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LIST OF ABBREVIATIONS

%	Percentage
°C	Degree Celsius
µg	Microgram
µl	Microliter
ACV	Acyclovir
ANOVA	Analysis of variance
bp	Base pair
BSA	Bovine serum albumin
CD ₅₀	Cytotoxic dose, 50%
cm	Centimeter
CMC	Carboxymethyl cellulose
CO ₂	Carbon dioxide
CPE	Cytopathic effect
DE	Dimensional electrophoresis
DMSO	Dimethyl sulfoxide
DNA	Deoxyribonucleic acid
dsDNA	Double strand deoxyribonucleic acid
ED ₅₀	Effective dose, 50%
EDTA	Ethylenediamine tetra-acetic acid
EtOH	Ethanol
g	Gram
GC	Gas chromatography
h	Hour
HPLC	High performance liquid chromatography
HS	Heparan sulfate
HSV	Herpes simplex virus
HSV-1	Herpes simplex virus type 1

LIST OF ABBREVIATIONS (continued)

HSV-2	Herpes simplex virus type 2
kDa	Kilodalton
kg	Kilogram
L	Liter
LAT	Latency-associated transcripts
MEM	Minimum essential medium
mg	Milligram
Min	Minute
ml	Milliliter
MOI	Multiplicity of infection
mRNA	Messenger ribonucleic acid
MS	Mass spectrometry
MW	Molecular weight
nm	Nanometer
No.	Number
PBS	Phosphate buffered saline
PFU/ml	Plaque forming unit per milliliter
RCB	Randomized complete blocks
R _f	Retardation factor
RNA	Ribonucleic acid
rpm	Revolution per minute
SD	Standard deviation
SDS-PAGE	Sodium dodecyl sulfate polyacrylamide gel electrophoresis
TI	Therapeutic index
TLC	Thin layer chromatography
TNF	Tumor necrosis factor

LIST OF ABBREVIATIONS (continued)

U _L	Unique long
U _S	Unique short
UV	Ultra violet radiation
V	Voltage
vhs	Virion host shutoff



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ข้อความแห่งการริเริ่ม

- 1) วิทยานิพนธ์นี้ได้นำเสนอประสิทธิภาพของสารสกัดสาหร่ายเตาในการยับยั้งไวรัสก่อโรคเริมชนิดที่ 1 และ 2 โดยสารสกัดสาหร่ายเตาสามารถยับยั้งอนุภาคไวรัสโดยตรง กระบวนการเข้าสู่เซลล์ การเพิ่มจำนวน กระบวนการสร้างดีเอ็นเอ และ โปรตีนของไวรัส
- 2) การพัฒนาผลิตภัณฑ์เจลสาหร่ายเตาที่มีประสิทธิภาพในการยับยั้งไวรัสก่อโรคเริมชนิดที่ 1 ไวรัสก่อโรคเริมชนิดที่ 2 และไวรัสก่อโรคเริมชนิดที่ 1 ที่คือต่อยาอะไซโคลเวียร์ ดังนั้นจึงสามารถนำผลิตภัณฑ์เจลสาหร่ายเตามาใช้เพื่อการยับยั้งเชื้อไวรัสก่อโรคเริม

The logo of Chiang Mai University is a circular emblem. In the center is a stylized elephant facing left, with a decorative tusk-like element above its head. The elephant is surrounded by a circular border containing the Thai text 'มหาวิทยาลัยเชียงใหม่' at the top and 'CHIANG MAI UNIVERSITY 1964' at the bottom. There are also decorative floral motifs on either side of the elephant.

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STATEMENTS OF ORIGINALITY

- 1) In this thesis, the inhibitory efficiency of crude extract of *Spirogyra* spp. against herpes simplex virus type 1 and 2 were presented. *Spirogyra* spp. extract could inhibit viral particle, viral entry to the cell, viral DNA replication and viral protein synthesis.
- 2) Development of *Spirogyra* spp. gel product that has efficacy to inhibit herpes simplex virus type 1 and type 2, and acyclovir-resistant HSV-1 isolates. Therefore, the *Spirogyra* spp. gel product can be used for inhibition of herpes simplex virus.



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