Mirtazapine as a Pre-shipping inhibitor of Bovine Respiratory Disease (BRD)

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Technology description

Summary:
Iowa State University researchers have identified an alternative treatment for Bovine Respiratory Disease using the existing drug Mirtazapine as an inhibitor for the disease.
Description:
Costing at around $1 billion per year, the Bovine Respiratory Disease (BRD) is the most expensive and devastating beef cattle diseases in the United States. BRD includes any disease that affects the cattle's lower respiratory tract / lungs or the upper respiratory tract which occurs when calves are stressed during the transportation from the cow-calf site to the feedlot. Being the most common disease impacting cattle in the United States, BRD affects about 10% of the more than 6 million calves transported each year. Because of this, over nine million doses of antibiotics are used annually to prevent these substantial deaths caused by BRD. Researchers at ISU have presented an alternative way to treat this disease in order to lower the excessive antibiotics used.
Mirtazapine is an anti-depressant and anti-anxiolytic off-patent drug, which also has appetite-stimulating properties that is often used to treat anorectic cats. Other uses of the drug include treating behavioral problems like separation anxiety, urine spraying and insomnia in cats and dogs. The invention by the researchers is the use of Mirtazapine as an inhibitor of BRD. From preliminary testing, it was shown that Mirtazapine reduced morbidity and mortality in calves vs. in untreated feedstock cows.
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Stage1.png

Application area

Animal Health and Veterinary Sciences
Intellectual Property:
Tangible Material

Advantages

• Cost effective treatment of BRD

• Effectively reduces morbidity and mortality in cattle treated
• Compatible with existing uses of the drug

Institution

Iowa State University