

Title : Extraction methods and bioactivities of *Euglena* extract for cosmeceutical development

Author : Ms. Napasorn Khuntasorn

Student ID : 640510240

Major : Microbiology

Advisor : Assistant Professor Dr. Jeeraporn Pekkoh

Type of presentation\* (choose 1) :  Oral Presentation (เฉพาะ ตัวแทนศ.ที่สาขาเลือกให้นำเสนอแบบบรรยาย)  
 Poster (กรณี นำเสนอผลงานปัญหาพิเศษ/การค้นคว้าอิสระ)  
 Cooperative Education (กรณี นำเสนอผลงานสหกิจศึกษา)

## ABSTRACT

*Euglena gracilis* is one of the microorganisms that has the ability to produce many interesting antioxidants such as beta-carotene, L-ascorbic acid, and  $\alpha$ -tocopherol. This research is intended to compare the efficiency of the extraction method. Between the microwave-assisted extraction method (MAE) and the ultrasound-assisted extraction (UAE) in the extraction with ethanol dissolver, study some biological effects of the extract obtained from both extraction methods. When studying biological properties by testing the antioxidant activity by 2,2-diphenyl-1-picrylhydrazyl (DPPH), 2,2'-bis-3-ethylbenzozoline-6-sulphonic acid (ABTS), potassium ferricyanide antioxidant power (RAPPF), and total phenolic content (TPC). It was found that the % yield of extract and paramylon obtained from both methods had similar amounts, which the extraction method found that the extract obtained from using microwave waves took less time than high-frequency sound wave 30 times. The extract from the microwave-assisted extraction method (MAE) was tested and exhibited better efficiency than the ultrasound-assisted extraction (UAE) and was found in scavenging activity of DPPH radical with in  $10.97 \pm 0.90$  mg GAE/g extract and high amounts of phenolic compounds in total phenolic content assay with in  $6.43 \pm 1.00$  mg GAE/g extract. The extract from the ultrasound-assisted extraction (UAE) was tested, by exhibited a higher efficiency in scavenging activity of the ABTS radical than the microwave-assisted extraction method (MAE) with in  $12.15 \pm 2.81$  mg TEAC/g extract. Moreover, the extract was found to include antibacterial activity bacteria (*Staphylococcus aureus* and *Escherichia coli*) that were determined by paper disc diffusion and the minimum bactericidal concentration (MBC). The result revealed that *Euglena gracilis* extract can act against only *Staphylococcus aureus*, the minimum bactericidal concentration (MBC) is at a concentration of 25 and 1.5625 mg/ml, respectively. The statistical analysis is in process.

\*Type of presentation must be matched with an option you choosing on student upload system.

\*\*The abstract can be more than one page and must be approved by project advisor before upload.

*\*Type of presentation must be matched with an option you choosing on student upload system.*  
*\*\*The abstract can be more than one page and must be approved by project advisor before upload.*