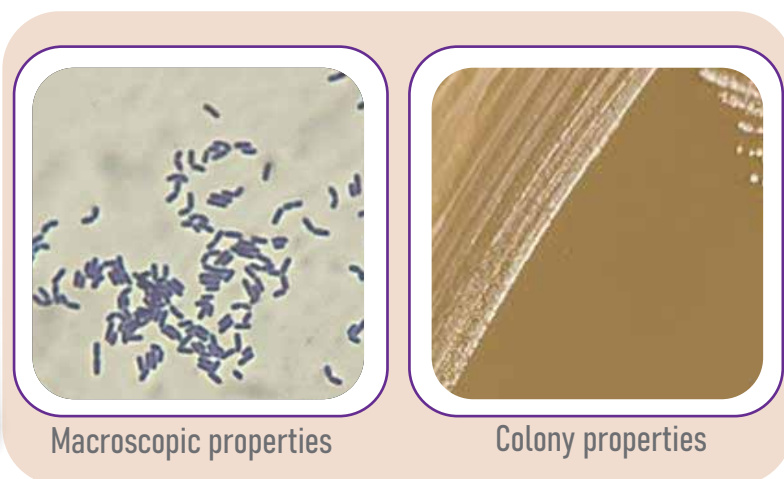


## *Lactiplantibacillus plantarum* (*Lactobacillus plantarum*)



Macroscopic properties

Colony properties

### Basic Info

Product name	<i>Lactiplantibacillus plantarum</i> probiotic bulk powder	
Type	Freeze Dried Probiotics powder	
Grade	Pharma (USP) & Food	
Resource	Natural, Sheep milk	
Certification	Iran Food & Drug Administration (IRC)	
Trademark	Biorun	
Storage Conditions	Store in original container. Keep refrigerated, Keep away from direct sunlight and moisture.	
Shelf Life	2 Years	
Microbial Tests	Viable Cell Count (Probiotic)	$1 \times 10^7$ up to $1 \times 10^{11}$
	Total Combined Molds and Yeasts Count	NMT 10
	Total Non-Lactic Acid Bacteria Count	NMT $5 \times 10^2$
Physical- Chemical Tests	Description	White, yellow to light brown powder with sweet pickled, fermented smell
	Moisture (LOD)	<6.0 %
	Heavy Metals	<10 $\mu\text{g/g}$

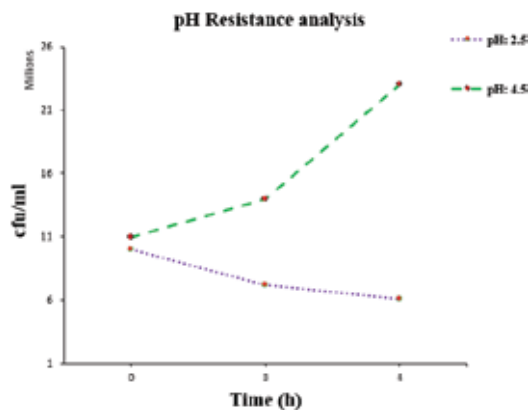
### Applications:

- 1-Medication, HealthCare, Dietary Supplements, in form of capsules, tablets, sachets, drops etc.
- 2-Food applied products, gummies, chocolate, candies, bakeries etc.
- 3-Dairy products, like yoghurts, milk, cheese, etc.

## Probiotic Characteristics

### 1-Resistance to Acidic pH

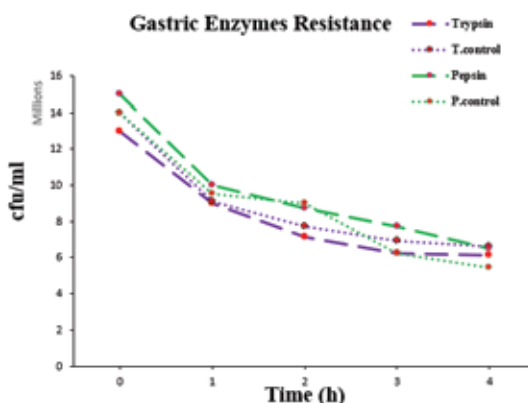
The results showed Tolerance of *L.plantarum* to pH 2.5 and 4.5



Growth rate (cfu/ml) results of *L.plantarum* in different pH and control treatment groups

### 2-Resistance to simulated gastric and intestinal conditions

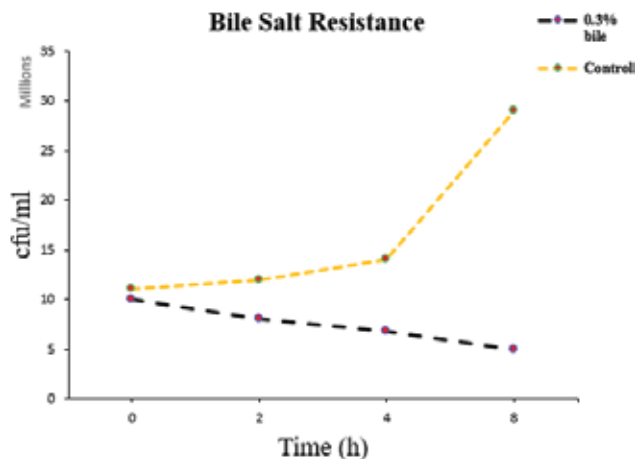
The results showed no significant decrease in count, bacteria count during 4-0 hours was not less than  $10^6$  even growth in all conditions



Mean survival results of *L.plantarum* in simulated gastric and intestinal conditions

### 3-Resistance to Bile salt

Bile tolerance is known as one of the key factors for candidate probiotics strains which shows survival and growth rate of the probiotic in the Gastrointestinal tract (GIT). The results showed no significant decrease, even growth in all conditions.



Results of resistance and growth of *L.plantarum* in % 0.3 of bile salt and control groups