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ประโยชน์ที่ได้รับ

1. ได้ภาพตัวอย่างของเห็ดป่าชนิดต่างๆ ที่จัดรวบรวมไว้ใช้เป็นสื่อในการในการเรียน การสอนของภาควิชาฯ
2. ได้นำเสนอข้อมูลการวิจัยในที่ประชุมระดับนานาชาติ โดยการนำเสนอแบบโปสเตอร์ poster presentation

หน่วยงานที่สามารถนำผลการวิจัยไปใช้ประโยชน์ ได้แก่ หน่วยวิจัยเกี่ยวกับเห็ด และmicrobial bioactive compounds ในมหาวิทยาลัยต่าง ๆ และหน่วยงานอื่นๆ ที่เกี่ยวข้องกับทางด้านการแพทย์

ภาคผนวก

1. ได้นำเสนอข้อมูลการวิจัยในที่ประชุมระดับนานาชาติ โดยการนำเสนอแบบโปสเตอร์ poster presentation คือ The 3rd International Conferences on Natural Products for Health and Beauty. March 16-18, 2011 at The Emerald Hotel ,Bangkok Thailand.

February 25, 2011

RE: Poster Presentation

Dear Urat Pimolsri Lee:

You were previously notified that your abstract had been accepted for poster presentation at the Third International Conference on Natural Products for Health and Beauty (NATPRO3), March 16-18, 2011, in Bangkok, Thailand.

The schedule for your presentation is as follows:

Abstract Title & Author (s):

Diversity of Wild Mushrooms and their Anticandida Activity from Phu Hin Rong Kla National Park in Phitsanulok

Urat Pimolsri Lee, Srisuda Kawayasakul, Uraporn Sa-ardsud

Session Title: PA: Biological Activities and Mechanisms of Natural Products

Poster Number: PA-15

Poster Set up: Wednesday, March 16, 2011; 8.00-8.45 AM

Poster Presentation:

Wednesday, March 16, 2011; 1.00-2.00 PM & Thursday, March 17, 2011; 1.00-2.00 PM

Location: Ploypilin Room

Please see the attached file for additional details regarding poster preparation and guidelines.

We look forward to seeing you at the conference.

Sincerely,

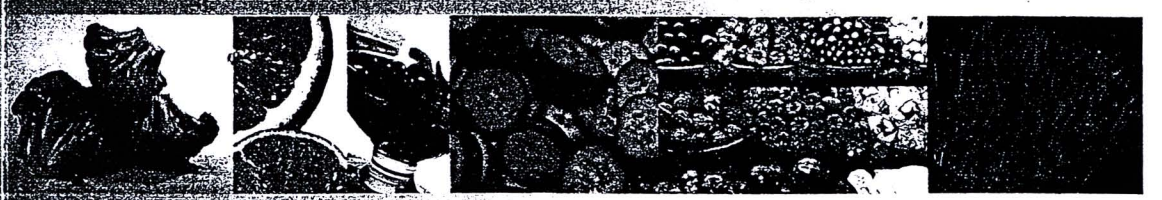
P. Sukplang

Patamaporn Sukplang, Ph.D.
Secretariat, Organizing Committee

NATPRO 3

Natural Products for Health & Beauty

"Through Sustainable Health"



