



bActivate

Growth medium enabling detection of chronic subclinical uterine infections

bActivate introduction

bActivate is an innovative diagnostic tool for the detection of dormant bacterial infections in the uterus caused by **Streptococcus equi subspecies zooepidemicus (Strep. zoo)**. Latent endometritis is a common cause of infertility in mares, however the dormant state of Strep. zoo makes them difficult to detect with traditional diagnostic methods. By facilitating the detection of these hidden bacteria, bActivate allows for **effective treatment** and **improved chances of successful pregnancies** in mares that have previously struggled to conceive.



Background information

Fertility problems in mares are often linked to bacterial infections in the uterus. Mares with compromised uterine defense mechanisms frequently develop bacterial infections that may become chronic if unnoticed or left untreated, making it increasingly difficult for them to establish and maintain pregnancy. The risk of a dormant infection is particularly high (80%) in mares that are 12 years or older, have had three or more foals, have a history of uterine problems or have experienced an abortion.

The most commonly isolated bacteria from these endometritis cases are *Streptococcus equi subspecies zooepidemicus* (Strep. zoo). In the chronically infected mare Strep. zoo can establish an infection deep within the uterine lining (endometrium). Strep. zoo appears to lower its metabolic rate during chronic infection, thus complicating diagnostics and antimicrobial treatment dependent of active bacterial growth. The growth medium bActivate promotes bacterial-activation and enables detection of chronic infections associated with Strep. zoo in mares. Research conducted at Kildangan/Godolphin revealed that out of 19 problem mares barren for an average of 6.3 cycles, 89% were successfully activated with bActivate, resulting in the birth of 14 live foals the following year. This highlights the effectiveness of bActivate in treating mares with culture-negative swabs or lavages, making it an ideal solution for older problematic broodmares.

How to use bActivate

bActivate is **best used when the mare is in estrus**, activation is ideally taking place in early estrus as indicated by the presence of moderate uterine edema and the largest follicle having a size of 25 - 30 mm.

To use bActivate, follow the following steps:

- 1. Preparation:** Reconstitute the freeze-dried bActivate formulation with 10 ml of 0.9% NaCl and shake until a homogeneous solution is established.
- 2. Pre-Activation Culture:** Obtain a pre-activation uterine culture sample using either a biopsy or a low-volume lavage to improve diagnostic sensitivity and specificity.

3. Activation: Instill 10 ml of the reconstituted bActivate solution into the mare's uterus using an insemination pipette and standard insemination technique.

4. Post-Activation Culture: Obtain a post-activation uterine culture sample 48 hours after instillation.

5. Treatment: Begin appropriate antimicrobial therapy based on the results of the post-activation culture sample. Anti-inflammatory medication can help manage discomfort and inflammation if those clinical symptoms are present in the mare.



Precautions

Breeding in the same estrus cycle as the activation is not recommended due to the inflammation caused by the activation process, which can negatively impact fertility. Breeding should be postponed to the following cycle. bActivate is **to be used only in healthy mares** only demonstrating good general health and are alert and responsive at the time of uterine instillation. The uterus must be fully involuted, without any adhesions to abdominal structures and freely moveable within the abdominal cavity and without any intrauterine adhesions. If lesions are present within the myometrium or endometrium, increasing the risk of leakage from the uterus into the abdomen, bActivate should not be instilled into the uterus.

Interpretation of the results

When Strep zoo is isolated only after activation, or if bacteria are increased in numbers following activation, the mare is chronically infected and local and systemic antimicrobial therapy should be initiated. If intrauterine fluid and secretions are present uterine lavage, with or without mucolytic additives, in conjunction with ecboic treatment to help clear/clean the uterus may also be indicated. Bacterial cultures are performed both before and after activation because some mares may be culture positive for *E. coli* before activation, but only culture positive for Strep. zoo after activation. If only a post activation sample is recovered, important information related to treatment could be missed.

Product information

Active ingredient:	Bacterial growth medium
Brand:	bActivate
Target species:	Equine
Veterinary use:	To be used only by veterinarians
Storage conditions:	Store at 5°C
Packaging:	Cardboard box containing 1 x 10 ml vial
Article code:	198168-EU

References

¹ Petersen, M. R., Nielsen, J. M., Lehn-Jensen, H. and Bojesen, A. M. (2009). *Streptococcus equi subspecies zooepidemicus* resides deep in the chronically infected endometrium of mares, *Clinical Theriogenology* 1, 393-409.

² Petersen, M. R., Lu, K., Christoffersen, M., Nielsen, J. M., Troedsson, M.H.T. and Bojesen, A. M (2013). Impact of activation and subsequent antimicrobial treatment of dormant endometrial streptococci in the Thoroughbred problem mare - a descriptive field study, Abstract and Poster, Society for Theriogenology Annual Meeting, Louisville, Kentucky.

³ bActivate Demonstrates Remarkable Improvement in Fertility Rates for Thoroughbred Mares Bojesen & Petersen Biotech ApS - Copenhagen, Denmark | bActivate (<https://bactivate.eu/bactivate-demonstrates-remarkable-improvement-in-fertility-rates-for-thoroughbred-mares-bojesen-petersen-biotech-aps-copenhagen-denmark/>).