



MAULIDIANI

Lecturer

Faculty of Science and Marine Environment
Universiti Malaysia Terengganu

 maulidiani@umt.edu.my

 +609 668 3376 / +6019 3668671

 +609 668 3193

QUALIFICATIONS

- Doctor of Philosophy (Metabolomics), Universiti Putra Malaysia
- Master of Science (Drug Discovery), Universiti Putra Malaysia
- Bachelor of Science (Agroindustrial Technology), IPB University

FIELD OF RESEARCH

- Natural Products Chemistry
- Metabolomics

RESEARCH INTEREST

My research interest is mainly on the application of metabolomics in natural products research. Through metabolomics approach, the knowledge on herbal and traditional medicines can be more understood. Metabolomics establish new and rational approach that potentially useful in standardization and quality control of herbal/food products by utilizing the combination of spectroscopic methods and multivariate data analysis. It also offer cutting-edge solutions in natural products research, particularly in herbal medicine development. To date, I have been involved in various projects related to herbal and food metabolomics. Besides, I am also interested to study metabolic alterations on *in vitro* cell metabolome due to the chemicals intervention.

RESEARCH PROJECTS

- Quality Control of Food and Herbal Medicines
- Marine Natural Products
- Authentication and Standardization of Honey and its Products

EXPERT LINKAGES

- *UNIVERSITI PUTRA MALAYSIA*
- *UNIVERSITI SAINS MALAYSIA*
- *IPB UNIVERSITY*
- *UCSI UNIVERSITY*
- *SHIMADZU MALAYSIA SDN BHD*

PROFFESIONAL MEMBERSHIP

- Royal Society of Chemistry
- Malaysian Natural Products Society

GRANTS

Project	:	Deciphering the chemical constituents in Marine Polychaete and its potential as anti-Inflammatory agents
Position	:	Project Leader
Grant Name	:	IPRG - UMT
Status	:	Active
Amount	:	RM 25000
Project	:	Rapid method development for the quantification of antioxidant compounds in honey based on ATR-FTIR chemometrics and ^1H NMR spectroscopy
Position	:	Project Leader
Grant Name	:	TAPE RG - UMT
Status	:	Active
Amount	:	RM 20000
Project	:	FREMEEBEE: French Malaysian initiative for intelligent beehive health monitoring
Position	:	Co-researcher
Grant Name	:	PHC - HIBISCUS
Status	:	Active
Amount	:	RM 66000

Project	:	Comparison of antioxidant compound in red and green <i>Christia vespertillionis</i> roots and leaves extracts by determine spectroscopy techniques
Position	:	Co-researcher
Grant Name	:	TAPE RG - UMT
Status	:	Active
Amount	:	RM 20000
Project	:	Encapsulated Malaysian Honey using Alginate Pectin for Convenience Consumption
Position	:	Co-researcher
Grant Name	:	PRGS - KPM
Status	:	Active
Amount	:	RM 161000
Project	:	Rapid method for the authentication and quality assessment of honey using ATR-FTIR chemometrics
Position	:	Project Leader
Grant Name	:	PIJI - UMT
Status	:	Completed
Amount	:	RM 4000
Project	:	Cytotoxicity and mechanisms of apoptotic cell death of Silver nanoparticle Co-applications with Microalgal crude extracts on MCF-7 cancer cells and <i>in vivo</i> mouse model
Position	:	Co-researcher
Grant Name	:	FRGS - KPM
Status	:	Active
Amount	:	RM 122000
Project	:	Determining the effects of <i>Neolamarckia cadamba</i> extracts on markers of endothelial dysfunction in human aortic endothelial cell (HAEC) and its relation to the polyphenol compositions
Position	:	Co-researcher
Grant Name	:	FRGS - KPM

Status : Active
Amount : RM 98000

Project : Identification of metabolic signatures associated to anti-inflammatory effects of date palm fruits using multi-platform based metabolomics
Position : Co-researcher
Grant : FRGS - KPM
Name
Status : Active
Amount : RM 83200

Project : Elucidating metabolomics profiles of breast cancer animal model treated with Sunitinib in association with ER, PR, and HER2 expressions.
Position : Co-researcher
Grant : Geran RUI-USM
Name
Status : Active
Amount : RM 60000

AWARDS

- Anugerah Penerbitan Makalah Jurnal Terindeks Tertinggi 2019, Faculty of Science and Marine Environment, Universiti Malaysia Terengganu.
- Bronze Medal Award (Title: Rapid method for the authentication and quality assessment of honey using ATR-FTIR chemometrics and $^1\text{H-NMR}$ analysis), Minggu Penyelidikan dan Inovasi 2020.
- Silver Medal Award (Title: Rapid detection tool for used cooking oil), Minggu Penyelidikan dan Inovasi 2020.
- Best Scientific Award (Title: Chemical profile and antioxidant activity of Kombucha tea), 2nd Seminar on Biosecurity and Sustainability 2019.
- Silver Medal Award (Title: DIO-OINMENT the miracle of Malaysian fish bait as aesthetic skin solutions), International Invention, Innovation & Technology 2019.
- Silver Medal Award (Title: DIO-OINMENT the miracle of Malaysian fish bait, *Diopatra claparedii* extract on wound healing), PENCIPTA 2019.

