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**Characterization of Bioactive Metabolites from *Albizia lebbeck*,
Eurycoma longifolia, and Marine-derived Fungi**

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Kyaw Thet Oo

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**A thesis submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy (Environmental Toxicology)
Environmental Toxicology Program
Chulabhorn Royal Academy
Chulabhorn Graduate Institute
Thailand
Academic Year 2009**

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Characterization of Bioactive Metabolites from *Albizia lebbbeck*, *Eurycoma longifolia*, and Marine-derived Fungi

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Academic Year 2009**

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**Characterization of Bioactive Metabolites from *Albizia lebbeck*,
Eurycoma longifolia, and Marine-derived Fungi**

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Mr. Kyaw Thet Oo
Student

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Assoc. Prof. Dr. Panida Navasumrit
Thesis Advisor

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Dr. Montakarn Chittchang
Thesis Co-Advisor

3 lank lines (Single-spaced)

Assoc. Prof. Dr. Jutamaad Satayavivad
Program Director

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**Characterization of Bioactive Metabolites from *Albizia lebbeck*,
Eurycoma longifolia, and Marine-derived Fungi**

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for the degree of Doctor of Philosophy (Environmental Toxicology)

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on

June 30, 2008

Defense Examination Date

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Mr. Kyaw Thet Oo
Student

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Dr. Tawit Suriyo
Chairperson

3 blank lines (Single-spaced)

Assoc. Prof. Dr. Panida Navasumrit
Committee

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Dr. Montakarn Chittchang
Committee

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Times New Roman, 14 points, Bold → **Acknowledgements**

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I would like to express my indebtedness to the individuals who have been involved in this research. Many thanks to....

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I would also like to thank

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Kyaw Thet Oo

Defense Examination Date ← June 2008

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Thesis Title: Characterization of Bioactive Metabolites from *Albizia lebbeck*,
Eurycoma longifolia, and Marine-derived Fungi

By: Kyaw Thet Oo 012345678 Ph.D. (Environmental Toxicology)

Thesis Advisor: Assoc. Prof. Dr. Panida Navasumrit

Thesis Co-Advisor: (Input if you have Co-Advisor)

85 P. → (The number of page from Chapter 1 to Biography)

ABSTRACT ← *Times New Roman, 12 points, Bold*

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The results of this study suggested that.....

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for graduation requirement informed by Thesis Advisor)

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Program Environmental Toxicology. **Student's Signature**.....

Academic Year 2009 **Advisor's Signature**

รูปแบบการเขียนข้อมูลการตีพิมพ์เผยแพร่ผลงานวิจัยในเล่มวิทยานิพนธ์

ด้วยงานส่งเสริมวิชาการ ได้รับข้อเสนอแนะเพิ่มเติมจากคณะกรรมการวิชาการว่า ควรมีการใส่ชื่อผลงานวิจัยที่ได้รับการตีพิมพ์เผยแพร่ผ่านวารสารวิชาการระดับนานาชาติ (Publication) และผ่านรายงานสืบเนื่องจากการประชุมวิชาการ (Proceedings) ในหน้า Abstract ของเล่มวิทยานิพนธ์ต่อจากรายการ Keywords ดังนั้น งานส่งเสริมวิชาการ จึงขอแจ้งตัวอย่างการแสดงชื่อผลงานวิจัยในรูปแบบต่างๆ ดังนี้

รูปแบบสำหรับการแสดงชื่อผลงานวิจัยที่ได้รับการตีพิมพ์เผยแพร่ผ่านวารสารวิชาการระดับนานาชาติ (Publication)

Kullapanich C, Dubbs JM, Mongkolsuk S. Inactivation of the *Agrobacterium tumefaciens* ActSR system affects resistance to multiple stresses with increased H₂O₂ sensitivity due to reduced expression of *hemH*. Microbiology. 2019;165(10):1117-34.

