MUTATION ANALYSIS OF ENAMELIN GENE (*ENAM*) IN PATIENTS WITH AMELOGENESIS IMPERFECTA

SATHIAN SURAVISANKUL

MASTER OF SCIENCE IN DENTISTRY

THE GRADUATE SCHOOL CHIANG MAI UNIVERSITY MARCH 2011 CHIANG MAI UNIVERSITY MARCH 2011

MUTATION ANALYSIS OF ENAMELIN GENE (*ENAM*) IN PATIENTS WITH AMELOGENESIS IMPERFECTA

SATHIAN SURAVISANKUL

A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN DENTISTRY

CODYNIGH CHIANG MAI UNIVERSITY MARCH 2011 CHIANG MAI UNIVERSITY MARCH 2011

MUTATION ANALYSIS OF ENAMELIN GENE (*ENAM*) IN PATIENTS WITH AMELOGENESIS IMPERFECTA

SATHIAN SURAVISANKUL

THIS THESIS HAS BEEN APPROVED TO BE A PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN DENTISTRY

EXAMINING COMMITTEE

THESIS ADVISOR

Vin Silot CHAIRPERSON

Prof. Dr. Vinai Sirichitra

Prof. Dr. Anak Iamaroon

.MEMBER

Prof. Dr. Anak Iamaroon

.....MEMBER

Asst. Prof. Dr. Kassara Pattamapun

25 March 2011 © Copyright by Chiang Mai University

ACKNOWLEDGMENTS

I would like to express my deep appreciation and sincere gratitude to the members of my examining committee for their wisdom, invaluable guidance and professionalism from the beginning to the end of the course of my research. They are Professor Vinai Sirichitra, chairperson, and the other committee members, Professor Anak Iamaroon and Assistant Professor Kassara Pattamapun.

I appreciate Dr. Piranit Kantaputra for his hard working on my research. Without him and his encouragement, I would not have been able to complete my project and achieve the goal of my study.

The success of my thesis was greatly influenced by the cooperation and support of the principals and the other people who participated in this study. I would like to extend my heartiest thanks to them for their patience and kind involvement in this study. My thankfulness also goes to the staff of Chiang Mai University and all others who have provided support and assistance in one way or another to make this study possible.

I appreciate all of my patients and members of their families for their kind participation in this study. I wish to thank Dr. Metawee Srikummool, Dr. Warissara Sripathomsawad, Dr. Onnida Wattanarat, Dr. Arunee Kaewkhampa and Dr. Saranya Thawanapong for training and helping me in genetic laboratory skills.

I would like to recognize the Thailand Research Fund, the European Commission and the Department of Orthodontics and Pediatric Dentistry, Faculty of Dentistry, Chiang Mai University, for the financial support that made this research possible.

I would like to acknowledge the Department of Orthodontics and Pediatric Dentistry, and Craniofacial Genetics Laboratory, Chiang Mai University for facilitating my access to equipment and working places.

I would like to express my gratefulness to Professor M. Kevin O Carroll, Professor Emeritus of the University of Mississippi School of Dentistry and Faculty

iii

Consultant at Chiang Mai University Faculty of Dentistry, for his assistance in the preparation of the thesis and manuscript.

Finally, I am thankful to my beloved parents, Mr. Sittichai and Ms. Duangchai, and my beloved sister and brother, Ms. Sophana and Mr. Chaloemphol, who love and encourage me. Special thanks are due to my instructors, Assistant Professor Chompoonuch Kunlertkij, Assistant Professor Jurairat Kunachaichote, Dr.Papimon Chompu-inwai, Assistant Professor Varissara Sirimaharaj, Dr.Ubonwan Teerapiboon and Dr. Wilawan Prucksathamrongkul for their support and care. I wish to thank my beloved friends, Dr. Nattawan, Dr. Sirichom, Dr. Darin, Dr. Sinee, Dr. Porntipa, Dr. Monticha, Dr. Amornrat, Dr. Chanika, Dr. Kamoltip, Dr. Achiraya, Dr. Thatsana, Dr. Chatri, Dr. Nattaphong, Ms. Phirawan, Ms. Dawan whose endless support and understanding have been profound throughout the difficult times of this Master's degree course. Without your love and support I am sure that I would not have been able to achieve so much.

Sathian Suravisankul

<mark>ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่</mark> Copyright[©] by Chiang Mai University All rights reserved