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Letter to the Editor

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Probiotics in Ophthalmology

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Dear Editor;

In recent years, increasing antibiotic resistance has made infections difficult to treat not only in ophthalmology but also in all medical branches. One of the most important reasons for antibiotic resistance is biofilms(1). The increasing resistance to antibiotics is reaching alarming levels. New antimicrobial agents need to be developed. We think that it would be valuable to consider probiotics at this stage.

Currently, there have been increasing studies on the antimicrobial and antibiofilm properties of probiotics and parabiotics. In one of the recent studies from Taiwan, 18 heat-killed probiotics and their supernatants were investigated for biofilms of resistant uropathogens. In this study, it was seen that parabiotics were effective against microbial agents at different rates.(2) In another study from Switzerland, the antibiofilm effects of cell-free supernatants of *Lactiplantibacillus plantarum* and *Lacticaseibacillus rhamnosus* against *Streptoccocus pyogenes* were investigated. In this study, it was determined that probiotics produced glycolipid bioactive compounds and these reduced the viability of *S. pyogenes* both in planktonic and in biofilm environments.(3) In another study from India, 15 lactobacilli obtained from fermented beverages consumed by a local ethnic group in North India and having antimicrobial and antibiofilm properties against *Enterococcus faecium*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter baumannii*, *Pseudomonas aeruginosa*, and *Enterobacter aerogenes* were investigated for their probiotic properties. *Lactiplantibacillus plantarum* and *Lacticaseibacillus paracasei* obtained from fermented rice-based beverages and *Lactiplantibacillus plantaru*m and *Lacticaseibacillus paracasei* obtained from a local curd type showed antimicrobial and probiotic properties (4).Similar studies are increasing day by day, but these studies in the field of ophthalmology are limited. In a study conducted in Italy in 2008, 7 patients with vernal keratoconjunctivitis were given probiotic *Lactobacilus acidophilus* drops for 1 month. It was determined that this application caused the symptoms of vernal keratoconjunctivitis to regress (5). In our study, it was observed that probiotic lactic acid bacteria have antimicrobial effects against bacteria isolated from the surface of the eye (6).

The increase in studies conducted with probiotics in the field of ophthalmology in the coming years suggests that it will bring innovative approaches to ocular infection treatments.

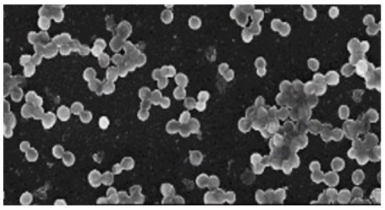

Figure 1. Biofilm formation of bacteria that isolated from ocular surface

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