รูปแบบสำหรับการตีพิมพ์เผยแพร่ผ่านรายงานสืบเนื่องจากการประชุมวิชาการ(Proceedings) ให้เรียงลำดับการแสดงข้อมูลดังนี้

Author. Title of paper. Proceedings of the Title of Conference; Year Month Date of Conference; Location of Conference, Place of publication. p. first-last page.

ตัวอย่าง

e.g. The Annual Conference of the Center of Excellence on Environmental Health and Toxicology (EHT)

Saensuk S, Sureram S, Ruchirawat S, Kittakoop P. ชื่อเรื่อง. Proceedings of the Annual Conference of the Center of Excellence on Environmental Health and Toxicology; 2019 Nov 2; Chulabhorn Research Institute, Bangkok. p. first-last page.

e.g. Thai Neuroscience Society Conference (TNS)

Chaopae W, Nopparat C, Govitrapong P. ชื่อเรื่อง. Proceedings of the 23rd Thai Neuroscience Society Conference; 2019 Dec 11; Chulabhorn Graduate Institute, Bangkok. p. first-last page.

e.g. Protein Society of Thailand (PST)

Dang CB, Ruangjaroon T, Saharat K, Svasti J, Paricharttanakul NM. ชื่อเรื่อง. Proceedings of the 14th International Symposium of the Protein Society of Thailand; 2019 Jul 22-23; Maruay Garden Hotel, Bangkok. p. first-last page.

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* Methodology can be divided into sub-topics, as appropriate for each research study.

** Results and Discussion can be combined into one chapter.

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1.2	Evaluation of	20
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	2.1	The comparisons of	18
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	2.2	Compounds isolated from <i>Eurycoma longifolia</i>	28
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Chulabhorn Graduate Institute

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K. Thet Oo

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Chapter 1

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Introduction

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↔ The molecular biology revolution and the advent of genomic and proteomic technologies are facilitating rapid advances in our understanding of the molecular details of cell and tissue function. These advances have the potential to transform toxicological and clinical practice, and are likely to lead to the supplementation or replacement of traditional biomarkers of cellular integrity, cell and tissue homeostasis, and.....

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1.2 Statement of the problem

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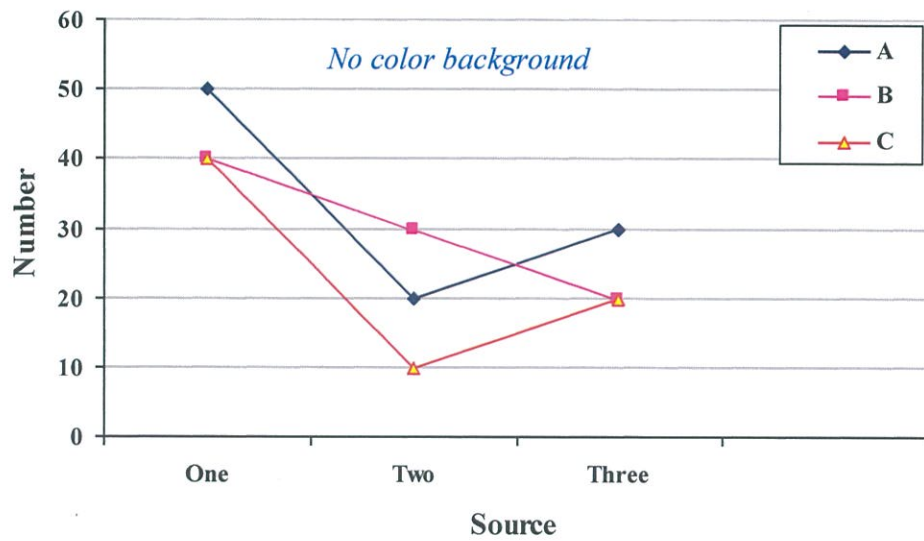


Figure 2.1 The comparisons of

* Tables and figures can be added between the texts or placed on a separate page (without texts)

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Table 1.1 The comparisons of ... (cont.)

