

ESU 009– Probiotic foods and their types

Lecture 21



What are Probiotics?

Probiotics are defined as live microbes which when administered in adequate amounts confer a beneficial health effect on the host--- WHO 2002

Lactobacillus species

L. acidophilus

L. casei (rhamnosus)

L. reuteri

L. bulgaricus

L. plantarum

L. johnsonii

L. lactis

Bifidobacterium species

B. bifidum

B. longum

B. breve

B. infantis

B. lactis

B. adolescentis

Others

Bacillus cereus

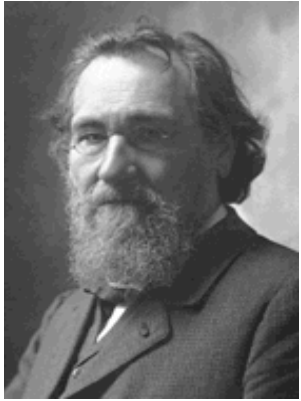
Non pathogenic Escherichia coli

Saccharomyces cerevisiae

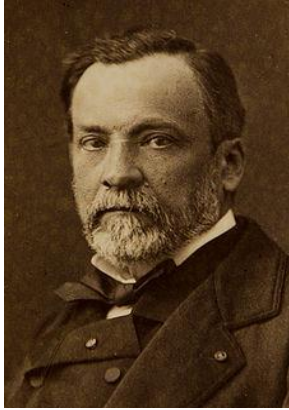
Enterococcus faecalis

Streptococcus thermophilus

The Probiotic History



- Ellie Metchnikoff, the first scientist who proposed the therapeutic use of lactic acid bacteria.



- Lactic acid bacteria were first discovered by Pasteur in 1857



- Their isolation from rancid milk was reported in 1878 by Lister.

