

## Jaguar Animal Health Files Two Provisional Patent Applications, Deepening its Pipeline of Proprietary Gastrointestinal Products for Animals

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One Application Covers the Combined Use of Croton lechleri-derived Products and Rifaximin to Address Diarrhea Symptoms

The Second is for the Prebiotic Benefit of Crofelemer and Croton lechleri-derived Products in Dairy Calves and Other Animals

San Francisco, CA (March 4, 2015): Jaguar Animal Health, Inc. ("Jaguar"), an animal health company focused on developing and commercializing first-in-class gastrointestinal products for companion and production animals, announced today that it recently filed two provisional patent applications with the United States Patent and Trademark Office involving crofelemer, an active pharmaceutical ingredient, and other anti-secretory products derived from the Croton lechleri tree. One application covers the novel use of a combination of such anti-secretory agents and the antimicrobial agent rifaximin to effectively treat symptoms associated with diarrhea of various causes in afflicted animals, and the second is for the beneficial prebiotic effect of the Croton lechleri-derived products in dairy calves and other animals.

A wide array of infectious and pathogenic agents including bacteria, viruses, and parasites cause diarrhea in animals, particularly in domesticated livestock animals associated with farming, food, and labor. Secretory diarrheas, also called watery diarrheas, are a major source of illness and mortality in both young and adult animals and are characterized by the loss of fluid and electrolytes through the intestinal tract, leading to serious and often life-threatening dehydration.

The provisional patent application discloses effectiveness for an orally-administered combination of crofelemer and rifaximin, the former of which has recently shown statistically significant results to be superior to placebo in treating general watery diarrhea in dogs and is FDA-approved for human use as an antidiarrheal indicated for the symptomatic relief of noninfectious diarrhea in adult patients with HIV/AIDS on antiretroviral therapy. The combination of a botanical extract derived from the Croton lechleri tree, which is commercialized for the normalization of water flow across the gut lining of neonate dairy calves in products such as Neonorm™ Calf, and rifaximin, which is approved in 33 countries for gastrointestinal disorders in humans, is disclosed to treat watery diarrhea from various causes, including infectious and environmental factors, that affects young and adult animals. All Croton lecheri-derived products and product candidates maintain minimal-to-no risk of systemic dissemination or tissue residue, and remain substantially localized in the enteric environment of the gut, where their anti-secretory effects are active. The addition of rifaximin allows localized enteric targeting of diarrhea-causing pathogens in the gastrointestinal tract of animals, resulting in potentially a synergistic effect for the relief of watery diarrhea.

The second provisional patent application describes the prebiotic composition of Croton lecheri-derived agents, which will promote the establishment or growth of beneficial microorganisms in the gut of dairy calves and other animals to improve digestive health, treat and prevent diarrheal disease and other intestinal disease, increase weight gain, improve vitality, and reduce mortality and morbidity. The prebiotic composition may be administered to any animal, particularly grazing animals and livestock, such as cows, sheep, goats, pigs, bison and buffalo, and fowl, as well as to racing animals such as horses and camels, and to companion animals such as dogs, cats, rabbits, rodents and exotic pets.

"Jaguar is committed to helping animals maintain healthy guts and to generating a deep pipeline of treatment and other options to address symptoms of gastrointestinal diseases. Our lead products are based on the beneficial effects of a first-in-class proprietary and natural anti-secretory mechanism of action, which can mitigate the devastating dehydration associated with watery diarrhea. These provisional patent filings include the potential development of treatments for animals that might require a combination of anti-secretory and antimicrobial therapies," stated Jaguar CEO Lisa Conte. "The economic and humane impacts of diarrhea and its related conditions on afflicted animals, their handlers and caregivers are great—creating a compelling need for alternative, safe, and medically effective, as well as cost effective, treatments and remedies for diarrhea and its associated symptoms."

## About Jaguar Animal Health, Inc.

Jaguar Animal Health, Inc. is an animal health company focused on developing and commercializing first-in-class gastrointestinal products for companion and production animals. Canalevia<sup>™</sup> is Jaguar's lead prescription drug product candidate for the treatment of various forms of watery diarrhea in dogs. Neonorm<sup>™</sup> Calf is the company's lead non-prescription product. Canalevia is a canine-specific formulation of crofelemer, an active pharmaceutical ingredient isolated and purified from the Croton lechleri tree, which is sustainably harvested. Neonorm is a standardized botanical extract derived from the Croton lechleri tree. Canalevia and Neonorm are distinct products that act at the same last step in a physiological pathway generally present in mammals. Jaguar has filed nine Investigational New Animal Drug applications, or INADs, with the FDA and intends to develop species-specific formulations of Neonorm in six additional target species, and formulations of Canalevia for cats, horses and dogs.

For more information, please visit www.jaguaranimalhealth.com.

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