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Editor-in-chief of

Journal of Coastal Zone Management

Ocky Radjasa is a professor of marine microbiology at Diponegoro University of Semarang, Central Java, Indonesia. Radjasa obtained his bachelor of science degree in Environmental Science at Soedirman University of Purwokerto, Indonesia. After graduation, he joined Department of Marine Science, Diponegoro as a junior assistant and went to McMaster University, Hamilton, Ontario, Canada and obtained his M.Sc in Biology in 1994. He joined Ocean Research Institute (ORI), the University of Tokyo, and received a PhD in aquatic biosciences in 2001. He then received a DAAD postdoctoral fellowship in Institute of Chemistry and Biology of Marine environment, University of Oldenburg in 2002. In 2004, Radjasa joined IFM-GEOMAR in Kiel as a Humboldt fellow, until he returned to Indonesia in 2005 and took a helm as the Director of Center of Tropical Coastal and Marine Studies, Diponegoro University until 2009.

Biography

Biography

- Dr. Radjasa was project leader at Eijkman Institute for Molecular Biology in Jakarta and established a research group in marine microbiology. In 2011, Radjasa got his full professorship in Department of marine Science, Diponegoro University. Radjasa is editor for several journals and is editor-in-chief for the Journal of Coastal Development which is an official journal of Indonesian Society of Oceanolgist (ISOI). Radjasa received a prestigous Cipta Lestari Award from Indonesian Biodiversity Foundation in 2006 and a Biovision Catalyzer award from Biovision World Life Science Forum in March 2013 in Lyon, France. Radjasa was the Director of Central Laboratory of Research and Service-Diponegoro University, an integrated laboratory housing 20 different laboratories covering medical, biological, chemical and physical field of studies. Currently he serves as the Director of Research and Community Service Institute

Research Interests

- His research interest is primarily focused on marine molecular microbial diversity and marine microbial natural products from marine microbial symbionts. He is currently working to screen marine microbial symbionts against Multi Drug Resistant (MDR) pathogens from Indonesian local hospitals supported by USAID and University of California Santa Cruz and fungal symbionts of corals for the treatment of cancer in collaboration with 5 EU-countries. He concerned much about the use of coral reefs in sustainable manner.

