Biotechnologies towards Sustainable Development in Malaysia

Zarina Zainuddin

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Include index
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# Table of Contents

Chapter 1 Bioethics and biotechnology: A holistic approach in Islamic perspectives  
Ahmed Jalal Khan Chowdhury, Zaima Azira Zainal Abidin, Zarina Zainuddin and Suzannah Abdul Rahman  

Chapter 2 Malaysia's Sea Cucumber (Echinodermata: Holothuroidea) Database  
Kamarul Rahim Kamarudin  

Chapter 3 Diversity and Exploitation of Sea Cucumbers in Malaysia and Its Neighbouring Countries  
Kamarul Rahim Kamarudin  

Chapter 4 *Holothuria (Mertensiosthuria) leucospilota* (Brandt, 1835) in the Marine Environment of Malaysia  
Kamarul Rahim Kamarudin  

Chapter 5 Genetic manipulation for better bioremediation processes  
Noor Faizul Hadry Nordin  

Chapter 6 Microbial bioremediation and sustainable development  
Noor Faizul Hadry Nordin  

Chapter 7 Heavy metal uptakes by plants  
Phang Ing Chia  

Chapter 8 Mechanisms of heavy metal tolerance in plants (I) – Avoidance mechanisms  
Phang Ing Chia  

Chapter 9 Mechanisms of heavy metal tolerance in plants (I) – Tolerance mechanisms  
Phang Ing Chia  

Chapter 10 Identifying catalytic residues for peptidases: *in silico* perspective  
Noraslinda Muhamad Bunnori  

Chapter 11 Important considerations in qRT-PCR  
Phang Ing Chia
Chapter 12 Molecular approach of macroinvertebrates in tropical wetland, Lake Bera, Malaysia: Towards the assessment of ecosystem health
Nurhidayati Abdul Aziz, Ahmed Jalal Khan Chowdhury, Kamarul Rahim Kamarudin, Mohd Azmi Ambak and Najiah Musa

Chapter 13 Probiotic for sustainability protein source in Malaysia
Tengku Haziyamin Tengku Abdul Hamid

Chapter 14 Bacteriocin as safe antimicrobial agent
Tengku Haziyamin Tengku Abdul Hamid

Chapter 15 Review on marine actinomycetes
Zaima Azira Zainal Abidin

Chapter 16 Biotechnology potential tropical mangrove plant with special emphasis on Avicennia alba in Tanjung Lumpur, Pahang Malaysia
Ahmed Jalal Khan Chowdhury, Deny Susanti, and Nur Sazwi Binti Nordin

Chapter 17 Studies on agronomy, breeding and genetics of Stevia rebaudiana (Bertoni) in Malaysia
Raji Akintunde Abdullah and Mohamad bin Osman

Chapter 18 Identification and characterization of Burkholderia pseudomallei serine and metallopeptidases
Noraslinda Muhamad Bunnori

Chapter 19 Analysis of xylene degradation by bacteria isolated from petroleum contaminated sites
Noor Faizul Hadry Nordin and Marni Farhani Mansor

Chapter 20 Bioadsorption of heavy metals from synthetic waste water by tropical rambutan seed
Ahmed Jalal Khan Chowdhury, Abul Bashar Mohammed Helal Uddin, Mohd Sufian Mohamad Shukri, Kamaruzzaman Yunus

Chapter 21 Chitin and chitosan from fresh water fish tilapia (Oreochromis niloticus) scale
Ahmed Jalal Khan Chowdhury, Nor Hafizah Zakaria, Tengku Haziyamin Tengku Abdul Hamid and Deny Susanti

Chapter 22 Chitin and chitosan from potential shrimps and crabs of Malaysia
Ahmed Jalal Khan Chowdhury, Suffi Nurul Husna, Deny Susanti, Akbar John and Kamaruzzaman Yunus
Chapter 23 Extraction of chitin and chitosan from Malaysian cephalopods “Sotong mengaban” (Sepioteuthis lessoniana) and “Sotong jarum” (Loligo vulgaris)  
Ahmed Jalal Khan Chowdhury, Mohd Hazman Mohd Salleh, Deny Susanti, Akbar John and Jamaluddin Daud  

Chapter 24 In Planta Agrobacterium tumefaciens transformation of MR 219 rice  
Zaima Azira Zainal Abidin and Rabiah Abdul Wahab  

Chapter 25 Optimisation of transformation system for chilli embryo (Capsicum annuum variety Kulai) using particle bombardment  
Zarina Zainuddin and Rozilawati Mohamad Achil  

Chapter 26 Screening of mangrove plants for gram negative antibacterial activity  
Zarina Zainuddin and ‘Izzati Akmal Hasan  

Chapter 27 Antibacterial activities of green and ripens banana peel (Musa, AA cv. Sucriner) in Malaysia  
Ahmed Jalal Khan Chowdhury, Dina Fuad, Md. Tariqur Rahman and Akbar John  

Chapter 28 Agglutinin and antibacterial activities in oyster, Chama pacifica plasma  
Najiah Musa, Arief Izzairry Zamani, Ahmed Jalal Khan Chowdhury and Muhamad Hazwan Mat Tar, Nadirah Musa  

Chapter 29 The effect of cooking methods on meat samples using PCR-RFLP analysis  
Zaima Azira Zainal Abidin and Haryati Ithnin
Chapter 16

Biotechnology potential tropical mangrove plant with special emphasis on

Avicennia alba in Tanjung Lumpur, Pahang Malaysia

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Introduction

Antioxidant is an essential compound because it serves as a type of defence mechanism in the body. Many studies have shown that antioxidant compounds prevent body from getting cancer, heart disease, ageing as well as other chronic diseases (Devasagayam et al., 2004; Agoramoorthy et al., 2008). These diseases are the results of free radicals reaction with the cells inside the body. The free radicals such as peroxide and hydroperoxide in the body come from various sources. Everyday people are exposed to huge amount of free radicals from pollutions created by cigarette smokes, radiations, automobile emissions and sometimes pesticides and preservatives from food intake. Free radicals that exist in the body are very dangerous as they may oxidize DNA, nucleic acid, proteins or lipids and possibly contribute to the ageing process and development of other chronic diseases. Human bodies have a natural defense system against these free radicals which is known as antioxidant. The presence of antioxidant in the body will help to neutralize the free radicals and thus prevent much cellular damage. Free radicals have unpaired electrons which are not in stable form. Because these radicals are not stable, they are likely to take electrons from other atoms, create chain reactions and transform those atoms into secondary free radicals that