

## عنوان مقاله:

In vitro and in vivo expression of virulence genes in *Trueperella pyogenes* based on a mouse model

## محل انتشار:

بیستمین کنگره بین المللی میکروب شناسی ایران (سال: 1398)

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## خلاصه مقاله:

**Introduction and Objectives:** *Trueperella pyogenes* is an important opportunistic pathogen causing a number of pyogenic infections in ruminants and other animals. This microorganism expresses several extracellular virulence proteins that contribute to its pathogenic potential. Co-infection with other bacterial species such as *Escherichia coli* or *Fusobacterium necrophorum* increases the persistence of bacteria and the severity of the diseases. The aim of this study was expression of some pathogenesis genes including *plo*, *nanH*, *fimA* and *cbpA* and co-culturing of *S. dysgalactiae*, *E. coli*, *S. aureus*, *F. necrophorum* and *L. plantarum* in experimental and mice models in clinical samples collected from cattle with metritis, mastitis and skin abscess symptoms. **Materials and Methods:** Nine isolates with outstanding clinical symptoms including 3 metritis, 3 mastitis and 3 cutaneous abscess isolates with all virulence encoding genes were separated and cultured in TSB broth for 48 hours reaching  $0.5 \times 10^8$  bacterial count forwarding RNA extraction. In the next step, co-culturing of *S. dysgalactiae*, *E. coli*, *S. aureus*, *F. necrophorum* and *L. plantarum* strains for 48 hours reaching  $0.5 \times 10^8$  bacterial count forwarding RNA extraction were done separately to the *T. pyogenes* isolates.  $0.5 \times 10^8$  CFU/mL of *T. pyogenes* co-culturing with *S. dysgalactiae*, *E. coli*, *S. aureus*, *F. necrophorum* and *L. plantarum* strains was formulated, injected and 48-hour intraperitoneal incubated by 0.5-mL volume into the mice categorized in 6 separately groups. So, after anesthesia and intraperitoneal cutting side of the experimental mice, liver, heart, spleen and intraperitoneal fluid of mice were collected in sterilized containers following tissue homogenization and RNA extraction according to the Kit manufacturer instruction. **Results:** By Livac formula, *plo*, *NanH*, *cbpA* and *fimA* genes expression observed 17, 8, 15 and 16 times more in metritis, mastitis and cutaneous abscess samples respectively. Change in *plo*, *nanH*, *fimA* and *cbpA* genes expression in co-culture in comparison with pure-culture of *T. pyogenes* in mice model indicated that, *E. coli* and *F. necrophorum* lead to increase and *L. plantarum* contributes to decrease in genes expression. There is not any significant increase observed in genes expression in co-culturing of *T. pyogenes* with *S. dysgalactiae* and *S. aureus*. Co-operative functions of this bacterium with other pathogens leads to enhance the expression of pathogenesis gene consequently increasing in the

... symptoms of the disease. Conclusion: Antagonistic effect of using of some functional bacte

## کلمات کلیدی:

*Trueperella pyogenes*, gene expression, Co- infection, Real time PCR

## لینک ثابت مقاله در پایگاه سیویلیکا:

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