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## LIST OF ABBREVIATIONS

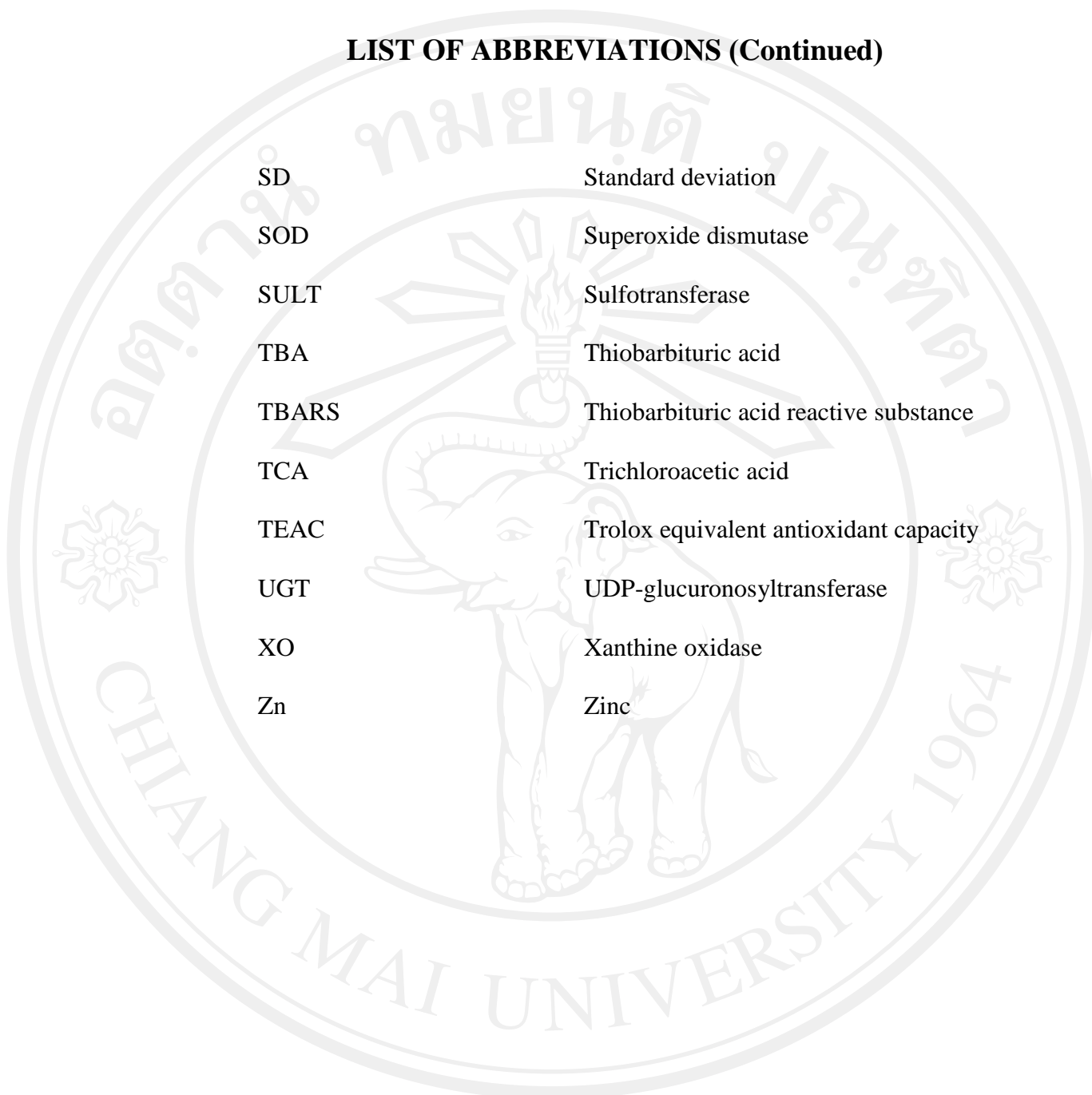
µg/pL	Micrograms/ pL
µl	Microliter
8-iso-PGE <sub>2α</sub>	Isoprostane
ABTS	2 - 2' azino – bis (3-ethylbenzothiazoline sulfonic acid)
CAT	Catalase enzymes
CYP	Cytochrome P450
DMSO	Dimethyl sulfoxide
DNA	Deoxyribonucleic acid
DPPH	2, 2-Diphenyl-1-picrylhydrazyl
EGCG	Epigallo-catechin gallate
g	Gram
g/kg BW	Gram/ kilogram body weight
GAE	Gallic acid equivalent
GCL	Glutamy-cystein ligase
GSH	Glutathione
GSHPx	Glutathione peroxidase
GSH-Px	Glutathione peroxidase
GS-SG	Oxidized glutathione
GST	Glutathione S-transferase
HO-1	Heme oxygenase-1