PUBLICATIONS

Journal Article

1. N.K.Z. Zolkeflee, N.A. Isamail, **M. Maulidiani**, N.A. Abdul Hamid, N. S. Ramli, A. Azlan, F. Abas. 2021. Metabolite variations and antioxidant activity of Muntingia calabura leaves in

- response to different drying methods and ethanol ratios elucidated by NMR-based metabolomics. *Phytochemical Analysis* 32(1), 69-83.
- 2. N.A. Che Soh, H.S. Rapi, N.S. Mohd Azam, R.K. Santhanam, S. Assaw, M.N. Haron, A.M. Ali, **M. Maulidiani**, I. Idris, W.I.W. Ismail. 2020. Acute wound healing potential of marine worm, *Diopatra claparedii* Grube, 1878 aqueous extract on Sprague Dawley rats. *Evidence-Based Complementary and Alternative Medicine* 2020, 6688084, 1-14.
 - 3. H.S. Rapi, N.A. Che Soh, N.S. Mohd Azam, **M. Maulidiani**, S. Assaw, M.N. Haron, A.M. Ali, I. Idris, W.I.W. Ismail. 2020. Effectiveness of aqueous extract of marine baitworm *Marphysa moribidii* Idris, Hutchings and Arshad, 2014 (Annelida, Polychaeta), on acute wound healing using Sprague Dawley rats. *Evidence-Based Complementary and Alternative Medicine* 2020, 1408926, 1-15.
 - 4. H.A. Hussein, **M. Maulidiani**, M.A. Abdullah. 2020. Microalgal metabolites as anti-cancer/anti-oxidant agents reduce cytotoxicity of elevated silver nanoparticle levels against non-cancerous vero cells. *Heliyon* 6, e05263.
 - 5. S.Z. Abd Ghafar, A. Median, **M. Maulidiani**, R. Rudiyanto, H.M. Ghazali, N.S. Ramli, F. Abas. 2020. Complementary NMR- and MS-based metabolomics approaches reveal the correlations of phytochemicals and biological activities in *Phyllanthus acidus* leaf extracts. *Food Research International* 136, 109312.
 - 6. A. Azizan, **M. Maulidiani**, R. Rudiyanto, K. Shaari I.S. Ismail N. Nagao, F. Abas. 2020. Mass spectrometry-based metabolomics combined with quantitative analysis of the microalgal diatom (*Chaetoceros calcitrans*). *Marine Drugs* 18(8), 403.
 - 7. K. Hellal, **M. Maulidiani**, I.S. Ismail, C.P. Tan, F. Abas. 2020. Antioxidant, α -glucosidase, and nitric oxide inhibitory activities of six Algerian traditional medicinal plant extracts and ^1H -NMR-based metabolomics study of the active extract. *Molecules* 25(5), 1247.
 - 8. **M. Maulidiani**, F. Abas, R. Rudiyanto, N.H. Abd Kadir, N.K.Z. Zolkeflee, N.H. Lajis. 2020. Analysis of urinary metabolic alteration in type 2 diabetic rats treated with metformin using the metabolomics of quantitative spectral deconvolution ^1H NMR spectroscopy. *Microchemical Journal* 153, 104513.
 - 9. N.A. Abdul-Hamid, N.H. Mustaffer, **M. Maulidiani**, A. Median, I.S. Ismail, C.L. Tham, K. Shadid, F. Abas. 2020. Quality evaluation of the physical properties, phytochemicals, biological activities and proximate analysis of nine Saudi date palm fruit varieties. *Journal of the Saudi Society of Agricultural Sciences* 19(2), 151-160.
 - 10. T. Awin, A. Median, S.M. Mohd Faudzi, **M. Maulidiani**, S.W. Leong, K. Shaari, F. Abas. 2020. Identification of α -glucosidase inhibitory compounds from *Curcuma mangga* fractions. *International Journal of Food Properties* 23(1), 154-166.
 - 11. A. Azizan, A.X. Lee, N.A. Abdul Hamid, **M. Maulidiani**, A. Median, S.Z. Abdul Ghafar, N.K.Z. Zolkeflee, F. Abas. 2020. Potentially bioactive metabolites from pineapple waste extracts and their antioxidant and α -glucosidase inhibitory activities by ^1H NMR. *Foods* 9(2), 9020173.
 - 12. **M. Maulidiani**, F. Abas, R. Rudiyanto, N.M. Hafiz Abdullah, A. Azlan, N.H. Lajis. 2019. Application of quantitative spectral deconvolution ^1H NMR (qsd-NMR) in the simultaneous quantitative determination of creatinine and metformin in human urine. *Analytical Methods* 11, 5487–5499.
 - 13. **M. Maulidiani**, N.A. Abdul-Hamid, F. Abas, Y.S. Park, Y.-K. Park, Y.M. Kim, S. Gorinstein. 2019. Detection of bioactive compounds in persimmon (*Diospyros kaki*) using UPLC-ESI-Orbitrap-MS/MS and fluorescence analyses. *Microchemical Journal* 149, 103978.

