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# Study of *cylA* and *esp* gene expression in *Enterococcus faecalis* culture in microfluidic conditions

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**Background:** *Enterococcus faecalis* normal intestinal flora of humans and one of the causes of nosocomial infections that cause urinary tract infections, endocarditis and menangeditise the ability to form biofilm on surfaces such as catheters, venous catheters artificial heart valves and ocular lenses, the *ESP* and *cylA* factors .The purpose of this study was to evaluate the ability of the bacteria in the biofilm formation and detection of virulence factors in clinical isolates of enterococci surface protein and cytolysin and Study of *cyla* and *esp* gene expression in *Enterococcus faecalis* culture in microfluidic conditions

**Material and methods:** A total of 54 clinical *E. faecalis* isolates was collected from hospitals in Ahvaz Ability of biofilm formation was measured by Microtiter plate assay. All isolates were then examined for presence of the *ESP*and *cylA* genes . and Study of *cyla* and *esp* gene expression in *Enterococcus faecalis* culture in microfluidic conditions by RealTimePCR method.

**Results:** The microtiter plate assay results showed that attachment abilities in 4 (7%) strains were strong, oundes.:in 10 (26%) strains were moderate, and in 14 (56%) strains were weak and 5 (11%) strains didn't form biofilm. The prevalence of the *ESP* and *cylA* genes identified by PCR among clinical isolated strains, and the results were 83% and 70.%, respectively. Gene expression in cultured microfluidic system compared with conventional cultivation increased in the laboratory

**Conclusion:** Microfluidic system by controlling the hydrodynamic conditions, chemically stable gradiant can be effective in biofilm formation. And positive or negative have effects on biofilm bacteria and the expression of virulence genes. The pattern of gene expression different in environmental conditions. Increased expression of virulence genes in simulated body microfluidic system symptoms increase biofilm formation bacteria into the body, compared to what we are seeing in vitro.

**Notes:**