

Gene and tissue expression of fibroblast growth and transformation factors in the mare's endometrium concerning the severity of endometriosis

1. Purpose of the project

Of all the domestic animal species, mares are considered the least fertile. It is associated with disorders of the uterus, including endometriosis. It is a degeneration of the uterine mucous membrane resulting in lowered chances to get pregnant. The production of the so-called uterine milk, thus secretions of the uterine glands, which are responsible for nourishing the embryo in the first weeks of its life is noticeably decreased. This disease affects the older mares, impairing their reproductive capacity, which would be especially valuable in sport mares. Therefore, it is also a major cause of financial losses caused by subfertility. Despite meaning, neither cause nor its course is known. Because of this, there is no known prevention of the disease or successful treatment. Only profound disease understanding will contribute to the development of disease management methods. Thus, this study aims to analyze selected markers in the course of endometriosis and their comparison to the known features. We hope that we will allow for research regarding effective treatment.

2. Research description

The material used for the research will be slaughter material, the animals will not undergo any additional treatments. The obtained samples will be stained and, based on the characteristics of the mucosa, classified into the appropriate category of endometriosis, grading the severity of the disease. Then the expression of the selected markers will be assessed in the samples and the results will be compared with the results of the expression of known factors determining the severity of endometriosis. We hope that the statistical analysis will allow us to see the relationship and propose a pathway for the development of the disease.

3. Reasons for undertaking this research topic

The fertility of mares has long been a concern of both owners and veterinarians. Although the disease has been described for decades and is extremely common, especially in older mares, its cause is unknown, and no treatment has been developed. The reason for researching this topic is to solve this puzzle and contribute to the development of an effective treatment.

4. The most important expected effects

The most important expected effect is the creation of a hypothesis on the pathogenesis of endometriosis. We hope our research will be a milestone in understanding this disease, and an effective treatment for endometriosis will be proposed in the future.