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1. Vancouver Style
2. ACS Style
3. APA Style

[As detailed on next page;](#)

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References

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Example for article with 1 to 6 authors

1. Rahimi M, Sharifi-Zarchi A, Zarghami N, Geranpayeh L, Ebrahimi M, Alizadeh E. Down-regulation of miR-200c and up-regulation of miR-30c target both stemness and metastasis genes in breast cancer. *Cell Journal*. 2020;21(4):467-78.

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Example for article with more than 6 authors

2. Shi X, Shi C, Ye W, Wang L, Zhan Y, Song F, et al. Targeted fluorescence imaging and biological effects of peptide conjugated quantum dots on pancreatic cancer cells. *Journal of Nanoscience and Nanotechnology*. 2020;20(3):1351-7.

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Example for Books

3. Kaseb H, Gupta G. *Cancer, Lymphoblastic lymphoma*. 4th ed. Treasure Island (FL): StatPearls Publishing; 2019. 3001 p.

Example for Book Chapters

4. Belter B, Haase-Kohn C, Pietzsch J. Biomarkers in malignant melanoma: Recent trends and critical perspective. In: Ward WH, Farma JM, editors. *Cutaneous Melanoma: Etiology and Therapy*. 2nd ed. Brisbane (AU): Codon Publications; 2017. p. 501-99.

Example for Patents

5. Brager B, inventor; PERCEPTION PARTNERS Inc, assignee. Method for marketing rights to intellectual assets. United States patent US 2005/0222959 A1. 2005 Oct 6.

Example for Reports

6. Rowe IL, Carson NE. *Medical manpower in victoria: Report*. East Bentleigh (AU): Monash University Department of Social & Preventive Medicine; 1979. Report No.: 4.

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Example for Dissertations

7. Leelayuwapan H, Ruchirawat S. Rapid synthesis and biological studies of the lipomannan backbone glycans found on the surface of mycobacterium tuberculosis [Dissertation]. Bangkok: Chulabhorn Graduate Institute; 2017.

Example for Theses

8. Tachachartvanich P, Satayavivad J. The effects of chlorpyrifos on neuronal and non-neuronal cholinergic cancer cells [Master's thesis]. Bangkok: Chulabhorn Graduate Institute; 2012.

Example for Web Sites

9. Chulabhorn Graduate Institute. Academic Programs [internet]. 2016 [cited 2019 Sep 11]. Available from: <https://www.cgi.ac.th/programs>.

Example for Conference Paper

10. Chaopae W, Nopparat C, Govitrapong P. Melatonin attenuates β -amyloid production in SH-SY5Y cells under hyperglycemic condition. Proceedings of the 23rd Thai Neuroscience Society Conference; 2019 Dec 11; Chulabhorn Graduate Institute, Bangkok. p. 26-31.

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References

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1. Rahimi, M.; Sharifi-Zarchi, A.; Zarghami, N.; Geranpayeh, L.; Ebrahimi, M.; Alizadeh, E. Down-regulation of miR-200c and up-regulation of miR-30c target both stemness and metastasis genes in breast cancer. *Cell J.* **2020**, *21*, 467-478.

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2. Shi, X.; Shi, C.; Ye, W.; Wang, L.; Zhan, Y.; Song, F.; Liu, F.; Shi, Y. Targeted fluorescence imaging and biological effects of peptide conjugated quantum dots on pancreatic cancer cells. *J. Nanosci. Nanotechnol.* **2020**, *20*, 1351-1357.

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Example for Books

3. Kaseb, H.; Gupta, G. *Cancer, Lymphoblastic lymphoma*. 4th ed.; StatPearls Publishing: Treasure Island (FL), 2019; p 3001.

Example for Book Chapters

4. Belter, B.; Haase-Kohn, C.; Pietzsch, J. Biomarkers in malignant melanoma: Recent trends and critical perspective. In *Cutaneous Melanoma: Etiology and Therapy*, 2nd ed.; Ward, W. H.; Farma, J. M., Eds. Codon Publications: Brisbane (AU), 2017; pp 501-599.

