

# TENGGU HAZIYAMIN BIN TENGGU ABDUL HAMID



- KULLIYAH OF SCIENCE
- IIUM Kuantan Campus
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## ACADEMIC QUALIFICATION

- PhD in Enzyme Technology
- Master of Science (Food & Agriculture Biotechnology)
- Bachelor of Science (Biochemistry)

## TEACHING RESPONSIBILITIES

|   |   |
|---|---|
| COMMERCIALISATION AND CURRENT ISSUES IN BIOTECHNOLOGY | 2016/2017 2017/2018 2018/2019 2019/2020   |
| ENZYMولوجY  | 2008/2009 2009/2010 2010/2011 2011/2012<br>2012/2013 2013/2014 2014/2015 2016/2017<br>2017/2018 2018/2019 2019/2020           |
| INTRODUCTION TO BIOINFORMATICS                        | 2009/2010 2010/2011 2011/2012 2012/2013<br>2013/2014 2014/2015  |
| MOLECULAR AND CELL BIOLOGY                            | 2003/2004   |
| MOLECULAR BIOLOGY                                     | 2002/2003 2003/2004   |
| MOLECULAR CELL BIOLOGY                                | 2002/2003 2003/2004   |
| PHARMACEUTICAL BIOTECHNOLOGY & BIOPHARMACEUTICAL      | 2013/2014   |
| PRINCIPLES OF BIOCHEMISTRY                            | 2017/2018 2018/2019 2019/2020   |
| PRINCIPLES OF CELL AND TISSUE CULTURE                 | 2003/2004   |
| PROJECT SEMINAR                                       | 2009/2010 2010/2011   |
| PROTEIN BIOTECHNOLOGY                                 | 2003/2004 2008/2009 2009/2010 2010/2011<br>2011/2012 2012/2013 2013/2014 2014/2015<br>2016/2017 2017/2018 2018/2019 2019/2020 |
| RESEARCH METHODOLOGY                                  | 2019/2020   |

## RESEARCH PROJECTS

In Progress

- 2019 - Present** Investigation on production of biosurfactants and their effect on the molecular interactions of polycyclic aromatic hydrocarbons with ring hydroxylating dioxygenase during biodegradation
- 2019 - Present** Assessment on suitable hydrocolloids for probiotic encapsulation enhancing its viability and stability
- 2017 - Present** Computational investigation on the interaction of  $\beta$ -Glucosidase with the cell wall component of pathogenic fungus, *Macrophomina phaseolina*
- 2017 - Present** Characterizing phytoremediation capacity of *Jatropha curcas* and arbuscular mycorrhizal fungi for remediating bauxite mining sites
- 2015 - Present** The Mechanistic Role of Active Site Residues in Non-Stereospecific Haloacid Dehalogenase E (Dehe) Using Computational Approach
- 2015 - Present** Routine versus clinically indicated replacement of peripheral intravascular catheter: Factors determining incidence of phlebitis
- 2004 - Present** Functional Food and Nutraceuticals Research Unit (FFNRU)

### **Completed**

- 2015 - 2019** The Mechanistic Role of Active Site Residues in Non-Stereospecific Haloacid Dehalogenase E (Dehe) Using Computational Approach
- 2015 - 2016** An Assessment on Microbial Contamination in Drinking Water Wells Exposed to Different Degrees of Submergence during Flood
- 2015 - 2019** Routine versus clinically indicated replacement of peripheral intravascular catheter: Factors determining incidence of phlebitis
- 2014 - 2018** Identification of 3CP-Degrading Bacteria from Marine Sponge and its  $\beta$ -dehalogenase Gene
- 2013 - 2017** The Separation of Plasmid DNA Technologies Using the Normal and Tangential Flow Filtration - The Development Process to Purify DNA for DNA Vaccination
- 2013 - 2016** Proteomic Analysis of Rice Storage Proteins in Relation to Nutrient Quality
- 2012 - 2016** Optimisation and Purification Studies of Bioactive Peptides or Bacteriocin-like Protein isolated from Lactic Acid Bacteria Isolated from Non-Broiler Chicken (*Gallus-gallus*)
- 2012 - 2015** The characterization and studies on anti-neoplastic properties of purified bacteriocin from lactic acid bacteria isolated from non broiler chicken
- 2010 - 2011** Extraction and Characterization of Chitin and Chitosan Contents from Local Squid(s) and Tilapia Fish Scales
- 2010 - 2013** Sigma subunit-Dependent adaptation of physiology and metabolic functions in Burkholderia for effective bioremediation process
- 2010 - 2013** Investigation Of MRSA Occurrence In Hospital Tengku Ampuan Afzan And Iium Kuantan

