

Investigation of antimicrobial effect of probiotic bacteria isolated some traditional Guilan yoghurts on clinical isolates of Uropathogenic E. coli

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Introduction: Increasing antibiotic resistance of pathogenic bacteria has necessitated the use of other non-chemical compounds including probiotics especially *Lactobacillus* as an alternative to antibiotics. The aim of the present study was to investigate the antimicrobial effect of *Lactobacillus* isolated some traditional guilan yogurts on clinical isolates of Uropathogenic *Escherichia coli*. **methods:** In this study, 30 clinical isolates of Gram-negative bacterium as a Uropathogenic *Escherichia coli* were collected one of the public polyclinics in Rasht and transferred to Faculty Laboratory and evaluated by various biochemical tests. Then, the antibiotic susceptibility of *Escherichia coli* isolates was determined according to CLSI standard method. Then, 18 traditional yogurt samples were collected different parts of Guilan province in sterile containers and transported to the laboratory near the ice. After enrichment and dilution of yoghurt, MRS agar was cultured and purified. Then, the susceptibility of *Escherichia coli* isolates to the *Lactobacillus* spp. supernatant was evaluated by two methods of well diffusion and disk diffusion. **Results:** Of the 30 clinical isolates, 14 were confirmed as *Escherichia coli*. The most susceptible *Escherichia coli* isolates were imipenem (100%), chloramphenicol (84.6%) and gentamicin (70%) and the highest resistance to ceftriaxone, cefazolin and ciprofloxacin (53.8%), respectively. *Lactobacillus* spp. was isolated 5 samples of yogurt collected and purified. The supernatant of *Lactobacillus* spp. No. 16 (61.53%) and 18 (53.84%) showed the highest inhibitory effect, respectively, on disk diffusion method on *Escherichia coli* isolates. In addition, the highest inhibitory effect was observed on *Lactobacillus* spp. number 15 (51.53%) and 12 (46.15%), respectively. In both methods the least antimicrobial effect was related to *Lactobacillus* spp. No. 14. **Conclusion:** *Lactobacillus* strains isolated traditional Guilan yogurt have a relatively

good antibacterial effect and can therefore be used simultaneously with antibiotics in the treatment of urinary tract infections caused by Euro-pathogenic Escherichia coli.

Keywords: Euro-pathogenic Escherichia coli, Lactobacillus spp., Traditional Yogurt, Guilan

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