




# Competition of SARS-COV-2 and *Candida albicans* on Angiotensin-Converting Enzyme 2 Receptor in COVID-19 Patients' Tongue

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## ABSTRACT

**Background and Aim:** Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) takes advantage of the mouth and nose mucosal cells' receptors to attach and make its way towards the lower respiratory tract. Researchers have not yet addressed the correlation of this virus with normal flora of oral cavity. *Candida albicans* (*C. albicans*) is one of the normal flora that occupies oral cavity and it is found to serve as a trap for some viruses. This study aimed to investigate the role of candida biofilm in the tongue of COVID-19 patients for protection against severity of the disease through the coverage of tongue ACE2 receptors.

**Materials and Methods:** A group of 56 patients called "Together to fight COVID-19" was formed through social media. The COVID-19 test results, hematological tests, and tongues photographs before and during the treatment were collected and evaluated. Data were analyzed by SPSS.

**Results:** Among the 56 patients who had tongue check-up for the presence of cheese-like coating of candida, 55 patients (83.3%) were positive even for the Robert Harrison's simple Candida home test. Among them, 90% were mild with COVID-19 infection, they recovered within 10 days. Other 10% were moderate to severe, recovered in 10-20 days. Tongue images observation identified red spots and enlarged papillae within the white layer.

**Conclusion:** Overall, a correlation was detected between the clinical phenotypes of SARS-COV-2 and the presence of *C. albicans* in the tongue of the patients. These data provide a link between SARS-COV-2 severity and *Candida albicans* biofilm.

**Keywords:** ACE2 Receptor, *Candida albicans*, COVID-19, SARS-COV-2, Tongue Microbiota

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