

***De novo* genome sequencing of dematiaceous fungi: A gateway to understand the biology of poorly studied fungi**

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Dematiaceous fungi are a heterogeneous group of fungi with dark colonies and pigmented fungal elements, typically soil saprophytes and may grow indoors causing hypersensitivity reactions in susceptible individuals. They are also opportunistic pathogens in immunocompromised patients. The treatment of dematiaceous fungal infection remain a challenging task due to the lack of familiarity to its infections, difficulties in clinical isolates identification and no proper antifungal susceptibility test data as guide for antifungal treatment choices. A total of 112 black fungi (9.0% of 1,250 moulds) were isolated in the Mycology Unit, UMMC, Malaysia from year 2006 to 2011. The identities of all these isolates were confirmed by internal transcribed spacer (ITS)-based PCR amplifications and phylogenetic classifications. To our knowledge, currently no specific effort has been put into understanding the biology of dematiaceous fungi at the genomic level. Our research group has put up a concerted effort to sequence the draft genome sequences of *Cladosporium sphaerospermum* UM843, *Daldinia eschscholzii* UM102, *Pleosporales* sp. UM1110 and *Herpotrichiellaceae* sp. UM 238 utilising the Next-generation sequencing (NGS) technology. Several genes associated with resistance to the antifungal drugs fluconazole, benomyl and fluorocytosine were identified in these genome sequences. The availability of the dematiaceous fungi genome sequences and genes associated with antifungal resistance will open tremendous opportunities for the research on dematiaceous fungi.

Biography

Ng Kee Peng is currently a senior Clinical Consultant in Medical Microbiology, University Malaya Medical Centre, Kuala Lumpur, Malaysia. He completed his MBBS in University of Queensland, Australia; Ph.D. in University of Glasgow, Scotland, United Kingdom and DTM&H from London School of Hygiene & Tropical Medicine, London. He is the Laboratory Coordinator of Microbiology Diagnostic Laboratory with special expertise in Molecular and Genomic diagnostics. He has published many papers in reputed journals; his research interests include Clinical Mycology especially in dematiaceous fungi of clinical importance, the impacts of EPI and molecular epidemiology of HBV infection in Malaysia.

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