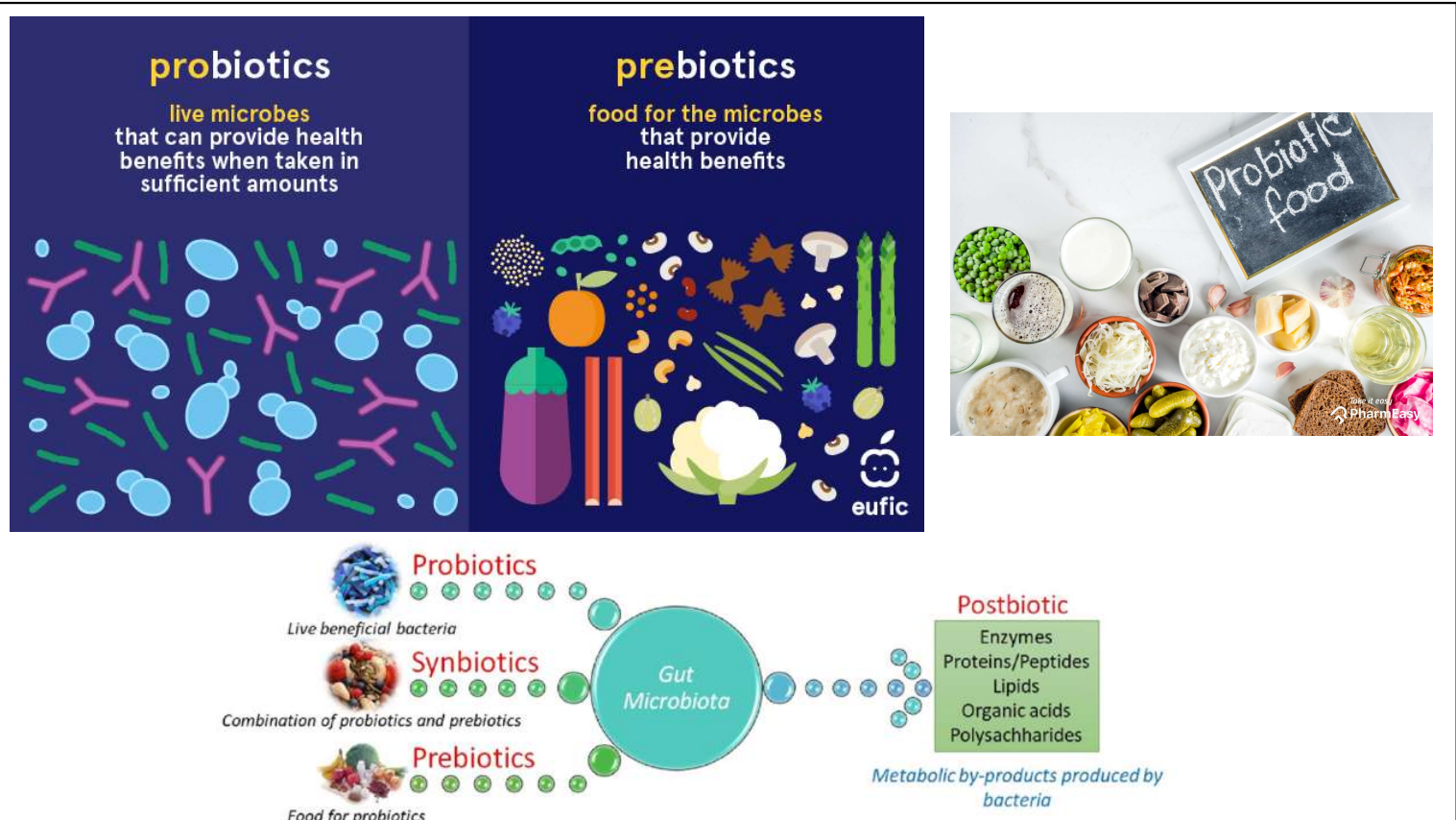


English for Biology (3rd year Bachelor of Microbiology)

Pr H. Ouled-Haddar

University of Jijel





Lecture 5. Probiotics as “Functional Foods”

A probiotic is a viable microbial dietary supplement that beneficially affects the host through its effects in the intestinal tract. Probiotics are widely used to prepare fermented dairy products such as yogurt or freeze-dried cultures. In the future, they may also be found in fermented vegetables and meats. Several health-related effects associated with the intake of probiotics, including alleviation of lactose intolerance and immune enhancement, have been reported in human studies. Some evidence suggests a role for probiotics in reducing the risk of rotavirus-induced diarrhea and colon cancer.

Prebiotics are nondigestible food ingredients that benefit the host by selectively stimulating the growth or activity of one or a limited number of bacteria in the colon. Work with prebiotics has been limited, and only studies involving the inulin-type fructans have generated sufficient data for thorough evaluation regarding their possible use as functional food ingredients. At present, claims about reduction of disease risk are only tentative and further research is needed.

Among the claims are constipation relief, suppression of diarrhea, and reduction of the risks of osteoporosis, atherosclerotic cardiovascular disease associated with dyslipidemia and insulin resistance, obesity, and possibly type 2 diabetes. The combination of probiotics and prebiotics in a synbiotic has not been studied. This combination might improve the survival of the bacteria crossing the upper part of the gastrointestinal tract, thereby enhancing their effects in the large bowel. In addition, their effects might be additive or even synergistic.

Comprehension

1. What is the difference between probiotics and prebiotics?
2. What are some of the claimed health benefits associated with probiotics,
3. Propose one potential mechanism behind these effects?

1. Which bacterial genera are commonly found in most probiotic products?

- a) *Streptococcus* and *Escherichia*
- b) *Lactobacillus* and *Bifidobacterium*
- c) *Salmonella* and *Clostridium*
- d) *Staphylococcus* and *Bacillus*

2. What is a claimed health benefit associated with probiotics?

- a) Inducing allergic reactions
- b) Promoting weight gain
- c) Preventing colon cancer
- d) Causing inflammatory bowel disease

3. What is the critical factor in achieving health benefits from probiotic products?

- a) High sugar content
- b) Low bacterial count
- c) Adequate level of viable bacteria
- d) Limited shelf life