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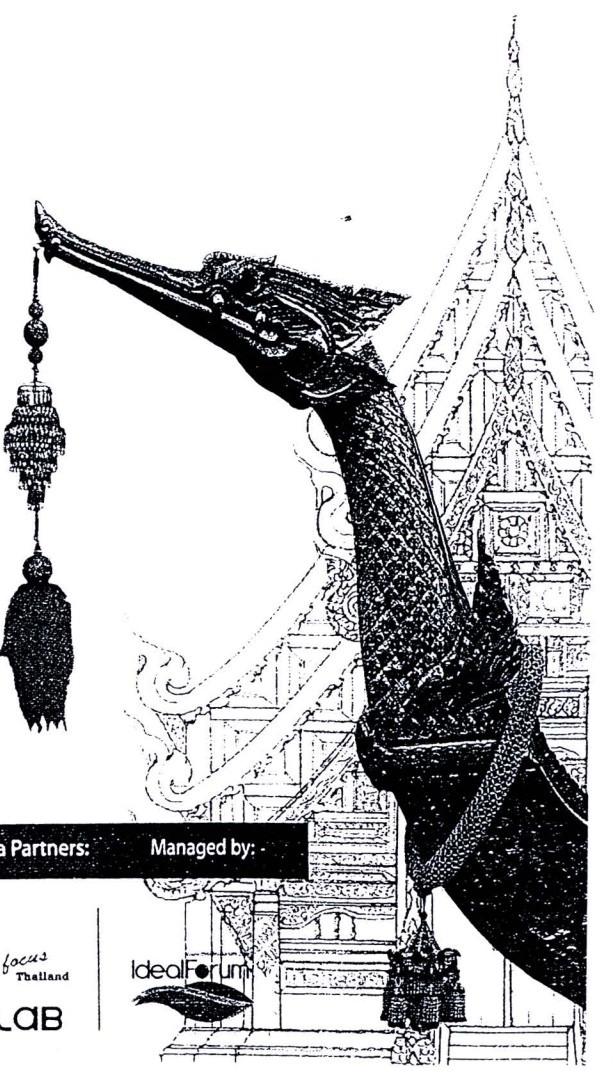
16-18 March 2011

Bangkok, Thailand



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PA-15 Diversity of Wild Mushrooms and Their Anticandida Activity from Phu Hin Rong Kla National Park in Phitsanulok

Urat Pimolsri Lee[1] , Srisuda Kawayasakul[1], Uraporn Sa-ardsud[2]

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[2]Department of Biology, Faculty of Science, Chiang Mai University, Chiang Mai 50200 Thailand

Background: Candida, (*Candida albicans*) is a fungal disease which has become increasingly significant threaten in Thailand because of the opportunistic behavior towards the altered and/or compromised conditions of its host. There has been much interest in the resources of bioactive compounds for treatment fungal diseases. There are a wide range of mushrooms which regularly produce antifungals in world-wide, especially in the Asia region. Therefore, this study sought for diversity of wild mushrooms which generally grow in nature and investigated their anticandida activity.

Methods: The samples of wild mushrooms were randomly collected from Phu Hin Rong Kla National Park in the Phitsanulok province during 2010. Each sample was morphologically characterized both macroscopically and microscopically to identify the genus. They were then dried at 45°C until brittle (3-7 days). The dried samples were ground with a motorized stone grinder and extracted with chloroform, ethyl acetate and methanol (25 g/L). The anticandida activity of extracts was determined by paper disc agar diffusion method using three species of *Candida including Candida albicans, C. tropicalis* and *C. krusei.* The diameter of the inhibition zone was measured and minimal inhibitory concentration (MIC) was determined using broth tube dilution. The thin layer chromatographic method was used to separate into fractions with chloroform and methanol ratio (10:1) as a mobile phase with extracted mushroom which showed the highest diameter of inhibition zone. Then the active fraction was calculated and checked its activity by bioautography method with *Candida* spp.

Results: The 66 wild mushroom samples were found and identified to 41 genus into 18 families. The anticandida activity of extracted mushroom samples with ethyl acetate were generally given diameter of the inhibition zone higher than the methanolic and chloroform extracts . The methanolic extract of *Polyporus* PHK 24 provided the highest of diameter of clear zone 15.0 mm. The minimal inhibitory concentration was 6.25 mg/ml. The retention factor (Rf) of active fraction was 0.56 which could inhibit the growth of three tested organism.

Conclusion: Thus wild mushrooms vary markedly in their potency of anticandida activity. Some of these may be amenable to commercial exploration for development to medical benefits.

Keywords: *Anticandida activity, Wild mushrooms, Phu Hin Rong Kla National Park*

Diversity of wild mushrooms and their anticandida activity from Phu Hin Rong Kla in Phitsanulok, Thailand

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Introduction

Candida, (*Candida albicans*) is a fungal disease which has become increasingly significant threaten in Thailand because of the opportunistic behavior towards the altered and/or compromised conditions of its host. There has been much interest in the resources of bioactive compounds for treatment fungal diseases. There are a wide range of mushrooms which regularly produce antifungals in world-wide, especially in the Asia region. Therefore, this study sought for diversity of wild mushrooms which generally grow in nature and investigated their anticandida activity .

