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**The Thesis Submitted for the Degree of Doctor of professionals
(In the field of Veterinary)**

**Prevalence evaluation of *Streptococcus equi*
and *Rhodococcus equi* in nasal swabs from
horses in Golestan province by PCR
method**

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Abstract

Rhodococcus equi is a Gram-positive bacterial pathogen and the most common cause of severe pneumonia in foals less than six months of age. The pathogen is ubiquitous in the environment, lives in soil and is present in most areas where horses are kept due to its ability to multiply and grow in the digestive tract of herbivores. *Streptococcus equi* subspecies *equi* is the cause of gourme disease or strangles and is one of the most common and important infectious diseases of equidae. This disease has global spread and is contagious. *Streptococcus equi* subspecies *zooepidemicus* is considered part of the flora of the oral cavity, pharynx and respiratory tract of horses and causes respiratory disease. These three bacteria can also be transmitted to humans. The purpose of this study was to investigate the presence of the genome of *vapA* of *Rhodococcus equi* and *sodA* of *Streptococcus equi* subspecies *zooepidemicus* and *seM* of *Streptococcus equi* subspecies *equi* in horses of some cities of Golestan province of Iran using PCR. In the present study, 150 horses of Golestan province with different features were randomly selected and nasal swab samples were taken and epidemiological information of horses was obtained with the help of a questionnaire which included variables, Such as age, gender, history of illness, symptoms of illness, presence of discharge or bleeding from the nose, history of examination by a veterinarian, history of treatment, presence of a riding and training area in farm, number of people involved with horses, history of participation in a group activity, the entry of a new horse into the herd, the common use of containers, the common use of riding and restraint equipment and the legal status of the stallion of the herd, which were considered as independent variables, and their effect on the level of contamination using the Pearson's Chi-squared test was investigated. The DNA of the samples was extracted and the bacteria *Rhodococcus equi*, *Streptococcus equi* and *Streptococcus zooepidemicus* were identified by PCR. In the present study, out of a total of 150 examined horses, infection with *Rhodococcus equi*, *Streptococcus equi* and *Streptococcus zooepidemicus* was found in 43 cases (28.7%), 23 cases (15.3%) and 54 cases (36%) of the horses, respectively. This study showed that the prevalence of these bacteria in Golestan province is significant and requires appropriate programs and acts to control and prevent these diseases.

Keywords: *Rhodococcus equi*, *Streptococcus equi* subspecies *equi*, *Streptococcus equi* subspecies *zooepidemicus*, Golestan, Horse, *vapA*, *seM*, *sodA*, Nasal swab