14. K.N. Lee, F. Abas, **Maulidiani**, A. Median, S.W. Leong, I.S. Ismail, K. Shaari. 2019. Chemical constituents and biological activities of South East Asia marine sponges: A review. *Pertanika Journal of Science and Technology* 27, 953–983.
15. M.A. Ado, **M. Maulidiani**, I.S. Ismail, H.M. Ghazali, K. Shaari, F. Abas. 2019. Acetylcholinesterase and α -glucosidase inhibitory compounds from *Callicarpa maingayi*. *Natural Product Research* XX, XXX-XXX. In press.
16. M.A. Ado, A. Median, **Maulidiani**, I.S. Ismail, H.M. Ghazali, F. Abas. 2019. Flavonoids from *Cynometra cauliflora* and their antioxidant, α -glucosidase, and cholinesterase inhibitory activities. *Chemistry of Natural Compounds* 55, 112–114.
17. K.M. Goh, **M. Maulidiani**, R. Rudiyanto, Y.H. Wong, M.Y. Ang, W.M. Yew, F. Abas, O.M. Lai, Y. Wang, C.P. Tan. 2019. Rapid assessment of total MCPD esters in palm-based cooking oil using ATR-FTIR application and chemometric analysis. *Talanta* 198, 215–223.
18. L.W. Khoo, A.S.F. Kow, **M. Maulidiani**, M.Y. Ang, W.Y. Chew, M.T. Lee, C.P. Tan, K. Shaari, C.L. Tham, F. Abas. 2019. ^1H -NMR metabolomics for evaluating the protective effect of *Clinacanthus nutans* (Burm. f) Lindau water extract against nitric oxide production in LPS-IFN- γ activated RAW 264.7 macrophages. *Phytochemical Analysis* 30, 46–61.
19. S.Y. Lee, A. Median, I.S. Ismail, **Maulidiani**, F. Abas. 2019. Antioxidants and α -glucosidase inhibitors from *Neptunia oleracea* fractions using ^1H NMR-based metabolomics approach and UHPLC-MS/MS analysis. *BMC Complementary and Alternative Medicine* 2019, 19.
20. Y.H. Wong, K.M. Goh, F. Abas, **M. Maulidiani**, K.L. Nyam, I.A. Nehdi, H.M. Sbihi, M.M. Gewik, C.P. Tan. 2019. Rapid quantification of 3-monochloropropene-1,2-diol in deep-fat frying using palm olein: Using ATR-FTIR and chemometrics. *LWT* 100, 404–408.
21. T. Awin, A. Median, **Maulidiani**, S.W. Leong, S.M. Muhd Faudzi, K. Shaari, F. Abas. 2019. Phytochemical and bioactivity alterations of *Curcuma* species harvested at different growth stages by NMR-based metabolomics. *Journal of Food Composition and Analysis* 77, 66–76.
22. T. Awin, N. Buzgaia, S.Z. Abd Ghafar, A. Median, S.M. Mohd Faudzi, **M. Maulidiani**, K. Shaari, F. Abas. 2019. Identification of nitric oxide inhibitory compounds from the rhizome of *Curcuma xanthorrhiza*. *Food Bioscience* 29, 126–134.
23. N.E. Tajidin, K. Shaari, **M. Maulidiani**, N.S. Salleh, B.R. Ketaren, M. Mohamad. 2019. Metabolite profiling of *Andrographis paniculata* (Burm. f.) Nees. young and mature leaves at different harvest ages using ^1H NMR-based metabolomics approach. *Scientific Reports* 2019, 9.
24. N.A. Abdul-Hamid, F. Abas, I.S. Ismail, C.L. Tham, **M. Maulidiani**, A. Median, S. Swarup, S. Umashankar, N.K.Z. Zolkeflee. 2019. Metabolites and biological activities of *Phoenix dactylifera* L. pulp and seeds: A comparative MS and NMR based metabolomics approach. *Phytochemistry Letters* 31, 20–32
25. N.A. Abdul-Hamid, F. Abas, **M. Maulidiani**, I.S. Ismail, C.L. Tham, S. Swarup, S. Umashankar. 2019. NMR metabolomics for evaluating passage number and harvesting effects on mammalian cell metabolome. *Analytical Biochemistry* 576, 20–32.
26. N.A. Abdul-Hamid, F. Abas, I.S. Ismail, C.L. Tham, **M. Maulidiani**, A. Median, S. Swarup, S. Umashankar. 2019. ^1H -NMR-based metabolomics to investigate the effects of *Phoenix dactylifera* seed extracts in LPS-IFN- γ -induced RAW 264.7 cells. *Food Research International* 125, 108565.

