Ph.D. THESIS

ESTABLISHMENT AND EXTENSIVE INVESTIGATION OF AN OVEREXPRESSION MUTANT COLLECTION IN OPPORTUNIST HUMAN PATHOGENIC *CANDIDA PARAPSILOSIS*

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2022

Summary

- In our work, we created a mutant library that overexpresses the products of 37 different genes. Each mutant was characterized by focusing on its properties involved in virulence.

- In the case of the following five genes – CPAR2_107240^{OE}; CPAR2_108840^{OE}; CPAR2_302400^{OE}; CPAR2_406400^{OE}; CPAR2_602820^{OE} – have been shown for the first time to be important in the virulence of *C. parapsilosis*, presumably their role in the regulation of biofilm formation and host-pathogen interaction.

- In the case of the following three genes – CPAR2_109520^{OE}; CPAR2_200040^{OE}; CPAR2_500180^{OE} – we confirmed their importance in the regulation of stress tolerance and host-pathogen interaction.

- For the first time in our work, the functions of genes involved in the virulence of *C. parapsilosis* were identified applying the gene overexpression method. Our results highlighted that a gene overexpression approach may be an effective method to study the function of individual genes.