

Bacillus subtilis strain with strong inhibition of enteropathogenic and foodborne pathogenic bacteria

Fields of use

Health.
Veterinary Health.
Poultry Probiotics.

Current state of technology

Prototype

Intellectual property

Patent Applications No.:
LU102420, LU102419, US
Provisional Application No.:
63/117,215

Developed by

University of Ljubljana,
Biotechnical Faculty; Iowa
State University Research
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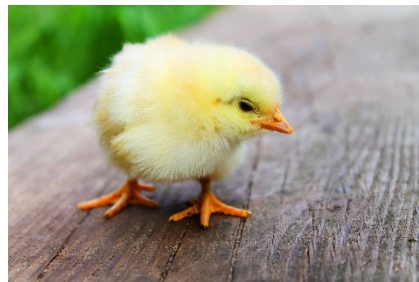
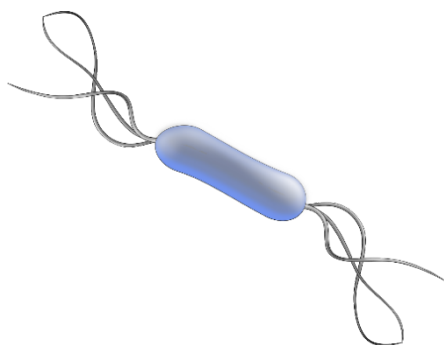
Reference

821-3/2020

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Background

Pathogens present a major healthcare and economic burden. Amongst the major pathogens causing diarrhea are *Listeria* spp., *Staphylococcus* spp., *Salmonella* spp., *E. coli*, and *Campylobacter* spp. *Campylobacteriosis* is the most frequently reported bacterial foodborne infection transmitted to humans, both in the European Union (EU) and the United States (US), and its major cause is *Campylobacter jejuni*. Most of *C. jejuni* infections have been associated with poultry meat and the poultry industry, which is also a major source of antibiotic resistant *C. jejuni* strains, as more than 50% of isolates from poultry are now resistant to at least one antibiotic.

Description of the Invention

Bacillus subtilis strain PS-216 has been shown to have strong inhibitory activity against enteropathogenic and/or foodborne pathogenic bacteria, such as *Campylobacter jejuni*. Particularly, our innovative product uses the *Bacillus subtilis* strain PS-216 for the preparation of food compositions and probiotic compositions. Probiotics can have beneficial effects on poultry, such as growth promotion, immunomodulation, and inhibition of pathogens. *Bacillus subtilis* strain PS-216 has the ability to greatly reduce the growth and biofilm formation of pathogens and *C. jejuni* colonization in broilers when compared to other *B. subtilis* strains. Moreover, the treatment of broilers with *B. subtilis* PS-216 results in an increased weight of broilers.

Main Advantages

- Growth and biofilm formation reduction of pathogens
- Reduction of *C. jejuni* colonization in poultry
- Increased weight gain of broilers

