

Introduction of Probiotics

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- Live microorganisms that confer a health benefit on the host when administered in adequate amounts.
- Species of *Lactobacillus* and *Bifidobacterium* are most commonly used as probiotics.



Concept of Probiotics

- The concept of probiotics was first introduced by Nobel Prize winning Russian Scientist Elie Metchnikoff at the turn of the 20th century.
- The word “probiotic” (origins: Latin pro meaning “for” and Greek bios meaning “life”) was first used in 1954 to indicate substances that were required for a healthy life.

What are probiotics ?

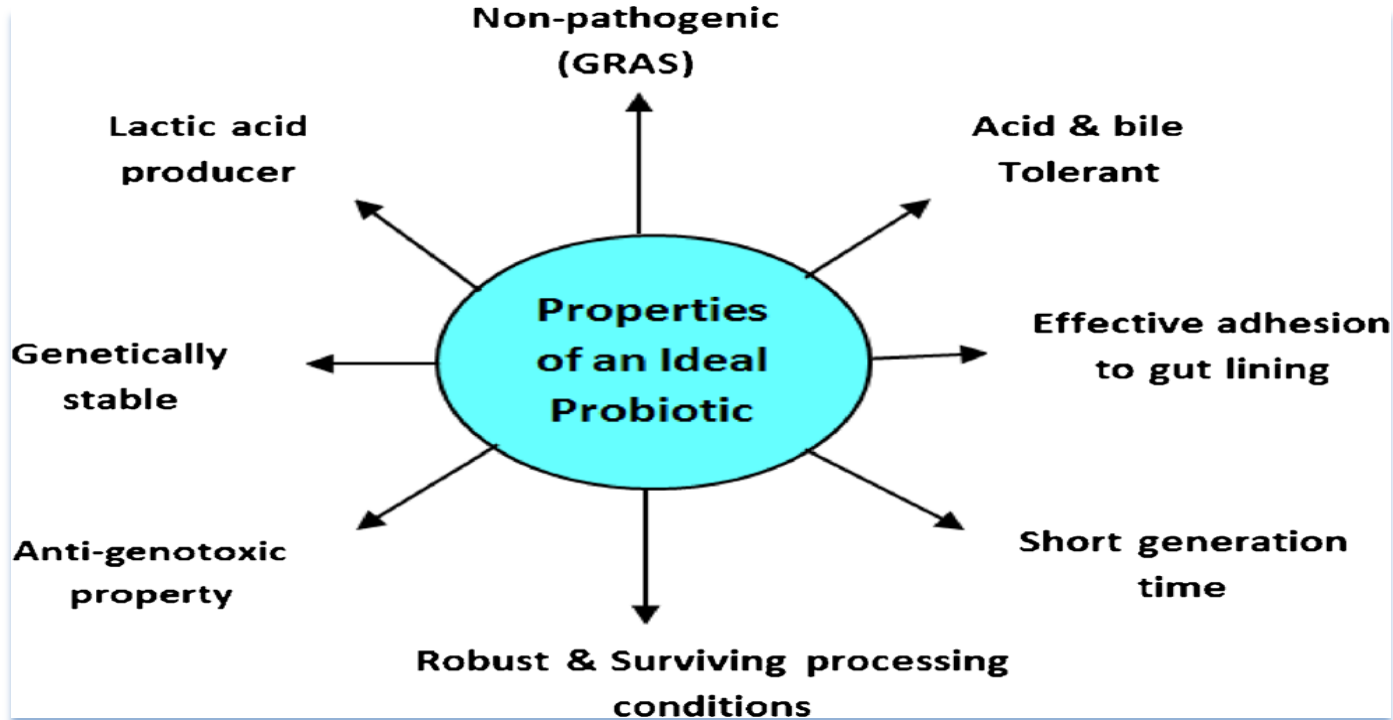
***Lactobacillus* species**

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

Characteristics of an ideal probiotic strain

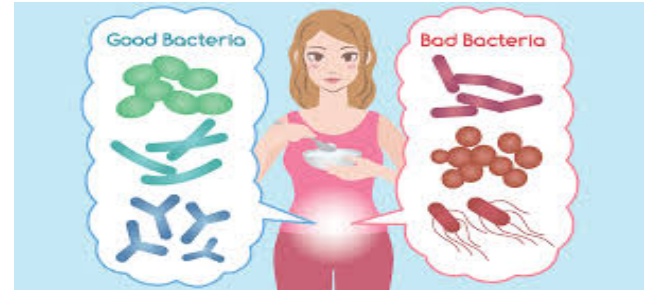


Probiotics Attributes

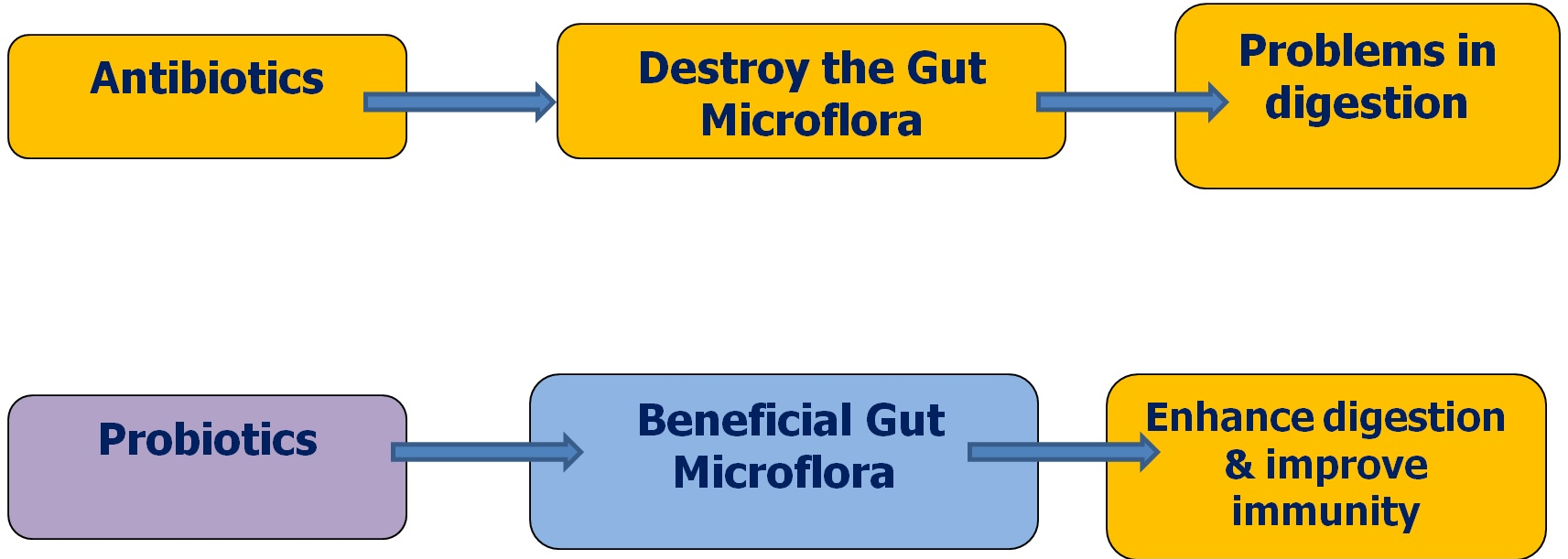
- ✓ **Acid tolerance**
- ✓ **Bile tolerance**
- ✓ **Cell surface hydrophobicity**
- ✓ **Protoplast regeneration**
- ✓ **Antimicrobial activity**
- ✓ **Cholesterol removal and bile salt deconjugation**
- ✓ **Gut colonization**
- ✓ **Lactose removal**
- ✓ **Protease and aminopeptidase activity**

Who Needs Probiotics ?