Materials and Methods

Mushroom samples
(Randomly sampling)

↓

Extraction with Chloroform,
Ethyl acetate and Methanol

↓

Crude extract

↓

Anticandida activity, MIC
and Bioautography

↓

Φ Inhibition zone, MIC value
Active fraction (R_f value)

The samples of wild mushrooms were randomly collected from Phu Hin Rong Kla National Park in the Phitsanulok province during 2010. Each sample was morphologically characterized both macroscopically and microscopically to identify the genus. They were then dried at 45°C until brittle (3-7 days).

The dried samples were ground with a motorized stone grinder and extracted with chloroform, ethyl acetate and methanol (25 g/L).

The anticandida activity of extracts was determined by paper disc agar diffusion method using three species of *Candida* including *Candida albicans*, *C. tropicalis* and *C. krusei*.

The diameter of the inhibition zone was measured and minimal inhibitory concentration (MIC) was determined using broth tube dilution. The thin layer chromatographic method was used to separate into fractions with chloroform and methanol ratio (10:1) as a mobile phase with extracted mushroom which showed the highest diameter of inhibition zone.

Then the active fraction was calculated and checked its activity by bioautography method with *Candida* spp. as diagram (Left).

Results and Discussion

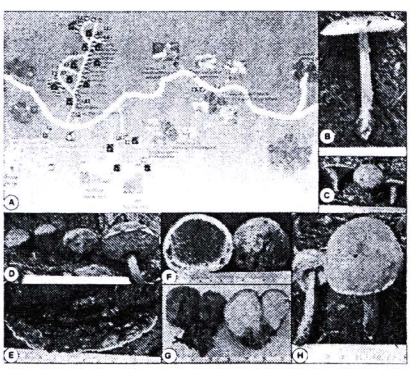

Fig.1 Showing the area where collected of mushroom samples (A) and some mushroom samples were collected at the selected sites (B-H)

Some of wild mushrooms were randomly collected from the area in Phu Hin Rong Kla National Park in the Phitsanulok province during 2010 (Fig.1A). The 66 wild mushroom samples were found and identified to 41 genus into 18 families by morphologically characterized both macroscopically and microscopically.

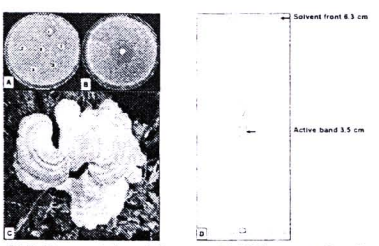

Fig.2 Representation of diameter of inhibition zone of methanolic (A1), chloroform (A2) and ethyl acetate (A3) extract and nystatin as standard positive control (B).The and basidiocarp of *Polypore* sp.PHK-24 (C) and TLC chromatogram of active fraction.

Some genera of wild mushrooms were found as *Amanita* sp., *Lactarius* sp. *Boletus* sp., *Scleroderma* spp. and *Fomitopsis* sp. (Fig.1 B-H). The anticandida activity of extracted mushroom samples with methanol were generally given diameter of the inhibition zone higher than the chloroform and ethyl acetate solvents. The methanolic extract of *Polyporus* sp. PHK-24 provided the highest of diameter of clear zone 15.0 mm (∅ paper disc = 6 mm) against *C. albicans* while the chloroform and ethyl acetate extract could not inhibit the growth of the test organisms (Fig.2 A1). The minimal inhibitory concentration was 6.25 mg/ml using broth tube dilution method. The retention factor (R_f) of active fraction on Thin layer chromatogram was 0.56 which could inhibit the growth of three tested organism (Fig.2D).

Summary

Thus wild mushrooms vary markedly in their potency of anticandida activity. Some of these may be amenable to commercial exploration for development to medical benefits.

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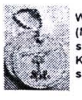
Acknowledgements



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