

Institute of Bioscience

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Field of expertise : Biotechnology, Neuroscience, Nutrigenomics, Cellular & Molecular Biology



Research Interests:

- Development of nutraceuticals products for the management of non-communicable diseases in regards to aging (i.e. neurodegeneration, diabetics, cardiovascular, cancer) from selected bioresources via extraction, and identification of lead compound by chromatography techniques.
- Determination of antioxidative and their pharmacological properties via cellular and animal models.
- Investigation of their mechanistic actions via nutrigenomics approaches.
- Enhancement of their delivery systems via nanotechnology.

List of Publications: H index = 17

1. Su Chern Foo, Fatimah Md. Yusoff, Mustapha Umar Imam, Jhi Biau Foo, **Norsharina Ismail**, Nur Hanisah Azmi, Yin Sim Tor, Nicholas M.H. Khong, Maznah Ismail. Increased fucoxanthin in *Chaetoceros calcitrans* extract exacerbates apoptosis in liver cancer cells via multiple targeted cellular pathways. *Biotechnology Reports*, Volume 21, e00296, 2019.
2. Der Jiun Ooi, Kim Wei Chan, **Norsharina Ismail**, Mustapha Umar Imam, Maznah Ismail. Polyphenol-rich ethyl acetate fraction of *Molineria latifolia* rhizome restores oxidant-antioxidant balance by possible engagement of KEAP1-NRF2 and PKC/NF- κ B signalling pathways. *Journal of Functional Foods*, 42 (2018), 111–121, 2018.
3. **Norsharina Ismail**, Maznah Ismail, Nur Hanisah Azmi, Muhammad Firdaus Abu Bakar, Zhang Yida, Maizatun Atmadini Abdullah, Hamidon Basri. Thymoquinone-rich fraction nanoemulsion (TQRFNE) decreases A β 40 and A β 42 levels by modulating APP processing, up-regulating IDE and LRP1, and down-regulating BACE1 and RAGE in response to high fat/cholesterol diet-induced rats. *Biomedicine & Pharmacotherapy*, 95 (2017), 780–788, 2017.
4. **Norsharina Ismail**, Maznah Ismail, Nur Hanisah Azmi, Muhammad Firdaus Abu Bakar, Zhang Yida, Johnson Stanslas, Dahiru Sani, Hamidon Basri, Maizatun Atmadini Abdullah. Beneficial effects of TQRF and TQ nano- and conventional emulsions on memory deficit, lipid peroxidation, total antioxidant status, antioxidant genes expression and soluble A β levels in high fat-cholesterol diet-induced rats. *Chemico-Biological Interactions*, 25(275), 61-73, 2017.
5. Bilyaminu Abubakar, **Norsharina Ismail**, Abdul Rahman Omar, Md Zuki Abu Bakar, Maznah Ismail. Rice consumption and predisposition to metabolic diseases: The role of PPAR γ and GLUT4 dysregulation. *Journal of Nutrition & Intermediary Metabolism*, 10 (2017), 8-18, 2017.
6. **Norsharina Ismail**, Maznah Ismail, Nur Hanisah Azmi, Muhammad Firdaus Abu Bakar, Hamidon Basri, and Maizatun Atmadini Abdullah. Modulation of hydrogen peroxide-induced oxidative stress in human neuronal cells by thymoquinone-rich fraction and thymoquinone via transcriptomic regulation of antioxidant and apoptotic signaling genes. *Oxidative Medicine and Cellular Longevity* Volume 2016, Article ID 2528935, 15 pages, 2016.

7. Jhi Biau Foo, Latifah Saiful Yazan, Yin Sim Tor, Agustono Wibowo, **Norsharina Ismail**, Nurdin Armania, Yoke Kqueen Cheah, Rasedee Abdullah. *Dillenia suffruticosa* dichloromethane root extract induced apoptosis towards MDA-MB-231 triple-negative breast cancer cells. *Journal of Ethnopharmacology* 187, 195–204, 2016.
8. Yida, Z., Imam, M. U., Ismail, M., **Ismail, N**, Azmi, N. H, Wong W. & Abdullah, M. A. N-acetylneuraminic acid supplementation prevents high fat diet-induced insulin resistance in rats through transcriptional and non-transcriptional mechanisms. *Biomed Research International* 2015, 10 pages, 2015.
9. **Norsharina Ismail**, Maznah Ismail, Mustapha Umar Imam, Nur Hanisah Azmi, Siti Farhana Fathy and Jhi Biau Foo. Mechanistic basis for protection of differentiated SH-SY5Y cells by oryzanol-rich fraction against hydrogen peroxide-induced neurotoxicity. *BMC Complementary and Alternative Medicine* 14:467, 11 pages, 2014.
10. Abdalbasit Adam Mariod, Ramlah Mohamad Ibrahim, Maznah Ismail and **Norsharina Ismail**. Antioxidant activity and phenolic content of phenolic rich fractions obtained from black cumin (*Nigella sativa*) seedcake. *Food Chemistry* 116, 306-312, 2009.

List of Grants:

1. Evaluation of the secretome signature of combinatory nanomedicine calcium carbonate-loaded *Polygonum minus* extract with 5-Fluorouracil-Sulforaphane-Thymoquinone on human primary SW480 and metastatic SW620 colon cancer cells. Geran Putra-IPM (GP-IPM/2020/9684800), 2020-2022 (Principal Investigator).
2. Biodistribution and blood brain barrier permeation of novel thymoquinone-rich fraction (TQRF) nanoemulsion in sporadic rat model of Alzheimer's disease. Fundamental Research Grant Scheme (FRGS) (02-01-13 1223FR), 2013-2015 (Co-Investigator).
3. Nutrigenomics profiling of human neuronal SHSY5Y pre-treated with extracts formulation following exposure to Alzheimer's β -amyloid peptide and hydrogen peroxide in vitro. Research University Grant Scheme (RUGS) (04-01-09-0615RU), 2009-2011 (Principal Investigator).

List of Book/Book Chapter:

1. **Norsharina Ismail**, Nur Hanisah Azmi, Siti Nurulhuda Mastuki, Norazalina Saad, and Ahmad Faizal Abdull Razis (2019). *Antidesma montanum*: Biochemistry and Bioactive Compounds. In A. A. Mariod (Ed.), *Wild Fruits: Composition, Nutritional Value and Products* (pp. 1-577). Springer Nature Switzerland AG.
2. Norazalina Saad, Nur Khatijah Mohd Zin, Shafinah Ahmad Suhaimi, Muhammad Ehsan Fitri Rusli, **Norsharina Ismail**, Siti Nurulhuda Mastuki, and Rozita Rosli (2019). *Ricinoden dronheudelotii* (Njangsa): Composition, Nutritional Values and Product. In A. A. Mariod (Ed.), *Wild Fruits: Composition, Nutritional Value and Products* (pp. 1-577). Springer Nature Switzerland AG.
3. Siti Nurulhuda Mastuki, Siti Munirah Mohd Faudzi, **Norsharina Ismail**, and Norazalina Saad (2019). *Muntingia calabura*: Chemical Composition, Bioactive Component and Traditional Uses. In A. A. Mariod (Ed.), *Wild Fruits: Composition, Nutritional Value and Products* (pp. 1-577). Springer Nature Switzerland AG.