

Protect and Prevent: Enteric-Coated Lactoferrin Particles for Enhanced Digestive Defense

Field of use

Nutrition, pharmacy

Current state of technology

TRL 7

Intellectual property

Pending, PCT

Developed by

University of Ljubljana,
Faculty of Pharmacy
The Department of
Pharmaceutical
Technology

Reference

UL20210787010P

Contact

Knowledge Transfer
Office

Phone: +386 1 2418 533

E-mail: ipr@uni-lj.si
ppz.uni-lj.si

Background

Food poisonings are a common occurrence when traveling in countries with lower hygiene standards. These incidents can ruin family or business trips, leading to negative experiences and potential business consequences. Traditionally, food poisonings are treated using antibiotics and activated charcoal. However, these approaches lack selectivity. Antibiotics not only target harmful microorganisms but also affect the beneficial ones essential for intestinal health. Excessive antibiotic use can result in constipation and the development of antibiotic-resistant strains. To address these limitations, a natural defense mechanism exists in the form of lactoferrin, a protein capable of selectively inhibiting the growth of pathogenic microorganisms. However, lactoferrin faces challenges, such as low concentration in the intestinal tract which limits its effectiveness when food poisoning strikes. Therefore, taking lactoferrin as a preventive measure during travel can help mitigate the effects of food poisoning or even prevent it altogether.

Description of invention

The present invention introduces enteric-coated particles containing lactoferrin as a food supplement. Lactoferrin, known for inhibiting bacterial growth, faces degradation in the stomach's acidic environment when taken orally. To address this, the particles have a protective coating, ensuring lactoferrin's stability. Encased in a capsule, they can be taken once daily during periods of anticipated food poisoning risk, such as travel. This innovative approach enhances lactoferrin's delivery and effectiveness, providing a convenient preventive measure against food poisoning.

Main advantages

- **Microbiota benefits:** The high dose of lactoferrin in the formulation selectively inhibits pathogenic microorganisms, promoting a healthy intestinal microbiota.
- **Safe intestinal delivery:** The protective layer ensures the safe delivery of the active ingredient, allowing targeted release in the intestines.
- **Wide market potential:** The invention is suitable for use before and during planned travel to countries with a high risk of digestive problems or lower hygiene standards. It has significant potential, especially among travelers from more developed countries.
- **Convenient dosage form:** The pellet-filled capsules provide a user-friendly route of administration, allowing for easy intake with or without food.
- **High efficiency:** The manufacturing process achieves efficiencies of over 90%, even on a small scale, making it a cost-effective production method.
- **Extended shelf life:** The protective layer prevents degradation and maintains the formulation's potency, resulting in an extended shelf life.

