

การเป็นพืชต่อเซลล์มะเร็งเต้านมของกระชายดำ *Kaempferia parviflora*

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CYTOTOXICITY OF *Kaempferia parviflora* AGAINST
BREAST CANCER CELL LINES

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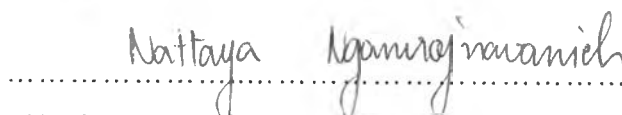
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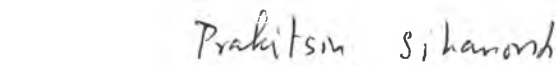
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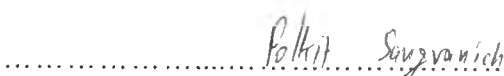
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ศุภนา เดโชดมพันธ์ : การเป็นพิษต่อเซลล์มะเร็งเต้านมของกระชายดำ *Kaempferia parviflora* (CYTOTOXICITY OF *Kaempferia parviflora* AGAINST BREAST CANCER CELL LINES) อ. ที่ปรึกษา : ผศ. ดร. นาดยา งามโรจนวิชัย, อ. ที่ปรึกษาร่วม : รศ. ดร. อมรเพชรสม ; 130 หน้า. ISBN 974-17-0263-9

ได้แยกสารประกอบฟลาโวนอยด์ 9 ชนิด, เคอร์คูมิน 1 ชนิด และน้ำตาล 1 ชนิด จากกระชายดำ ได้แก่ 3,5,7-trimethoxyflavone (1), 5,7-dimethoxyflavone (2), 5,7,4'-trimethoxyflavone (3), 4'-hydroxy-5,7-dimethoxyflavone (4), dicinnamoylmethane (5), 5-hydroxy-3,7- dimethoxyflavone (6), 5-hydroxy-7-methoxyflavone (7), 5-hydroxy-3,7,4'- trimethoxyflavone (8), 5-hydroxy-7,4'-dimethoxyflavone (9), 5,7-dimethoxyflavanone (10) and sucrose (11) นำสารที่ได้มาศึกษาฤทธิ์ยับยั้งการเจริญของเซลล์มะเร็งเต้านม BT474, ลำไส้ SW620, กระเพาะ KATO-3, ตับ HEP-G2, และปอด CHAGO โดยวิธี MTT และฤทธิ์ต่อต้านอนุมูลอิสระโดยวิธี DPPH พบว่าสาร 2 และ 10 มีฤทธิ์ยับยั้งต่อเซลล์มะเร็งกระเพาะ, สาร 3 มีฤทธิ์ยับยั้งต่อเซลล์มะเร็งตับ, กระเพาะ และปอด, สาร 6 มีฤทธิ์ยับยั้งต่อเซลล์มะเร็งกระเพาะ และตับ, สาร 7 มีฤทธิ์ยับยั้งต่อเซลล์มะเร็งกระเพาะ, ลำไส้ และปอด, สาร 9 มีฤทธิ์ยับยั้งต่อเซลล์มะเร็งกระเพาะ และลำไส้ และผลการศึกษาฤทธิ์ต่อต้านอนุมูลอิสระพบว่า สาร 5 มีฤทธิ์ต่อต้านอนุมูลอิสระเล็กน้อย

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SUPANA DEACHODOMPHAN : CYTOTOXICITY OF *Kaempferia parviflora*
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Nine flavonoids, one curcumin and one sugar, namely, 3, 5, 7 - trimethoxyflavone (1), 5, 7 - dimethoxyflavone (2), 5, 7, 4' - trimethoxyflavone (3), 4' - hydroxy - 5, 7 - dimethoxyflavone (4), dicinnamoylmethane (5), 5 - hydroxy - 3, 7 - dimethoxyflavone (6), 5 - hydroxy - 7 - methoxyflavone (7), 5 - hydroxy - 3, 7, 4' - trimethoxyflavone (8), 5 - hydroxy - 7, 4' - dimethoxyflavone (9), 5, 7 - dimethoxyflavanone (10) and sucrose (11) were isolated from black rhizome of *Kaempferia parviflora*. Each compound was tested for cytotoxicity against various human tumor cell lines BT474 (breast), SW620 (colon), KATO - 3 (gastic), CHAGO (lung), HEP - G2 (hepatoma) and HS27 (fibroblast) by MTT method and tested for antioxidant activity by DPPH method. It was found that compound 2 and 10 showed cytotoxicity against Kato3 cell lines, compound 3 showed cytotoxicity against Hep-G2, Kato-3, Chago cell lines, compound 6 showed cytotoxicity against Hep-G2 and Kato-3 cell lines, compound 7 showed cytotoxicity against Chago, Kato-3 and SW620 cell lines, compound 9 showed cytotoxicity against Kato-3 and SW620 cell lines. Compound 5 has weak antioxidant activity.

Program..... Biotechnology..... Student's signature..... *Supana Deachodomphan*
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LIST OF ABBREVIATIONS

%	percent
°c	degree Celsius
λ_{MAX}	the wavelength at maximum absorption
δ	Chemical shift
μg	microgram (s)
μl	microlitre (s)
br	broad
cm^{-1}	unit of wave number
cont.	continue
CDCl_3	chloroform-d
d	doublet (NMR)
dd	doublet doublet (NMR)
DEPT	Distortionless Enhancement by Polarization Transfer
DMSO	dimethylsulfoxide
Fig.	Figure
g	gram (s)
Hz	Hertz
IR	infrared
J	coupling constant (NMR)
Kg	kilogram
m	medium (for IR)
m	multipet (for NMR)
M^+	molecular ion
m.p.	melting point
M.W.	molecular weight
m/z	mass to charge ratio
mg	milligram
ml	millilitre
ppm	part per million
q	quartet (for NMR)
R_f	rate of flow in chromatography

s	singlet (for NMR)
s	strong (for IR)
t	triplet (for NMR)
TLC	Thin Layer Chromatography
w	weak (for IR)
wt	weight
wt. by wt.	weight by weight