



IIUM Research, Invention and Innovation Exhibition IRIIE 2011

Enhancing Quality Research and Innovation for Societal Development

▶ 9-10 February 2011

▶ Culture Activity Centre (CAC) and KAED Gallery, IIUM

EXHIBITION ENTRY FORM

Deadline for submission of entries : 15th December 2010

1. Provide title of research/invention/Innovation, all researcher(s)/Inventor(s)/Innovator(s) name and abstract (maximum 300 words).

<p style="text-align: center;">Potential bioactivities of α-mangostin from <i>Garcinia malaccensis</i> Hk.f</p> <p style="text-align: center;">Muhammad Taher¹, Deny Susanti², Farah Syahidah A. Zohri², Sauba Nakazibwe³, Solachuddin JA Ichwan⁴</p> <p style="text-align: center;">¹Department of Pharmaceutical Technology, Kulliyah of Pharmacy, ²Department of Biomedical Science, ³Department of Biotechnology, Kulliyah of Science, ³Department of Basic Medical Science, Kulliyah of Medicine, ⁴Kulliyah of Dentistry, International Islamic University Malaysia, Jalan Istana, Bandar Indera Mahkota, 25200 Kuantan, Pahang, Malaysia</p>
<p>Guttiferae family is well-known to have a wide range of phytochemical constituents and bioactivities. A phytochemical investigation of <i>Garcinia malaccensis</i> lead isolation of α-mangostin, β-mangostin and a triterpenoid. α-Mangostin, a xanthone has a lot of health benefits. Many studies have been reported to investigate the biological activities of α-mangostin. The present study was carried out to evaluate the antimicrobial, antioxidant and anticancer activities of α-mangostin. Its structural determination was done based on its spectroscopic analysis. α-Mangostin was tested for antimicrobial sensitivity via disc diffusion method against 4 bacteria. Results showed that <i>S. aureus</i> culture formed a clear inhibition zone. The diameter of zone of inhibition observed was 8 mm and minimum inhibition concentration (MIC) value was 0.025 mg/mL and minimum bactericidal concentration (MBC) value was 0.1 mg/mL, indicated that α-mangostin is a bacteriostatic and bactericidal agent which correlates to presence of hydroxyl group in its structure. In antioxidant properties tests, dot-blot DPPH staining showed a positive antioxidant activity of α-mangostin. In FTC method, α-mangostin was proved to be a good lipid peroxidation inhibitor, whereas in DPPH free radical scavenging activity method, it has very weak scavenging effects on free radicals. In antiproliferative assay, α-mangostin exhibited activity against K562 and showed different</p>

activity against HSC3 and H1299 cell lines. Against K562, it exerted the value of IC_{50} 20 $\mu\text{g/mL}$. This study can form a foundation for future studies in investigating of biological activities of α -mangostin and developing the natural abundant in improving a healthy community.

Keywords: *Garcinia malaccensis*, α -mangostin, antibacterial, antioxidant, antiproliferative.

2.	Condition of exhibits: [Tick (✓) one]
	<input checked="" type="checkbox"/> Poster <input type="checkbox"/> Product and Poster
3.	Category of Entry [Tick (✓) the relevant class below]:
	<input type="checkbox"/> Islamic Revealed Knowledge and Heritage <input type="checkbox"/> Social Sciences and Humanities <input type="checkbox"/> Science, Engineering and Technology <input checked="" type="checkbox"/> Health and Allied Sciences
	I, the undersigned, agree to abide by the competition rules.
	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>Date: 17 Dec 2010</p> </div> <div style="text-align: center;">  <hr style="width: 30%; margin: 0 auto;"/> <p>Muhammad Taher</p> </div> </div>
4.	Approved by: Signature : Date: <hr style="width: 30%; margin: 0 auto;"/> Dean/Director Kulliyah/Institute/Centre Chop

NB: Hard copy of Entry form should submit to the respective Kulliyah/Institute/Centre. Soft copy also needs to be submitted online through IRIIE2011 website at <http://www.iium.edu.my/irie/11>.

The respective Kulliyah/Institute/Centre will compile all the entries and send to Organizing committee at Dean, Kulliyah of Architecture & Environmental Design, IIUM, P.O. Box 10, 50728 Kuala Lumpur, Malaysia.