**2009 - 2012** Isolation of lactic acid bacteria(LAB)producing inhibitory proteins from local poultry and fermented food

## PUBLICATIONS

### Article

- 2019** [The mechanistic role of active site residues in non-stereo haloacid dehalogenase E\(DehE\).](#) Journal of Molecular Graphics and Modelling , 90 pp.219-225
- 2018** [Effect of 2014 massive flood on well water qualities: a case study on Kelantan River basin, Malaysia.](#) Journal of Water and Land Development , 2018 (38) pp.127-136
- 2017** [Expression of the dspA/E gene of Erwinia amylovora in non-host plant Arabidopsis thaliana.](#) Biotechnology and Biotechnological Equipment , 31 (1) pp.85-90
- 2017** [In silico binding interactions of dehalogenase \(Dehe\) with various haloalkanoic acids.](#) Galeri Warisan Sains , 1 (1) pp.4-6
- 2017** [Lactococcus lactis strain A5 producing nisin-like bacteriocin active against gram positive and negative bacteria.](#) Tropical Life Science Reserach , 28 (2) pp.107-118
- 2017** [The role of DSPF, the type III secretion chaperone of DspA/E of Erwinia amylovora, in pathogenicity in host and non-host plants.](#) The Journal of Animal & Plant Sciences , 27 (1) pp.309-315
- 2017** [Investigation on plasmid DNA separation under vacuum suction using cellulose generated and polyethersulfone ultra filters.](#) Journal of Applied Pharmaceutical Science , 7 (7) pp.46-50
- 2017** [Lactic acid bacteria with antimicrobial properties isolated from the instestines Of Japanese Quail \(Coturnix coturnix Japonica\).](#) Galleri Warisan Sains , 1 (1) pp.10-12
- 2015** [Anti-proliferative activities of purified bacteriocin from enterococcus mundtii strain c4l10 isolated from the caecum of Malaysian non-broiler chicken on cancer cell lines.](#) International Journal of Pharmacy and Pharmaceutical Sciences , 7 (2) pp.334-337
- 2015** [Detection and characterization of enterocin encoding genes in enterococcus mundtii strain C4L10 from the cecum of non-broiler chicken.](#) International Journal of Pharmacy and Pharmaceutical Sciences , 7 (4) pp.131-136
- 2015** [New lipase producing  \$\beta\$ -proteobacteria strains caldimonas sp. and tepidimonas sp. isolated from a Malaysian hot springs.](#) Sains Malaysiana , 44 (5) pp.701-706
- 2015** [Isolation of moderately halophilic lipase producing bacteria from sponges in Pahang coastal water, Malaysia.](#) Jurnal Teknologi , 77 (25) pp.57-61
- 2015** [Isolation and identification of 3-chloropropionic acid degrading bacterium from marine sponge.](#) Jurnal Teknologi (Sciences & Engineering) , 77 (25) pp.71-75
- 2015** [An S188V mutation alters substrate specificity of non-stereospecific  \$\alpha\$ -haloalkanoic acid dehalogenase E \(DehE\).](#) PLoS ONE , 10 (3) pp.1-21

