

**EFFECT OF *CIS*-3-(2',4',5'-TRIMETHOXYPHENYL)-4-{(E) 2''',4''',5'''-
TRIMETHOXYLSTYRYL}-CYCLOHEX-1-ENE ON LPS-INDUCED
HYALURONAN SYNTHASE GENE EXPRESSION AND
HYALURONAN SYNTHESIS IN A HUMAN SYNOVIAL
FIBROBLAST SW982 CELL LINE**

SIRIPRAPA KHUAJAN

MASTER OF SCIENCE

IN BIOCHEMISTRY

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

Copyright© by Chiang Mai University

All rights reserved

THE GRADUATE SCHOOL

CHIANG MAI UNIVERSITY

JANUARY 2010

**EFFECT OF *CIS*-3-(2',4',5'-TRIMETHOXYPHENYL)-4-{(E) 2''',4''',5'''-
TRIMETHOXYLSTYRYL}-CYCLOHEX-1-ENE ON LPS-INDUCED
HYALURONAN SYNTHASE GENE EXPRESSION AND
HYALURONAN SYNTHESIS IN A HUMAN SYNOVIAL
FIBROBLAST SW982 CELL LINE**

SIRIPRAPA KHUAJAN

**A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS**

**FOR THE DEGREE OF
MASTER OF SCIENCE**

IN BIOCHEMISTRY

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

Copyright© by Chiang Mai University

All rights reserved

THE GRADUATE SCHOOL

CHIANG MAI UNIVERSITY

JANUARY 2010

EFFECT OF *CIS*-3-(2',4',5'-TRIMETHOXYPHENYL)-4-{(E) 2''',4''',5'''-
TRIMETHOXYLSTYRYL}-CYCLOHEX-1-ENE ON LPS-INDUCED
HYALURONAN SYNTHASE GENE EXPRESSION AND
HYALURONAN SYNTHESIS IN A HUMAN SYNOVIAL
FIBROBLAST SW982 CELL LINE

SIRIPRAPA KHUAJAN

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

EXAMINING COMMITTEE

Nantarit Chokethaworn

.....CHAIRPERSON

Asst. Prof. Dr. Nantarit Chokethaworn

Siriwan

.....MEMBER

Assoc. Prof. Dr. Siriwan Ong-chai

Kongtawelert, P.

.....MEMBER

Assoc. Prof. Dr. Prachya Kongtawelert

Teera Chewonarin

.....MEMBER

Asst. Prof. Dr. Teera Chewonarin

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

Copyright © by Chiang Mai University

All rights reserved

27 January 2010

© Copyright by Chiang Mai University

ACKNOWLEDGEMENTS

I would like to express the graduate and deepest appreciation to Assoc. Prof. Dr. Siriwan Ong-chai, thesis advisor, for her precious guidance, unforgettable support, excellent encouragement and contribution are worthy of grateful acknowledge throughout study. I wish to thank Prof. Dr. Vichai Reutrakul for purifying and isolating *cis*-3-(2',4',5'-trimethoxyphenyl)-4-{(E)-2''',4''',5'''-trimethoxystyryl}-cyclohex-1-ene. (compound C) from *Zingiber cassumunar* Roxb.

I would like to give special thanks Assoc. Prof. Dr. Prachya Kongtawelert and Dr. Peraphan Pothacharoen for his valuable guidance, continuous discussion and encouragement throughout my study. My heartfelt thanks go to Ms. Rujilek Chaiwongsa, Ms. Nawarat Viriyakhasek, and all my friends for their excellent training and expertise helped me so much to make this work possible.

I also would like to acknowledge the Center for Innovation of Chemistry (PERCH)-CIC for the financially support this research. Many thanks and express my appreciation to all the facilities in the Department of Biochemistry, Faculty of Medicine, Chiang Mai University and Thailand Excellence Center for Tissue Engineering for their kindness and friendship.

Finally, I would like to thank my parents and family members for their love and the great support throughout my educational life.

Siriprapa Khuajan