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Antibacterial effect of ethylacetate fraction of *Orostachys japonicus* on *Enterococcus faecalis* causing Endophthalmitis

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Endophthalmitis is a disease that causes ocular inflammation and has a catastrophic effect on eyesight. Recent studies show that *Enterococcus faecalis* is rapidly increasing causative bacterium of endophthalmitis. It is predicted that the increased endophthalmitis by *E. faecalis* is presumable due to the high resistance of *E. faecalis* to moxifloxacin (MFX), which is a common antibiotic used for eye drop. Because of the need for therapeutic agents to overcome this problem, this study sought to explore the feasibility of developing a combination therapy using *Orostachys japonicus*.

The ethylacetate fraction of *O. japonicus* (OJA) used in this study. Antimicrobial activity was tested 13 *E. faecalis* strains including one *E. faecalis* standard strain, eight clinically isolated *E. faecalis* strains and four quinolone resistant *E. faecalis* strains using CLSI antibiotic susceptibility test method.

Minimal Inhibitory Concentration (MIC) of OJA was confirmed to be 500 ㎍ / ㎖ for all 13 strains. Then we tested for the synergistic effect of OJA to MFX using checkboard test method. The MIC of MFX was 0.25 ㎍ / ㎖ for the standard strain and 8 for the clinical isolates, and 16 ~ 64 ㎍ / ㎖ for the quinolone - resistant strains. When OJA was mixed with MFX, no synergistic effect was observed in all strains, but the antibacterial activity of OJA remained unchanged.

Most ocular other strains can be removed by MFX except the MFX resistant *E. faecalis*, which can be removed by OJA in combination therapy. Therefore, OJA can be a potential candidate for the combined treatment endophthalmitis.

Key words: *Orostachys japonicus*, *Enterococcus faecalis*, Endophthalmitis

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