- 2014** [Anti-proliferative bacteriocins active against MRSA from coagulase negative \*Ent. mundtii\* strain C4L10 isolated from non-broiler chicken.](#) Journal of Probiotics & Health , 2 (2) pp.53
- 2014** [Molecular characterization of monochloroacetate-degrading \*arthrobacter\* sp. Strain d2 isolated from Universiti Teknologi Malaysia agricultural area.](#) Bioremediation Journal , 18 (1) pp.12-19
- 2013** [Isolation of coagulase negative \*Enterococcus\* sp. strains from non-broiler chicken producing bacteriocin active against \*Staphylococcus aureus\*.](#) Journal of Agrobiology , 30 (1) pp.33-42
- 2013** [Lactic acid bacteria: bacteriocin producer: a mini review.](#) IOSR Journal of Pharmacy , 3 (4) pp.2319-4219
- 2013** [Molecular modelling and functional studies of the non-stereospecific  \$\alpha\$ -haloalkanoic acid dehalogenase \(DehE\) from \*Rhizobium\* sp. RC1 and its association with 3-chloropropionic acid \( \$\beta\$ -chlorinated aliphatic acid\).](#) Biotechnology & Biotechnological Equipment , 27 (2) pp.3725-3736
- 2013** [Identification of functional residues essential for dehalogenation by the non-stereospecific  \$\alpha\$ -haloalkanoic acid dehalogenase from \*Rhizobium\* sp. RC1.](#) Journal of Basic Microbiology , 53 pp.1-7
- 2013** [Isolation of pigment-producing strain of \*Staphylococcus kloosii\* from the respiratory tree of \*Holothuria\* \(\*Mertensiothuria\*\) \*leucospilota\* \(Brandt, 1835\) from Malaysian waters.](#) Tropical Life Sciences Research , 24 (1) pp.85-100
- 2013** [Identification of functional residues essential for dehalogenation by the non-stereospecific  \$\alpha\$ -haloalkanoic acid dehalogenase from \*Rhizobium\* sp. RC1 .](#) Journal of Basic Microbiology , 53 pp.1-7
- 2013** [Isolation of lactic acid bacteria strain \*Staphylococcus piscifermentans\* from Malaysian traditional fermented shrimp cinaluk.](#) International Food Research Journal , 20 (1) pp.125-129
- 2012** [Isolation and screening of lactic acid bacteria, \*Lactococcus lactis\* from \*Clarias gariepinus\* \(African catfish\) with potential use as probiotic in aquaculture.](#) African Journal of Biotechnology , 11 (29) pp.7494-7499
- 2012** [The isolation and characterization of coagulase-negative \*Staphylococcus\* sp. from intestine of a Malaysian rabbit \(\*Oryctolagus cuniculus\*\) .](#) Borneo Journal of Resource Science and Technology , 2 (1) pp.54-58
- 2012** [Molecular identification and biodegradation of 3-chloropropionic acid \(3CP\) by filamentous fungi-\*Mucor\* and \*Trichoderma\* species isolated from UTM agricultural land.](#) Malaysian Journal of Microbiology , 9 (1) pp.120-124
- 2011** [A review on non-stereospecific haloalkanoic acid dehalogenases.](#) African Journal of Biotechnology , 10 (48) pp.9725-9736
- 2011** [Antioxidant properties of soft coral \*Dendronephthya\* sp.](#) International Journal of Pharmacology , 7 (2) pp.263-267
- 2011** [Purification and properties of a new dehalogenase enzyme from \*Pseudomonas\* sp. B6P grow in 3- chloropropionate \(3CP\).](#) African Journal of Biotechnology , 10 (4) pp.610-614

- 2011 [Isolation of lactic acid bacteria from Malaysian non-broiler chicken \(\*Gallus Gallus\*\) intestine with potential probiotic for broiler feeding.](#) *IUM Engineering Journal* , 12 (4) pp.133-139
- 2010 [Molten Globule-Triggered Inactivation of a thermostable and solvent stable lipase in hydrophilic Solvents.](#) *The Protein Journal* , 29 (4) pp.290-297
- 2009 [The role of lid in protein-solvent interaction of the simulated solvent stable thermostable lipase from bacillus strain 42 in water-solvent mixtures.](#) *Biotechnology & Biotechnological Equipment* , 23 (4) pp.1524-1530
- 2009 [Crystallization of N-terminal Strep-tagged Fusion Lipase from Thermostable \*Bacillus sp. Strain 42.\*](#) *Acta Chrytallography* , A65 pp.155
- 2009 [Characterization and solvent stability of strep-tagged purified recombinant lipase from thermostable and solvent tolerant \*Bacillus sp. strain 42.\*](#) *Annals of Microbiology* , 59 (1) pp.111-118
- 2008 [Overexpression and characterization of strep-tagged thermostable organic solvent-stable lipase from \*Bacillus sp. strain 42.\*](#) *Journal of Biotechnology* , 136 (S1) pp.335