- Peoples suffering from infection
- With weak immune system
- People with food or respiratory allergies
- Peoples suffering from inflammatory bowel disorders , constipation & intestinal infections



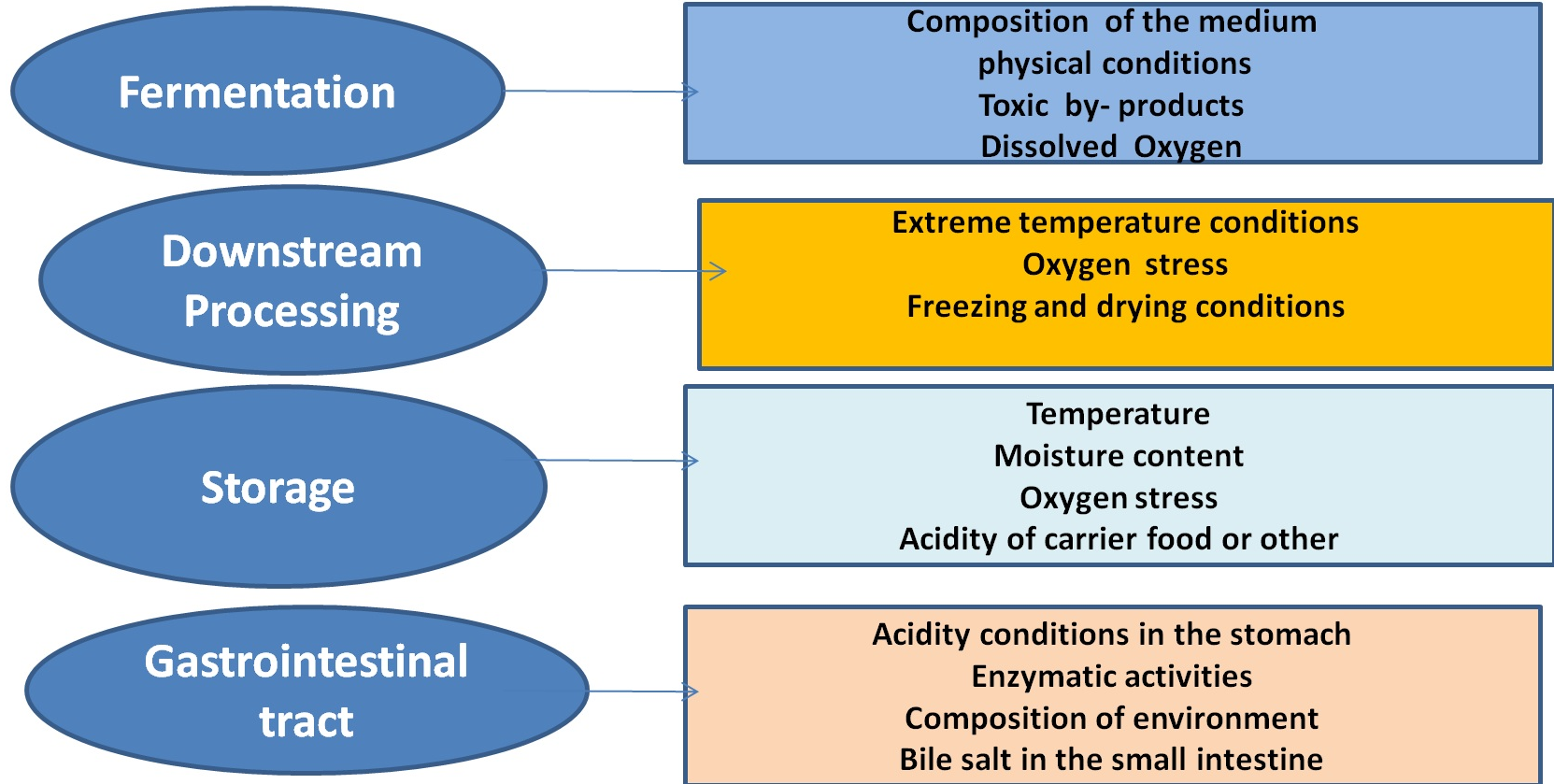
Probiotics Vs Antibiotics



Prerequisites of Probiotics

- Non pathogenic
- Nontoxic
- Resistant to gastric acid
- Adhere to gut epithelial tissue
- Resistant to bile acid
- Able to resist antibacterial mechanisms that operates in the gut

Factors Affecting Stability of Probiotics



Mechanism of Action of Probiotics

