
POSTER COMMUNICATIONS

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Exploring bioinformatics tools to characterize a new regulator of *Candida glabrata* biofilm matrix

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Candida glabrata is a clinically relevant human pathogen with ability to form high recalcitrant biofilms, which produce an extracellular matrix with suggestive virulent and protective roles. Thus, the elucidation of the matrix composition and regulation is crucial to disclose the matrix role in *C. glabrata* pathogenesis. As such, this study aimed to characterize, with various bioinformatics tools, a new *C. glabrata* biofilm matrix regulator identified by us, the transcription factor Zap1. For that, genes and matrix proteins targeted by Zap1 were firstly assessed through microarrays and LC-MS/MS analyses, respectively, using *C. glabrata* mutant strains. Then, Zap1 targets were analyzed with various bioinformatics tools and databases including: a) functional distribution using FungiFun and FunCat; b) predicted phenotype and Gene Ontology (GO) using Candida Genome Database; c) molecular interaction using STRING and Cytoscape; d) orthology using PathoYeast; e) predictive secretory nature using Fungal Secretome Database and Fungal Secretome KnowledgeBase. The bioinformatics analyses suggested that Zap1 is a complex regulator of *C. glabrata* biofilm matrix, inducing and repressing various genes/matrix proteins involved in glucan metabolism and transport functions, including transferases and hydrolases with potential role in the delivery and organization of matrix components. Additionally, the bioinformatics analyses also suggested that Zap1 may be involved in relevant roles such as energy generation, adhesion, virulence, antifungal resistance, host immunity evasion and modulation of extracellular vesicles. Overall, this study, using a variety of bioinformatics tools, revealed that Zap1 is a relevant regulator of *C. glabrata* biofilm matrix and suggests that it may be an interesting target for the development of novel therapeutics to fight the complicated infections caused by *C. glabrata* biofilms.