#### Conference or Workshop Item

- 2019 [The mechanistic role of active site residues in non-stereo Haloacid Dehalogenase E \(DehE\).](#) **In: 2nd International Conference on Biosciences & Medical Engineering 2019**
- 2019 [Molecular docking analysis of  \$\beta\$ -1,4-Glucosidase from \*trichoderma harzianum\* against mycelial cell wall components of \*macrophomina phaseolina\*.](#) **In: 2nd International Conference on Biosciences and Medical Engineering (ICBME) 2019**
- 2016 [Assessment on the quality on drinking wells exposed to different degrees of submergence during flood in Kelantan.](#) **In: Persidangan Kajian Bencana Banjir 2014**
- 2015 [Protein profiles and antimicrobial activity of common Sunda Toad, \*Duttaphrynus melanostictus paratoid\* secretions.](#) **In: 3rd International Conference on Biological, Chemical and Environmental Sciences (BCES-2015)**
- 2014 [Anti-proliferative bacteriocin active against MRSA from coagulase negative \*Ent. mundtdii\* strain C4L10 isolated from non broiler chicken.](#) **In: 3rd International Conference & Exhibition on Probiotics, Functional & Baby Foods**
- 2013 [The structural and functional studies of the non-stereospecific  \$\alpha\$ -haloacid dehalogenase \(DehE\) from \*rhizobium sp. RC1\*.](#) **In: Biomicroworld2013**
- 2013 [Gram-positive bacteria with commercial potentials from the intestines of \*Holothuria \(Mertensiothuria\) leucospilota\* \(Brandt, 1835\) \(Timun laut\) and \*Stichopus horrens\* Selenka, 1867 \(Gamat\) from Malaysia.](#) **In: IUM Research, Invention and Innovation Exhibition (IRIIE) 2013**
- 2012 [Lactic acid bacteria with probiotic potential producing antimicrobial proteins against methicilin resistant \*Staphylococcus aureus\* \(MRSA\) isolated from Malaysian non-broiler chicken.](#) **In: 15th International Biotechnology Symposium (IBS) and Exhibition, IBS 2012: Innovative Biotechnology for a Green World and Beyond**

- 2012 [Elucidation of Pigment Biosynthetic Pathways – Towards Integration of Metabolomics, Metabolic Flux Analysis, and Metabolic Engineering.](#) In: **2012 IIUM's 1st International Postgraduate Research Conference (IIPRC 2012)**
- 2010 [Isolation and screening of lactic acid bacteria \(LAB\) from non-broiler chicken \(\*Gallus gallus\*\) for potential probiotic.](#) In: **IIUM Research, Innovation & Invention Exhibition (IRIIE 2010)**
- 2010 [Isolation and characterization of lactic acid bacteria from \*clarias macrocephalus\* \(African Catfish\) for potential probiotic purposes.](#) In: **IIUM Research, Innovation & Invention Exhibition (IRIIE 2010)**
- 2008 [Protein-solvent interaction and simulation studies of solvent stable and thermostable lipase from \*Bacillus\* strain 42 in water-solvent mixtures .](#) In: **Protein Design and Evolution for Biocatalysis**

#### Book

- 2012 [Future direction biotechnology education in Malaysia.](#) Ministry of Higher Education Malaysia

#### Book Section

- 2017 [Probiotics and health.](#) In: **Frontiers in science and technology** IIUM Press, International Islamic University Malaysia . ISBN 9789674184469 , pp.3-48
- 2016 [Taxonomical analysis of of beta-haloalcanoic acid-degrading bacteria.](#) In: **Advances in biosciences** Penerbit UTM Press . ISBN 9789835213465 , pp.20-46
- 2011 [Probiotic for sustainability protein source in Malaysia .](#) In: **Biotechnologies towards sustainable development in Malaysia** IIUM Press . ISBN 9789674182007 , pp.126-132
- 2011 [Bacteriocin as safe antimicrobial agent .](#) In: **Biotechnologies towards sustainable development in Malaysia** IIUM Press . ISBN 9789674182007 , pp.133-140
- 2011 [Chitin and chitosan from fresh water fish tilapia \(\*Oreochromis niloticus\*\) scale .](#) In: **Biotechnologies towards sustainable development in Malaysia** IIUM Press . ISBN 9789674182007 , pp.223-235
- 2010 [Asid absisik.](#) In: **Ensiklopedia Sains & Teknologi (Biologi)** Dewan Bahasa & Pustaka/UTM . ISBN 9836273379 , pp.24-25
- 2010 [Auksin.](#) In: **Ensiklopedia Sains & Teknologi (Biologi) Jld 11** Dewan Bahasa & Pustaka/UTM . ISBN 9836273379 , pp.24-25
- 2010 [Giberelin.](#) In: **Ensiklopedia Sains & Teknologi (Biologi) Jld 11** Dewan Bahasa & Pustaka/UTM . ISBN 9836273379 , pp.139-140
- 2010 [Immunologi.](#) In: **Ensiklopedia Sains & Teknologi (Biologi) Jld 11** Dewan Bahasa & Pustaka/UTM . ISBN 9836273379 , pp.168-170