## LIST OF ABBREVIATIONS (Continued)

IC <sub>50</sub>	Inhibition Concentration at 50 %
LDL	Low-density lipoprotein
LSD	Least significant difference
M	Transition metals
MDA	Malondialdehyde
mg Gallic acid/mg dry weight	Milligram Gallic/ milligram dry weight
mg Trolox/mg dry weight	Milligram Trolox/ milligram dry weight
mg/kg BW	Milligram/ kilogram body weight
mg/ml	Milligram/ milliliters
ml	Milliliters
MTT	3-(4,5-dimethylthiazol-2-yl)-2,5 diphenyltetrasolium bromide
NADPH	Nicotinamide adenine dinucleotide phosphate
nm	Nanometre
NO	Nitric oxide
NQO1	NADPH-quinone oxidoreductase
PEITC	Phenethyl isothiocyanate
RNA	Ribonucleic acid
ROM	Reactive oxygen metabolites
ROS	Reactive oxygen species

## LIST OF ABBREVIATIONS (Continued)

The background of the page features a large, faint watermark of the Chiang Mai University seal. The seal is circular, with an elephant in the center holding a parasol. Above the elephant is a sunburst. The Thai text 'มหาวิทยาลัยเชียงใหม่' (Mahavithayalai Chiang Mai) is written in a circle around the elephant. Below the elephant, the English text 'CHIANG MAI UNIVERSITY 1964' is written in a circle. There are also decorative floral motifs on the sides.

SD	Standard deviation
SOD	Superoxide dismutase
SULT	Sulfotransferase
TBA	Thiobarbituric acid
TBARS	Thiobarbituric acid reactive substance
TCA	Trichloroacetic acid
TEAC	Trolox equivalent antioxidant capacity
UGT	UDP-glucuronosyltransferase
XO	Xanthine oxidase
Zn	Zinc

## LIST OF SYMBOLS

%	Percent sign
$^{\circ}\text{OH}$	Hydroxyl radical
$^1\text{O}_2$	Singlet oxygen
$\text{C}_{15}\text{H}_{10}\text{O}_5$	Apigenin
$\text{C}_{20}\text{H}_{40}\text{O}$	Phytol
$\text{C}_{29}\text{H}_{48}\text{O}$	Stigmasterol
$\text{C}_{29}\text{H}_{50}\text{O}$	$\beta$ -Sitosterol
$\text{CO}_2$	Carbon Dioxide
$\text{FeCl}_3$	Iron trichloride, Iron(III) chloride
$\text{H}_2\text{O}_2$	Hydrogen peroxide
$\text{H}_2\text{SO}_4$	Sulfuric acid
$\text{HCl}$	Hydrogen chloride
$\text{NaOH}$	Sodium hydroxide
$\text{O}_{-2}^{\circ}$	Superoxide
$\beta$	Beta
$\gamma$	Gamma

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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## ข้อความแห่งการริเริ่ม

1. วิทยานิพนธ์นี้ได้นำเสนอการตรวจสอบศักยภาพการยับยั้งการแบ่งตัวเพิ่มจำนวนเซลล์มะเร็งลำไส้ใหญ่ ชนิด HCT 15, SW48 และ SW480 จากสารสกัดใบมะรุ้มและใบว่านพญาวาน
2. เพื่อหาความสัมพันธ์ระหว่างประสิทธิภาพของสารต้านอนุมูลอิสระกับประสิทธิภาพการยับยั้งมะเร็งลำไส้ใหญ่จากสารสกัดใบมะรุ้มและใบว่านพญาวาน
3. เพื่อเป็นการตรวจสอบความปลอดภัยในเบื้องต้นของสารสกัดจากใบมะรุ้มและว่านพญาวานที่มีการบริโภคอย่างแพร่หลายจากอำเภอเมือง จังหวัดเชียงใหม่ และเป็นการเพิ่มมูลค่าพืชสมุนไพรหากมีการนำไปพัฒนาเป็นผลิตภัณฑ์เสริมสุขภาพต่อไป

## STATEMENT OF ORIGINALITY

1. This thesis examines the potential of *M. oleifera* and *P. palatiferum* extracts on the inhibition of cell division of colon cancer cell HTC15, SW48 and SW480

2. To determine the correlation between the efficiency of antioxidants and the efficiency of inhibition of colon cancer cell division of *M. oleifera* and *P. palatiferum* extracts.

3. To test the primary safety of *M. oleifera* and *P. palatiferum* extracts which are widely consumed in many districts of Chiang Mai province and to add value of the plants if they are developed to be health products.