



Beneficial effects of *Lactobacillus sp.* against *Streptococcus mutans*

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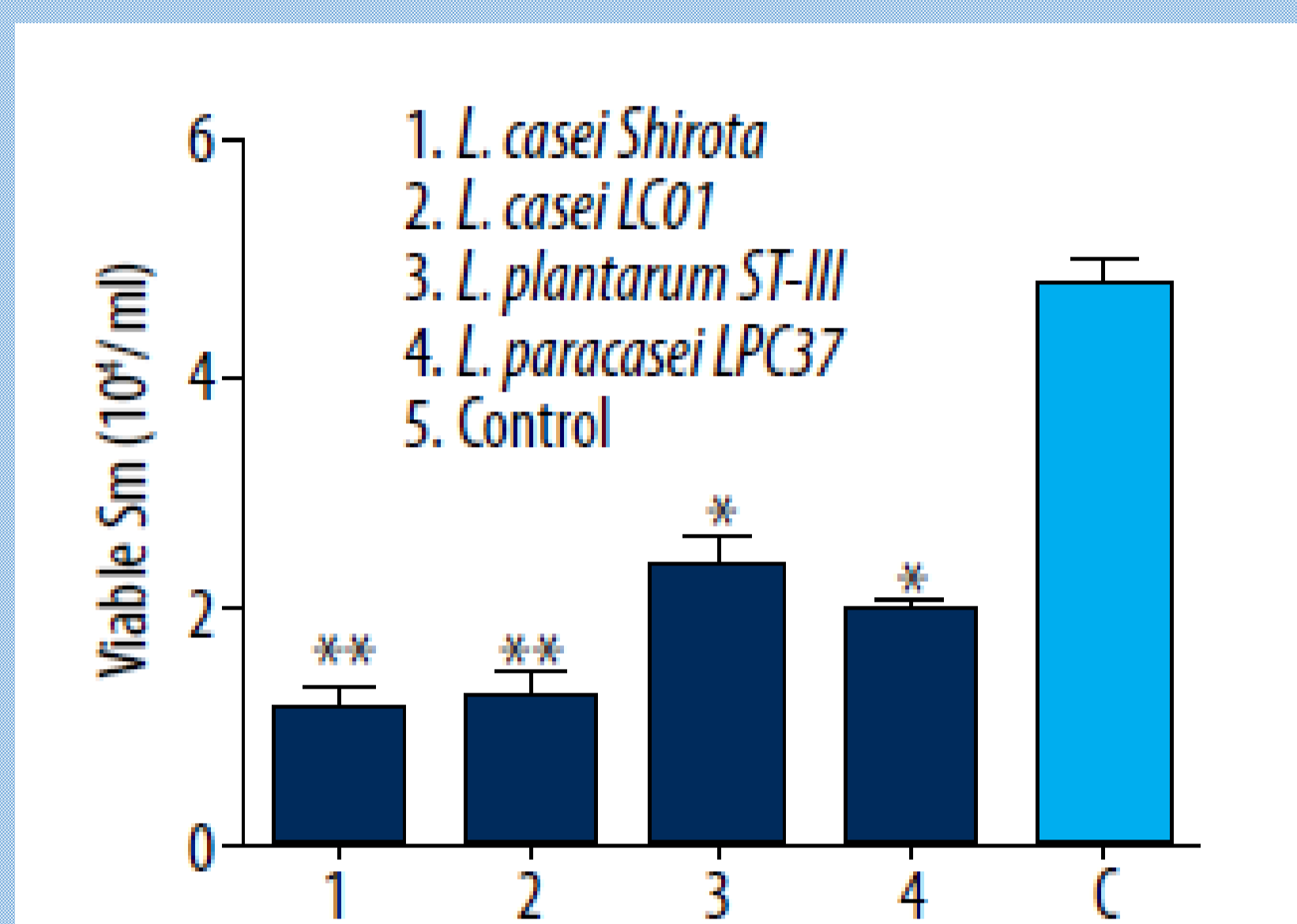
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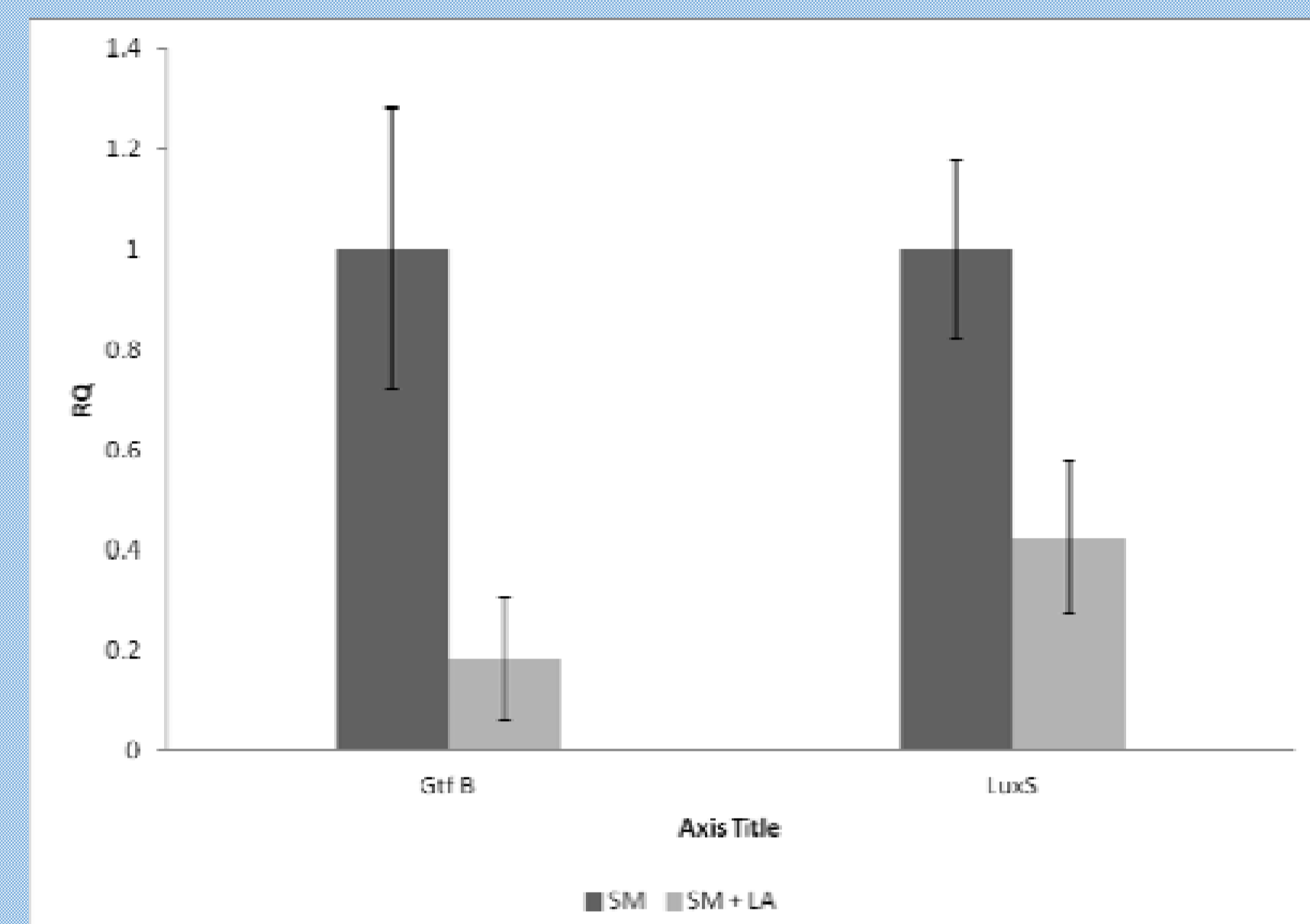