27. S.W. Leong, T. Awin, S.M. Mohd Faudzi, **M. Maulidiani**, K. Shaari, F. Abas. 2019. Synthesis and biological evaluation of asymmetrical diarylpentanoids as antiinflammatory, anti- α -glucosidase, and antioxidant agents. *Medicinal Chemistry Research* 28, 2002–2009.

Conference Publication

1. **Maulidiani**, Rudiyanto, F. Abas, K. Shaari, N.H. Lajis. Metabolomics approach for analyzing the effect of metformin treatment in obese diabetic rat model. International Conference on Natural Products, 19-21 March 2018, Penang, Malaysia.
2. **Maulidiani**, K. Shaari, N.H. Lajis, F. Abas. Antidiabetes and antihyperlipidemia activities of *Centella asiatica* extract on obese/obese diabetic rats based on ^1H NMR metabolomics. International Conference on Natural Products, 14–15 March 2017, Perak, Malaysia.
3. **Maulidiani**, K. Shaari, N.H. Lajis, F. Abas. ^1H NMR-based metabolomics approach to evaluate the effect of two pegaga extracts (*Centella asiatica* and *Hydrocotyle bonariensis*) on Sprague-Dawley obese rats. International Conference on Natural Products, 15–17 March 2016, Terengganu, Malaysia.

Other Outputs

1. N.H. Lajis, F. Abas, I.S. Ismail, and **M. Maulidiani**. 2016. Metabolomics Approach in Pharmacognosy. In Badal, S and Delgoda, R (ed.) *Pharmacognosy: Fundamentals, Applications and Strategy*. pp.597-616. Elsevier. Book Chapter.
2. Multiplatform metabolomics for monitoring the production of kombucha tea as a natural source of anti-oxidant. 2020. (Copyright No: LY2020000598).
3. Application of quantitative spectral deconvolution ^1H NMR (QSD-NMR) in the simultaneous quantitative determination of creatinine and metformin in human urine. 2020. (Copyright No: LY2020000612).

SUPERVISION

Master Degree

Thesis Title : Assessment of free 3-monochloropropane-1,2-diol (3-MCPD), free r-glycidol and free s-glycidol compounds cytotoxicity mechanism in human colon cell line, HCT 116 and its presence in tempura-based frying oil

Student Name : Siti Nur Syahirah Bt Nor Mahiran

Role : Co-supervisor

Status : On-going

Thesis Title : Effectiveness of *Tuecrium* herbs as an antibacterial agent

Student Name : Omar Jamal Mohammad Alabdallah

Role : Co-supervisor
Status : On-going

COURSE TAUGHT

- Basic Chemistry Practical (KIM3001)
- Biomolecule Chemistry (KIM4202)
- Practical Organic Chemistry (KIM3202)
- Applied Organic Chemistry (KIM4204)
- Safety And Management of Chemicals (KIM3002)

LINKS

- SCOPUS <http://www.scopus.com/inward/authorDetails.url?authorID=57203950429&partnerID=MN8TOARS>
- WoS <http://www.researcherid.com/rid/B-3053-2019>
- Researchgate https://www.researchgate.net/profile/Maulidiani_M
- ORCID <https://orcid.org/0000-0002-3227-4191>
- Google Scholar https://scholar.google.com/citations?user=NJ_euWoAAAAJ&hl=en

JOURNAL REVIEWER

- Food Chemistry (WoS) 2020-2021
- Scientific Report (WoS) 2021
- Food Research International (WoS) 2020
- International Food Research Journal (WoS) 2019-2020
- Industrial Crops and Products (WoS) 2020
- Journal of Agricultural and Food Chemistry (WoS) 2020
- Analytical Chemistry (WoS) 2020
- Journal of Mass Spectrometry (WoS) 2020
- Ciéncia e Agrotecnologia (WoS) 2020
- Journal of Pharmacy and Pharmacology (WoS) 2020
- Natural Product Communications (WoS) 2019-2020
- Saudi Pharmaceutical Journal (WoS) 2020

- Data in Brief (WoS) 2019
- Journal of Natural Medicines (WoS) 2019
- PeerJ (WoS) 2019