



CRL1505

PROTECTION AGAINST BACTERIAL AND VIRAL INFECTIONS
IN THE INTESTINAL AND RESPIRATORY TRACT

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About respiratory infections:

- Bronchiolitis is the most frequent cause of hospitalization in the first **12 months** of life.
- Influenza viruses affect up to **20% of the world's population** each year, **more than 90%** of deaths are in advanced age (senior) groups.
- In the European Union, community-acquired pneumonia causes about **1 million hospitalizations** each year.

About gastrointestinal infections:

- **Over 200 million episodes** per year of infectious gastroenteritis in the United States.
- Every year, between **3 and 6 million children die worldwide** as a result of infectious gastroenteritis.
- Outbreaks of **gastrointestinal infections** are a **major problem** in the hospital environment.

CONSIDERATIONS

- The origin of the infection can be bacterial and viral.
- A vaccine does not exist for all the strains.
- Antibiotic resistance is growing.
- Infectious diseases are the major cause of death among children in developing countries.

It has been discovered that certain probiotics have a protective effect against bacterial and viral infections in the gastrointestinal tract. There is also the evidence that orally delivered probiotics are able to regulate immune responses outside the gastrointestinal tract, including the respiratory mucosa.

***Lactobacillus rhamnosus* CRL1505 stimulates the innate and adaptive immune response in the gut and in the respiratory tract promoting a protective effect.**

TECHNICAL INFORMATION

IDENTIFICATION

16S rDNA gene sequence analysis (species characterization),
PFGE (strain characterization).

SAFETY

included in EFSA QPS list (EFSA Journal 2017)
absence of investigated antibiotic resistance genes (EFSA Journal 2012; 10(6):2740)

BSE/TSE free

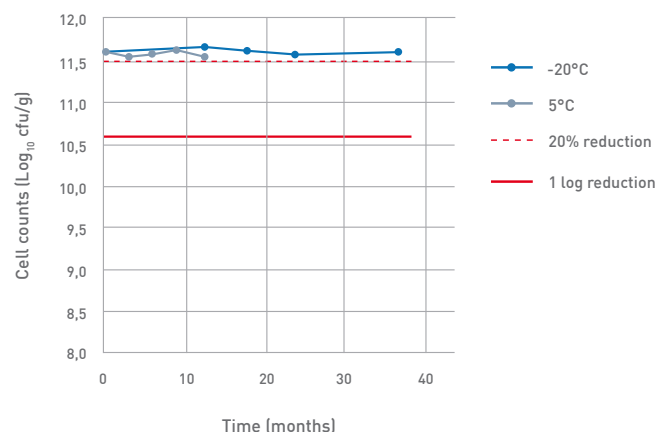
GMO free

Colorant free and hypoallergenic
(list of allergens in compliance with Reg. UE 1169/2011)

SHELF LIFE

18 months at temperature <-18°C
12 months at temperature 5±3°C

STABILITY (Log₁₀ cfu/g)



CHARACTERISTICS

- gastric acid resistance
- bile tolerance
- immune response
- stimulation in immune-competent and immune-compromised hosts
- NO antibiotic resistance
- NO haemolytic activity
- NO toxins production
- NO bacterial traslocation

ANIMAL TRIALS

L. rhamnosus CRL1505 stimulates the innate and adaptive immune response in the gut and in the respiratory tract. It improves resistance against *Salmonella typhimurium* and *Streptococcus pneumoniae* infection in immunocompetent and immunocompromised malnourished mice.

The oral administration of *L. rhamnosus* CRL1505 is able to induce differential cytokine profiles before and after challenge with pathogens, moreover it allows to increase the IgA and IgG after intestinal or respiratory infections.

For infant mice *L. rhamnosus* CRL1505 improves resistance against respiratory syncytial virus infection thanks at its ability to modulate pro-inflammatory/IL10 and Th1/Th2 balances in the respiratory tract.

In animal test it was also shown that the nasal administration of *L. rhamnosus* CRL1505 is able to modulate the immune response in the respiratory tract and increase the resistance of mice to the challenge with RSV.

CLINICAL TRIALS - A randomized-controlled double-blind clinical trial

L. rhamnosus CRL1505 improved mucosal immunity and reduce the incidence and severity of intestinal and respiratory infection in children:



•148 PLACEBO
•150 CRL1505



Children age



Daily dose



Intervention
period

RESULTS

- **66% of the children in the placebo group presented symptoms of infection while only 34% in the *L. rhamnosus* CRL1505 group.**
- **Subjects in the probiotic group were found to have significantly lower incidence of having fever**
- **The need of antibiotic treatment among the probiotic-consuming children was significantly lower than that in the placebo group.**
- **Increase in IgA levels in children who received the probiotic.**



ADDED VALUE:

this probiotic strains has been included into official **National Nutritional Programs in Argentina.**



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