ISOLATION, BIOSYNTHESIS AND IDENTIFICATION OF CONJUGATED BILIRUBIN FOR USE AS STANDARD AND QUALITY CONTROL SERUM

JUTHARAK YIMSABAI

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

ลิขสิทธิมหาวิทยาลัยเชียงใหม Copyright[©] by Chiang Mai University All rights reserved

GRADUATE SCHOOL
CHIANG MAI UNIVERSITY
SEPTEMBER 2003

ISOLATION, BIOSYNTHESIS AND IDENTIFICATION OF CONJUGATED BILIRUBIN FOR USE AS STANDARD AND QUALITY CONTROL SERUM

JUTHARAK YIMSABAI

THIS THESIS HAS BEEN APPROVED

TO BE A PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTER OF SCIENCE

IN MEDICAL TECHNOLOGY

EXAMINING COMMITTEE

	R. Nimsurg	CHAIRPERSON
•••••	Assoc. Prof. Rujapa Nimsung W. Ruanpy Gh	MEMBER
as	Asst. Prof. Dr. Werawan Ruangyuttikarn A. Haenselwur	
Сору	Asst. Prof. Dr. Audomsark Haesungchare	rn MEMBER
	Prof Towassalr Vanlyan	a s a r v a d

5 September 2003

[©] Copyright by the Graduate School, Chiang Mai University

ACKNOWLEDGEMENT

I wish to express my sincere gratitude and deepest appreciation to Assoc. Prof. Rujapa Nimsung, thesis advisor, for her excellent guidance, continuous discussion, valuable advice and vast knowledge. Without her support and encouragement, this thesis could not be accomplished.

I would like to offer my special thanks to my co-advisor, Asst. Prof. Dr. Werawan Ruangyuttikarn for her suggestions and valuable advice.

My great appreciation is also expressed to Asst. Prof. Dr. Audomsark Haesungcharem, Department of Clinical Chemistry, Faculty of Associated Medical Sciences, Chiang Mai University and Prof. Taweesook Kanluan, Department of Clinical Chemistry, Faculty of Medical Technology, Mahidol University, for their advice and prove reading of my thesis articles.

I also wish to extend my appreciation to doctor Somsak Vongvivach, Department of Forensic Medicine, Faculty of Medicine, for his sincerely helps in collected human liver and bile from autopsy.

A very special thank you goes to Miss Pattaravadee Pongraveevongsa, Department of Forensic Medicine, Faculty of Medicine and all of members at Department of Clinical Chemistry, Faculty of Associated Medical Sciences, Chiang Mai University, for their excellent teaching and training. Many thanks are also extended to all of my friends for their help and warm friendship.

Finally, I would like to express my great gratitude to my parents and my relatives for their love, support and encouragement throughout this study.

adansumpnenaelseolmu Copyright by Chiang Majutharak Yimsabai sity All rights reserved