cleaning and shaping of the root canal system; as well as obturation with an inert, dimensionally stable and biologically compatible material ***(Gomes-Filho et al, 2007).*** A number of endodontic materials enter the market every day. Such compounds can be in contact with oral tissues over extended periods of time. In endodontic therapy, a sealer is basically used to fill the irregularities of the root canal system, bond the core material to the root canal walls, and serve as a lubricant ***(Lee et al, 2002).***

Despite the great variety of endodontic sealers available, a root canal sealer that possesses all the desirable physical and biological properties has yet to be found ***(Zafalon et al, 2007).*** Therefore, there has been continuous search in endodontics for a root canal sealer that combines acceptable biocompatibility and ideal physicochemical properties. Root canal sealers