



بسم الله الرحمن الرحيم

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ملاحظات:

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**Evaluating different properties of a  
premixed bioceramic-based endodontic  
sealer: An in vitro study**

Thesis

Submitted to the Faculty of Dentistry, Ain Shams University  
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Biomaterials Science

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

"وَإِنْ تَعَدُّوا نِعْمَةَ اللَّهِ لَا

تُحْصَوْهَا ۗ إِنَّ اللَّهَ لَغَفُورٌ

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## *Dedication*

*To my beloved family for providing me with unfailing support and continuous encouragement throughout my years of study and through the process of researching and writing this thesis*



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## List of Abbreviations

<b>Abbreviation</b>	<b>Explanation</b>
<b>ADA</b>	American Dental Association
<b>BCS</b>	Bioceramic Sealer
<b>BHI</b>	Brain Heart Infusion
<b>Ca<sup>+2</sup></b>	Calcium ion
<b>CHS</b>	Calcium Hydroxide Sealer
<b>DMEM</b>	Dulbecco's Modified Eagle Medium
<b>DMSO</b>	Dimethyl sulfoxide
<b>FAAS</b>	Flame atomic absorption spectroscopy
<b>GIC</b>	Glass Ionomer Cement
<b>ISO</b>	International Organization for Standardisation
<b>MTA</b>	Mineral trioxide aggregate
<b>MTT</b>	3-(4,5-dimethyl-thiazol-2-yl)- 2,5-Diphenyl-Tetrazolium Bromide

<b>OH<sup>-</sup></b>	Hydroxyl ion
<b>OD</b>	Optical Density
<b>pH</b>	Power of Hydrogen
<b>SD</b>	Standard Deviation
<b>ZnO</b>	Zinc Oxide



*Introduction*