**Combined Effects of Antibiotics and Nutrients in Dog Biscuits for Treating Bacterial Infections**

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**ABSTRACT**

**BACKGROUND**

Nowadays, millions of households own a dog and hence there has been a rise in demand for sophisticated pet food industry. But while dogs may bring a wide range of health benefits, they are susceptible to wide range of bacterial infections that also affects human health. Providing antibacterial medications to treat such bacterial infections can be a real challenge for both dogs and owners. In most instances, administration of ongoing antibiotics via the oral route using tablets or capsules is a challenging task owing to the difficulties of making an animal swallow pills. A major contributor to antibiotic resistance is failure to finish an entire prescription and doubling a dose to make up for missed doses, which creates side effects. Although dogs have limited freedom to select their own diets, they are mostly awarded with biscuits. Keeping the above in mind, the aim of the project is to obtain novel functional biscuits for pets (specifically, dogs) with antibiotics to treat common dog-related bacterial infections.

**OBJECTIVES**

The project focus on the development of antibiotic-loaded nutritional biscuits to administer antibiotics to dogs in a convenient manner using nutritious elements including meat by-products. The incorporation of antibacterial medicine could turn these biscuits into a functional food, primarily targeting the dog nutrition needs using optimum concentration of high-quality proteins, fat, mineral substances and vitamins required for dog metabolism. Thus, the invention relates to a method for preparing nutritious dog biscuits with antibacterial medications and specific ingredient sensitivities. Furthermore, the use of plant-derived edible nanoparticles to encapsulate an antibiotic is expected to alter the fate and toxicity of antibiotics, as well as the risk for developing antibiotic resistance.

**CONCLUSION**

The proposed biscuits could fundamentally fulfill the self-physiological nutritional requirements of dogs and simultaneously treat some common bacterial infections. In addition to the antibacterial action, the cytotoxicity of antibiotics may provide a scientific basis for making a decision on the biocompatibility of the dog biscuits to be used.