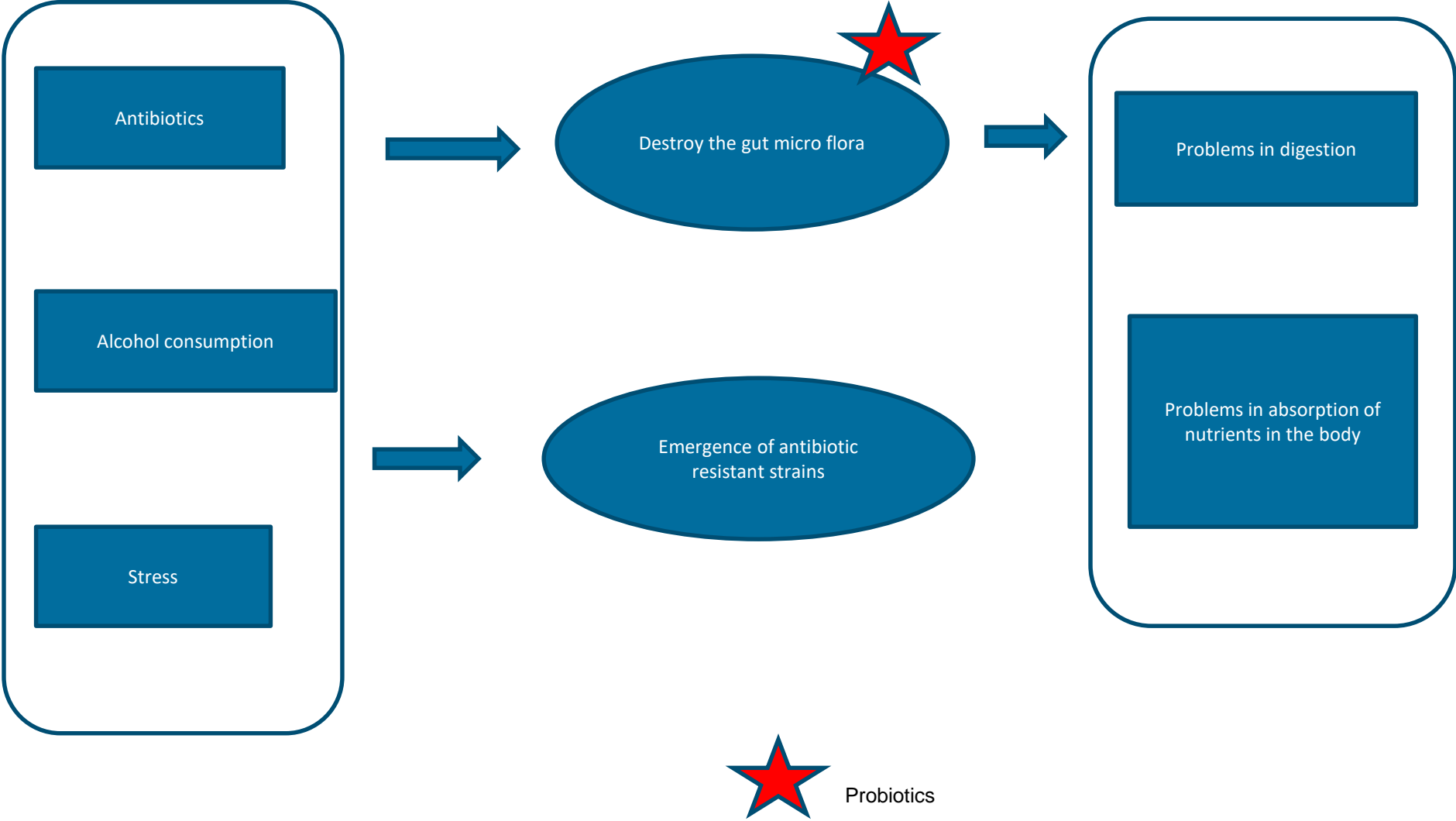


In 1889 Tissier discovered *Bifidobacterium* spp.



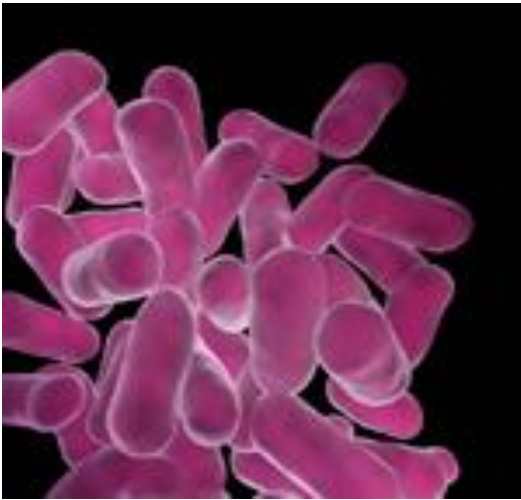
- The first stable cultures of *Lactobacillus casei* strain Shirota were made in 1930 by Dr. Minoru Shirota

Why are Probiotics important for Human health?



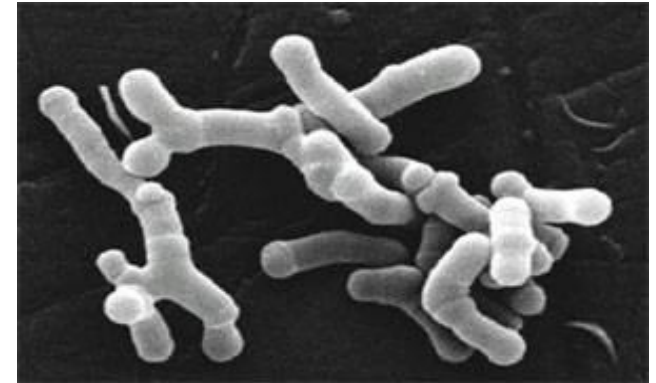
Lactobacillus strains:

- Acid tolerant
- Lactic acid as the major metabolic end product



Bifidobacterium strains:

- Produce acetic and lactic acids without generation of CO₂
- They are lactic acid bacteria (LAB)



- Source:
 - Raw and fermented dairy products
 - Fresh and fermented plant products
 - The reproductive and intestinal tracts of humans and other animals.

Food containing Probiotics

- Milk
- Soya milk
- Tofu
- Milk products- Sour cream, Butter milk, Yogurt
- Fermented Indian foods like
 - ❖ Idlis
 - ❖ Dosas
 - ❖ Dhoklas



Features of Probiotics

- Non-pathogenic
- Nontoxic
- Resistant to gastric acid
- Adhere to gut epithelial tissue
- Produce antibacterial substances
- Able to resist the antibacterial mechanisms that operate in the gut
- Need to avoid the effects of peristalsis, which tend to flush out bacteria with food
- Resistant to the bile acid

Thank you

Dr. Rahul Thory
School of Bioengineering and Food Technology
Shoolini University
Village Bajhol, Solan (H.P)

+91 9466266628(Mob No.)
rahul.560@shooliniuniversity.com