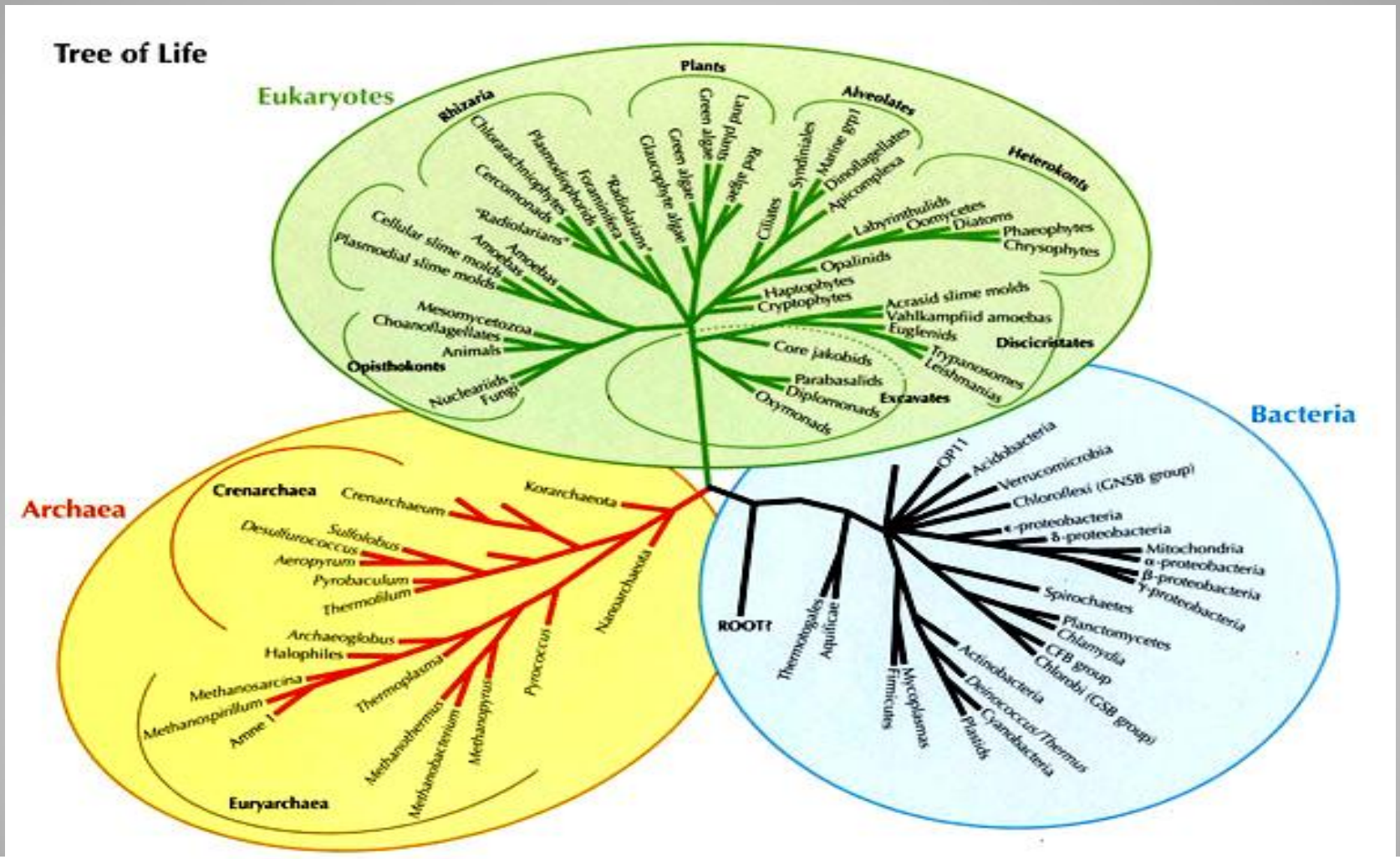
Recent Publications

- Kurniasih,S.D., A. Alfi, D. Natalia, **O. K Radjasa**, and Z. Nurachman. 2014. Construction of individual, fused, and co-expressed proteins of endoglucanase and β-glucosidase for hydrolyzing sugarcane bagasse. *Microbiol. Res.* 169: 725-732.
- Sabdono, A., **O.K. Radjasa.,** Ambariyanto., A. Trianto., D.P. Wijayanti., D. Pringenies., and Munasik. 2014. An early evaluation of coral disease prevalence on Panjang island, Java Sea, Indonesia. *Int. J. Zool. Res.* 10(2): 20-29
- Puspasari, F.; **Radjasa, O.K**; Noer, A; Nurachman, Z; Syah, Y; van der Maarel, M; Dijkhuizen, L; Janecek, S; Natalia, D. 2012. Raw starch degrading α-amylase from *Bacillus aquimaris* MKSC 6.2: isolation and expression of the gene, bioinformatics and biochemical characterization of the recombinant enzyme. *J. Appl. Microbiol*. 114: 108-120
- **Radjasa, O.K**., M. M. Khoeri., C. C. Darusallam., H. Trimasanto and H. Sudoyo. 2013. Bacterial symbionts of reef invertebrates: screening for anti-pathogenic bacteria activity. *Biodiv.* 14: 80-86.
- **Radjasa, O.K.,** Y. M. Vaske., G. Navarro., H. C. Vervoort., K. Tenney., R. G. Linington., and P. Crews. 2011. Highlights of marine invertebrate-derived biosynthetic products: their biomedical potential and possible production by microbial associants. *Bioorg. Med. Chem*. 19: 6658-6674

