Title: URINARY TRACT INFECTION: *in vitro* ACTIVITY OF ENROFLOXACIN AGAINST *Escherichia coli* ISOLATED FROM DOGS AND CATS

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Abstract:

Urinary tract infection results from a commitment of the immune system of animals and humans associated with the invasion of pathogenic microorganisms followed by adherence, multiplication and persistence in this site. The ITU has commonly bacterial etiology, highlighting *Escherichia coli* as the main agent. Besides its virulence factors, such enterobacteria has a high potential for resistance genes transference. Urine samples were collected from 177 companion animals by catheterization, cystocentesis or spontaneous urination, in the Veterinary Hospital of the Universidade Federal Rural do Rio de Janeiro, from March 2014 to May 2015. The samples were placed in sterile recipients under refrigeration and processed within six hours in the Veterinary Bacteriology Laboratory / UFRRJ. Susceptibility assays were performed by simple disk diffusion method according to the standards of the Clinical and Laboratory Standards Institute (2013). Sixty eight samples (38.42%) presented or mixed bacterial growth yielding 81 isolates. *Escherichia coli* was the predominant pathogen in 30.86% (25/81) presenting 80.00% (20/25) of resistance against enrofloxacin. The high percentage of *E. coli* isolates enrofloxacin resistant can be explained by the indiscriminate use of this antimicrobial in veterinary practice increasing the positive selective pressure. In addition, its high potential for resistance genes transfer is of concern. These genes allow resistance by changing expression of receptors topoisomerase II and IV and reducing permeability by the action of bacterial efflux pumps. These data emphasize the importance of microbiological diagnosis for the correct identification of the etiologic agent and the implementation of an adequate treatment, representing key role in promoting public health.

Keywords: cystitis, fluoroquinolone, one health