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INHIBITORS OF THE GLYOXYLATE CYCLE ENZYME ICL1 IN *Candida albicans* FOR POTENTIAL USE AS ANTIFUNGAL AGENTS

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Candida albicans is an opportunistic pathogen that causes candidiasis in humans. In recent years, metabolic pathways in *C. albicans* have been explored as potential antifungal targets to treat candidiasis. The glyoxylate cycle, which enables *C. albicans* to survive in nutrient-limited host niches and its Key enzymes (e.g., isocitrate lyase (ICL1), are particularly attractive antifungal targets for *C. albicans*. In this study, we used a new screening approach that better reflects the physiological environment that *C. albicans* cells experience during infection to identify potential inhibitors of ICL. Three compounds (caffeic acid (CAFF), rosmarinic acid (ROS), and apigenin (API)) were found to have antifungal activity against *C. albicans* when tested under glucose-depleted conditions. We further confirmed the inhibitory potential of these compounds against ICL using the ICL enzyme assay. Lastly, we assessed the bioavailability and toxicity of these compounds using Lipinski's rule of-five and ADMET analysis.

Biography

Doblin Sandai obtained his PhD in Medical Sciences; Molecular Medical Mycology at the Institute of Medical Sciences, University of Aberdeen, Scotland, United Kingdom in 2011. He is a senior lecturer in Infectomics Cluster, Advanced Medical and Dental Universiti Sains Malaysia Bertam, Penang. He teaches the subjects such as Fungus Infection Related to Organ and Tissue Transplantation, Biological Insults on Cells; Mycology, and Host Defenses in Oral Cavity for postgraduate students in MSc (Mixed mode), Master of Medicine (Medical Specialization) and MSc (Dentistry) program. He is also supervising postgraduate full research PhD and MSc candidates in research related to the molecular pathogenicity of *Candida albicans*, diagnostic testing of natural products, enhancing the resistant strains of *Candida* species to the anti-fungal drug treatment. He has published more than 20 papers, book and book in a chapter in a variety of local and international journals.

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