Introduction

- Seas and oceans cover more than 70% of the Earth's surface, host the majority of its biomass, and contribute significantly to all global cycles of matter and energy. All life on Earth most likely originated from microbes in the sea. In today's marine ecosystems, following billions of years of evolution, microbes such as Bacteria, Archaea,viruses, fungi and protists (including microalgae), dominate the living biomass.
- All three domains of life comprise microorganisms while *Bacteria* and *Archaea* are comprised exclusively of microorganisms. All macroorganisms are *Eukarya* but the vast majority of the eukaryotic phylogenetic groups are nevertheless also microorganisms.

Three domains of life



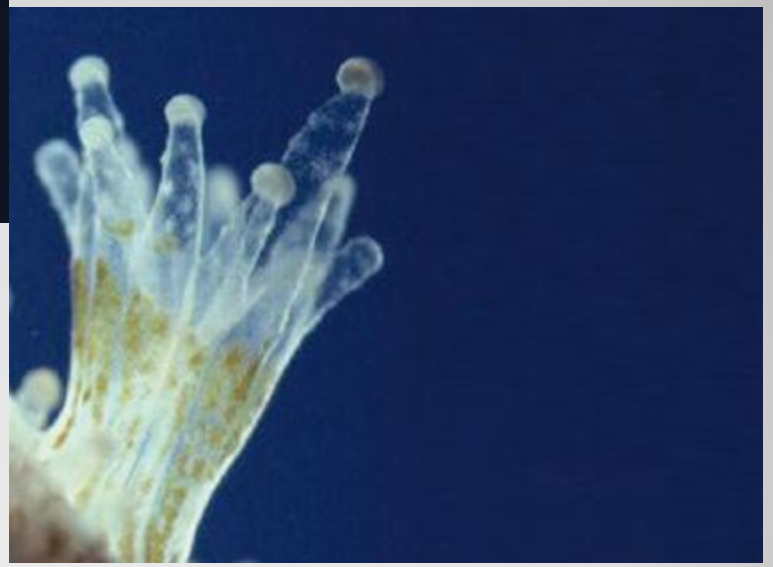
- The enormous microbial diversity also gives rise to a largely untapped amount of genetic information, bioactive compounds and biomaterials which could deliver important benefits and applications of societal interest, for example, to improve medical treatments, fisheries and aquaculture applications, the supply of energy and for the development of industrial products and processes.

- Marine microorganisms are of critical importance to the health of our environment and our well-being. They are integral to all major biogeochemical cycles, fluxes and processes occurring in marine systems where elements move between oxidised and reduced forms. Microbes are extremely abundant and diverse and produce and release carbon products that are key in the regulation of the Earth's climate, particularly CO2 and CH4.

- Marine microorganisms also provide essential goods and services to our society in terms of production of oxygen, supporting sustainable supply of food, regulating the health of the marine environment and providing an largely untapped source of genetic information and biomolecules for use in industrial and medical applications and products.

Professional Prospects

Symbiotic microorganisms



Oceans and coastal waters, including estuaries, harbour a tremendous diversity of *Bacteria*, *Archaea*, viruses, fungi, protists and microalgae able to transform C-, N-, P- and S-containing compounds in ways that influence their availability for biological production. Thus, the metabolism of marine microorganisms maintains the major biogeochemical cycles on Earth, including the significant production of oxygen required for aerobic life and the biological removal of carbon. The balance of all these cycles and compounds controls the dynamics of all ocean biomes. Thus, studying the ecology of marine microbial communities is essential for an understanding of ecosystem function.

Biogeochemical cycle

Definition

The diversity of a microbial consortium can vary and change with environmental factors (operating parameters) like for example temperature, ammonium concentration and CO2 concentration. Different types of microbes can sometimes perform different functions and sometimes complement each other.

Approved By Ocky Karna Radjasa

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