Title : Inhibition of herpes simplex virus type 2 by *Carissa carandas* Linn. fruits extracts

Author(s) : **1.** Nattida Phairat **Student ID :** 650510224

Major : Microbiology

Advisor(s) : **1.** Associate Professor Dr. Yingmanee Tragoolpua

Type of presentation* ***(choose 1)*** **:**

- ☐ **Oral Presentation** (เฉพาะ ตัวแทนนศ.ที่สาขาเลือกให้นำเสนอแบบบรรยาย)
- ☑ **Poster** (กรณี นำเสนอผลงานปัญหาพิเศษ/การค้นคว้าอิสระ)
- ☐ **Cooperative Education** (กรณี นำเสนอผลงานสหกิจศึกษา)

ABSTRACT

Herpes simplex virus type 2 (HSV-2) is a major etiological agent of genital herpes, a sexually transmitted infection with global prevalence. Currently, antiviral drugs such as acyclovir are widely used for treatment of HSV infection. However, using these drugs have several limitations, including the emergence of drug-resistant strains, the high cost of long-term therapy, and the inability to completely eradicate latent viruses. These challenges have led to increase the interest in natural extracts as alternative therapeutic agents for the inhibition of HSV-2. This study aimed to evaluate the anti-HSV-2 activity of extracts derived from the fruits of *Carissa carandas* L. Cytotoxicities of the *C. carandas* fruit extracts were assessed on Vero cells using MTT assay. Among the tested extracts, the 95% ethanolic extract of *C. carandas* unripe fruit exhibited the lowest cytotoxicity, with a 50% cytotoxic concentration (CD_{50}) of 2.00 ± 0.25 mg/mL. Antiviral activity of *C. carandas* fruit extract against HSV-2 was evaluated using a plaque reduction assay on Vero cells. The ethanolic extract of *C. carandas* ripe fruit extract at a concentration of 0.3125 mg/mL demonstrated the highest inhibitory effect after viral attachment to host cells, with a viral inhibition rate of 96.47 ± 1.97%. Total phenolic content (TPC) analysis revealed that the ethanolic extract of *C. carandas* ripe fruit extract contained the highest phenolic level (8.00 ± 0.58 mg GAE/g extract), which was significantly higher than that of the aqueous extracts. In contrast, antioxidant activity assessed by DPPH and ABTS assays showed that the aqueous extract of *C. carandas* ripe fruit extract exhibited the strongest radical scavenging activity, with values of 2.12 ± 0.34 mg GAE/g extract and 29.18 ± 2.21 mg Trolox/g extract, respectively. In conclusion, *C. carandas* fruit extracts, particularly the ethanolic extract of ripe fruit,

**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.*

demonstrated potent inhibitory activity against HSV-2 after viral attachment to host cells. The antiviral activity appears to correlate with phenolic content and antioxidant capacity, supporting the potential development of *C. carandas* extracts as natural antiviral agent against HSV-2.

Keywords: Antioxidant activity; Antiviral activity; *Carissa carandas* L.; Herpes simplex virus type 2 (HSV-2); Phenolic content

**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.*

Title name guide.

ADVISOR title name / แปลไทย	
Professor Dr.	ศาสตราจารย์ ดร.
Professor	ศาสตราจารย์
Associate Professor Dr.	รองศาสตราจารย์ ดร.
Associate Professor	รองศาสตราจารย์
Assistant Professor Dr.	ผู้ช่วยศาสตราจารย์ ดร.
Assistant Professor	ผู้ช่วยศาสตราจารย์
Dr.	ดร.
Lecturer	อาจารย์
Mrs.	นาง
Ms.	นางสาว
Mr.	นาย

Major name guide.

SCIENCE MAJOR name / แปล	
Biology	ชีววิทยา
Microbiology	จุลชีววิทยา
Zoology	สัตววิทยา
Biochemistry and Biochemical Technology *or* Biochemistry and Biochemical Innovation	ชีวเคมีและชีวเคมีเทคโนโลยี *หรือ* ชีวเคมีและชีวเคมีนวัตกรรม
Chemistry	เคมี
Industrial Chemistry	เคมีอุตสาหกรรม
Materials Science	วัสดุศาสตร์
Physics	ฟิสิกส์
Computer Science	วิทยาการคอมพิวเตอร์
Data Science	วิทยาการข้อมูล
Mathematics	คณิตศาสตร์
Statistics	สถิติ
Gemology	อัญมณีวิทยา

**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.*

Geology	ธรณีวิทยา
Environmental Science	วิทยาศาสตร์สิ่งแวดล้อม

**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.*