Example for Patents

5. Brager, B. Method for marketing rights to intellectual assets. US Patent Application 2005/0222959 A1, Oct 6, 2005.

Example for Reports

6. Rowe, I. L.; Carson, N. E. *Medical manpower in victoria: Report*; 4; Monash University Department of Social & Preventive Medicine: East Bentleigh (AU), 1979; p 35.

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Example for Dissertations

7. Leelayuwapan, H.; Ruchirawat, S. Rapid synthesis and biological studies of the lipomannan backbone glycans found on the surface of mycobacterium tuberculosis. Dissertation, Chulabhorn Graduate Institute, Bangkok, 2017.

Example for Theses

8. Tachachartvanich, P.; Satayavivad, J. The effects of chlorpyrifos on neuronal and non-neuronal cholinergic cancer cells. Master's thesis, Chulabhorn Graduate Institute, Bangkok, 2012.

Example for Web Sites

9. Chulabhorn Graduate Institute. Academic Programs Home Page. <https://www.cgi.ac.th/programs> (accessed Sep 11, 2019).

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References

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Example for article with 1 to 6 authors

Rahimi, M., Sharifi-Zarchi, A., Zarghami, N., Geranpayeh, L., Ebrahimi, M., and Alizadeh, E. (2020). Down-regulation of miR-200c and up-regulation of miR-30c target both stemness and metastasis genes in breast cancer. *Cell Journal*, 21(4), 467-478. doi:10.22074/cellj.2020.6406

Example for article with more than 6 authors

Shi, X., Shi, C., Ye, W., Wang, L., Zhan, Y., Song, F., Liu, F., and Shi, Y. (2020). Targeted fluorescence imaging and biological effects of peptide conjugated quantum dots on pancreatic cancer cells. *Journal of Nanoscience and Nanotechnology*, 20(3), 1351-1357. doi:10.1166/jnn.2020.16949

Example for Books

Kaseb, H., and Gupta, G. (2019). *Cancer, Lymphoblastic lymphoma* (4th ed.). Treasure Island (FL): StatPearls Publishing.

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Example for Book Chapters

Belter, B., Haase-Kohn, C., and Pietzsch, J. (2017). Biomarkers in malignant melanoma: Recent trends and critical perspective. In W. H. Ward and J. M. Farma (Eds.), *Cutaneous Melanoma: Etiology and Therapy* (2nd ed., pp. 501-599). Brisbane (AU): Codon Publications.

Example for Patents

Heyer, G. E. (2004). *United States Patent No. US 8,775,322 B2*. Retrieved from <https://patentimages.storage.googleapis.com/66/e3/92/23ee4cb1b47d9a/US8775322.pdf>

Example for Reports

Rowe, I. L., and Carson, N. E. (1979). *Medical manpower in victoria: Report (No. 4)*. Retrieved from East Bentleigh (AU): <https://doi.org/10.5694/j.1326-5377.1979.tb112165.x>

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Example for Dissertations

Leelayuwapan, H., and Ruchirawat, S. (2017). *Rapid synthesis and biological studies of the lipomannan backbone glycans found on the surface of mycobacterium tuberculosis*. (Doctoral Dissertation), Chulabhorn Graduate Institute, Bangkok.

Example for Theses

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Example for Web Sites

Chulabhorn Graduate Institute. (2016). Academic Programs. Retrieved from <https://www.cgi.ac.th/programs>

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→ **Appendices**

Appendix A: The components of

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Appendix B: The ... (The next page)

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*Times New Roman, 14 points, Bold***Biography***1 blank line (Single-spaced)***Name****Mr. Kyaw Thet Oo****Date of Birth****March 3, 1985** *← Times New Roman, 12 points, Bold***Place of Birth**

....., Myanmar

Degree(s) obtained**B.Eng. (Chemical Engineering)****Mandalay Technological University, 2005****Position & Office**.....
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