INTRODUCTION

Probiotics are known for their beneficial effects to health and their action is often linked to the GI health. Oral health is owed to the ecological balance in the oral cavity, still considering the pathogen *Streptococcus mutans* primarily responsible for initiating dental caries and tooth decay, as well as periodontal disease. The main goal of this research is to examine the reported positive effect of *Lactobacillus* against oral diseases, caused by *S. mutans*.



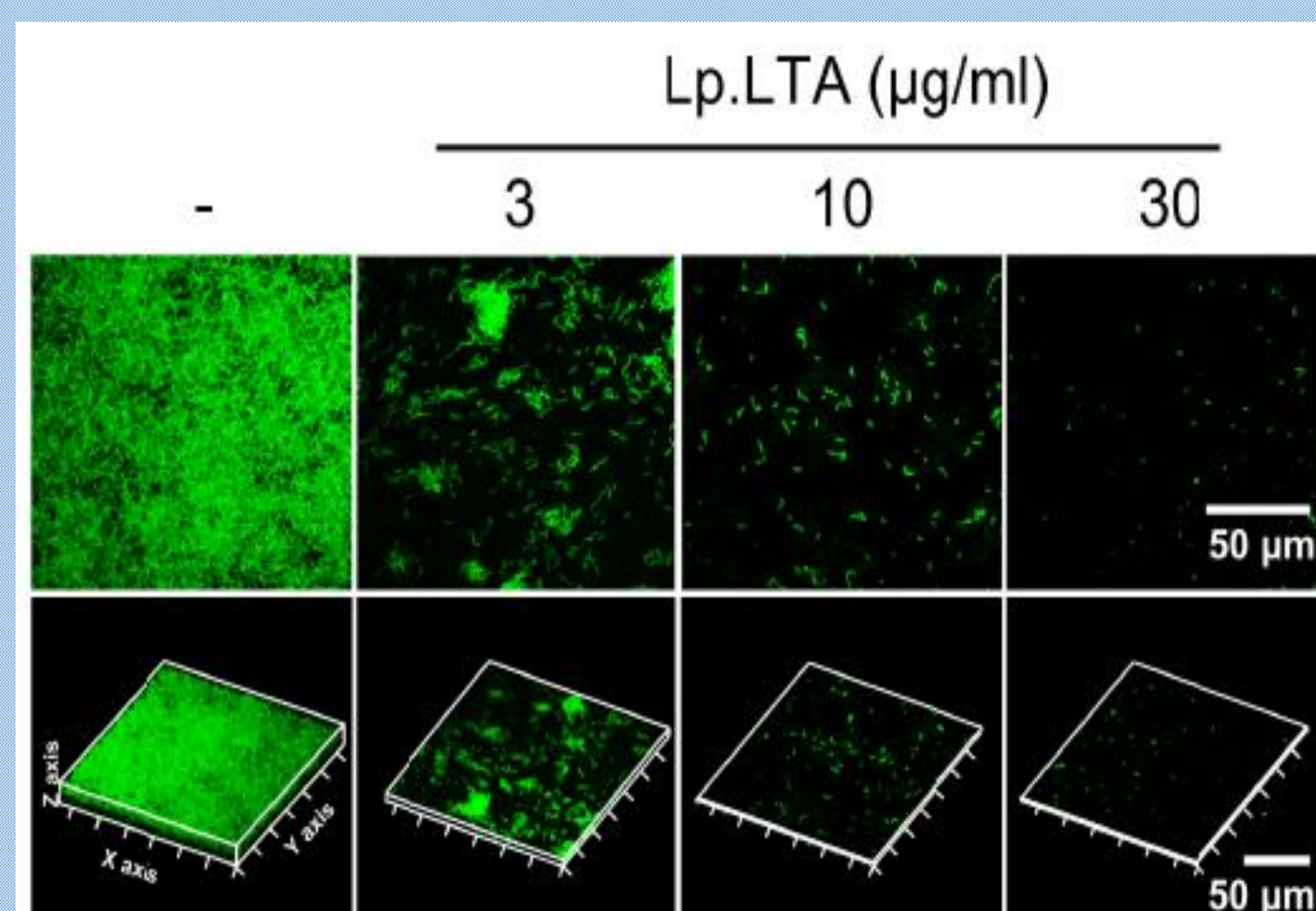
Xiaolong Lin et al., 2017 Effect of Probiotic Lactobacilli on the Growth of *Streptococcus Mutans* and Multispecies Biofilms Isolated from Children with Active Caries. Med Sci Monit, 23: 4175-4181



Ayaz Ahmed et al., 2014 Effect of *Lactobacillus* species on *Streptococcus mutans* Biofilm Formation Pakistan journal of pharmaceutical sciences, Vol.27, No.5 pp.1523-1528

The real time PCR of the biofilm showed that in the presence of four *Lactobacillus* strains the numbers of MS, *Streptococcus spp*, *S. sanguinis* and total bacteria in the mixed biofilm cultures are significantly reduced compared with the control group

The *GtfB* and *LuxS* genes of *S. mutans* are responsible for formation and maturation of biofilm. Expression of *GtfB* and *LuxS* genes were quantified using real time PCR. In the presence of *L. acidophilus* the 80% expression of *GtfB* was significantly reduced as compared to internal control. *L. acidophilus* also reduced 56% of the *LuxS* gene expression



Ki Bum Ahn et al., 2018 *Lactobacillus plantarum* lipoteichoic acid inhibits biofilm formation of *Streptococcus Mutans*. PLoS ONE 13(2)

Lipoteichoic acid (Lp.LTA) from *Lactobacillus plantarum* inhibited the biofilm formation of *S. mutans* using confocal laser scanning microscopy and scanning electron microscopy. *S. mutans* biofilm formation and aggregation were inhibited by Lp.LTA in a dose-dependent manner

CONCLUSION

Various microorganisms are associated with the initiation and progression of dental caries, among which *S. mutans* is the most prominent caries causing agent. In contrast, probiotic bacteria have been used to modify microfloral ecosystems, and have already shown some success as a therapeutic for oral diseases. The results in this review demonstrate that live probiotics are capable of inhibiting the growth of *S. mutans*, and thereby reduce the level of caries.