

ANTIMICROBIAL ACTIVITY OF CERVICAL *LACTOBACILLUS* ISOLATES AGAINST *CANDIDA GLABRATA* (*C. GLABRATA*)

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Candida glabrata (*C. glabrata*) is an opportunistic pathogen associated with urogenital infections and antifungal resistance. Its persistence in the vaginal environment may be influenced by the composition of the local microbiota, particularly *Lactobacillus* species, which also makes treatment complicated and recurrent infections such as Human Papillomavirus (HPV) common.

To examine whether cervical *Lactobacillus* species may suppress *C. glabrata*, cervical swabs from 400 women were cultured on solid MRS agar, comprising both HPV-positive and HPV-negative groups. Isolates were selected based on morphology, Gram staining, and catalase activity. In total, 235 presumptive lactobacilli were recovered.

The antimicrobial activity of these test-strains was evaluated using the deferred antagonism method. Isolates were inoculated on MRS agar and incubated for 48 hours at 37°C. Then, the samples were exposed to chloroform vapor for 5 minutes and the surface was overlaid with MRS agar containing the indicator pathogen – *C. glabrata*. Zones

of inhibition were measured after 24 hours and categorized as no activity (≤ 1.0 mm), low (1.1–4.9 mm), medium (5.0–8.9 mm), or high (≥ 9.0 mm). Several *Lactobacillus* isolates displayed clear inhibitory effects on *C. glabrata*, with additional strong antagonism towards *Staphylococcus aureus* (*S. aureus*) and *Escherichia coli* (*E. coli*). To be more precise, 4 test-strains exhibited low activity, 8 demonstrated moderate activity and 3 showed a high level of activity against *Candida glabrata*.

These findings suggest that cervical lactobacilli may provide protection against *C. glabrata* and other opportunistic pathogens, potentially reducing urogenital infection risks and developing antifungal treatments. The author gratefully acknowledges the Laboratory of Human Microbiome and Longevity as well as laboratory mentors for providing experimental materials and technical support.

Keywords: antimicrobial activity, method of deferred antagonism, opportunistic pathogen, catalase activity, inhibition zone.