

Discipline	Sciences de la Vie et de la Terre	Niveau	Seconde
Thème	Corps humain et santé		

**Compétences :**

Écouter, visionner et comprendre des contenus disciplinaires dans le contexte linguistique et culturel de la section	
Lire et comprendre des contenus disciplinaires dans le contexte linguistique et culturel de la section	
Parler et interagir à l'oral en mobilisant des contenus disciplinaires dans le contexte linguistique et culturel de la section	
Écrire et interagir à l'écrit en mobilisant des contenus disciplinaires dans le contexte linguistique et culturel de la section	
Rechercher et exploiter des informations pour faciliter la coopération internationale dans le contexte linguistique et culturel de la section	

**Activity 3: REBALANCING THE MICROBIOTA TO HEAL**

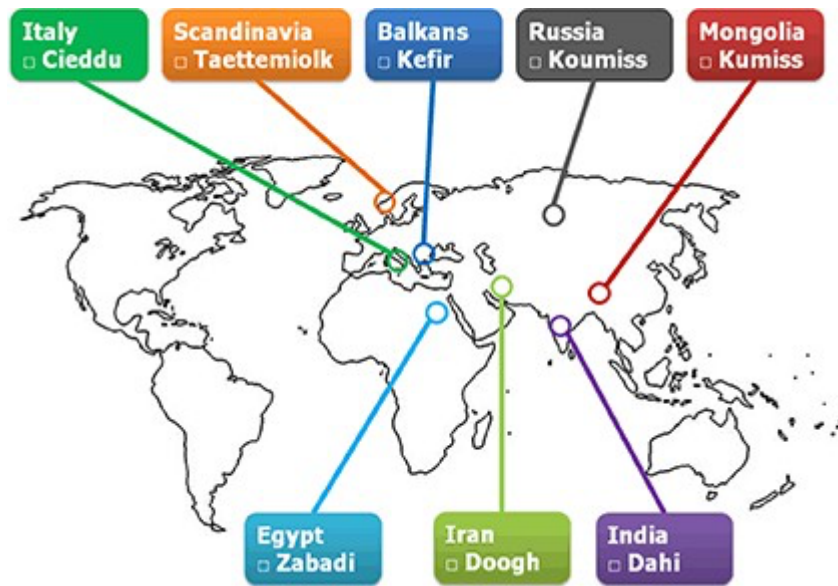
**Learning objective:** show that modifying the microbiota can modulate pathologies

**Task:** show how the efficiency of probiotics used empirically at first has been proven effective by the international scientific community. Explain (in one or two sentences) how these two methods help to rebalance the intestinal microbiota and therefore help the patient to be healthy.

**I. Probiotics: The Nurturing of the Microbiota**

Probiotics are live microbes administered as foods or even in capsules that confer health benefits on the body. Microbial cultures have been consumed by humans since the dawn of civilization. Mongolian women sprayed fermented milk on horsemen and their horses in belief that this provided strength and health on the recipients, while in some civilizations fermented milk was utilized to treat a variety of ailments. Dahi, a fermented milk is widely consumed in the Indian Sub-Continent and is known to impart numerous healthy outcomes. However, the first clinic trials on the health claims of these bacteria-rich fermented foods were not performed until the twentieth century. Eli Metchnikoff who obtained a Nobel laureate in medicine was first to correlate the longevity of some Bulgarian citizens to the prolific consumption of fermented milk that was rich in *Lactobacillus bulgaricus* and *Streptococcus thermophilus*. In 1930, the Japanese scientist Shirota isolated microbes with probiotic properties from healthy human subjects. These were later utilized in the development of milk products that were commercialized as Yakult. Subsequently, a French pediatrician reported the lack of Bifidobacteria in stool of infants suffering from diarrhea. In 1965 the term probiotics was coined by Lilly and Stillwell to describe products that stimulate the growth of microorganisms beneficial to the body. It was in 1984 the first probiotic species, *Lactobacillus acidophilus* was introduced followed subsequently by *Bifidobacterium* spp. Their use in food products is widespread. The significance of probiotics in fortifying the immune system has officially been recognized by the World Health Organization (WHO). Currently a wide variety of microorganisms such as *E. coli*, *Propionibacterium*, *Enterococcus*, *Streptococcus*, *Leucomostoc*, and *Bacillus cereus* are being consumed in order to regulate and adjust the body's microbiome.

**Figure 1: Consumption of probiotic-rich foods around the globe**



*Extracted from: Dysbiosis, Probiotics, and Prebiotics: In Diseases and Health | SpringerLink*

## **II- The Role of Probiotics in Colorectal Cancer Management**

Colorectal cancer (CRC) is one of the most common cancerous diseases worldwide and causes leading cancer-associated deaths. Several factors are related to the incidence of CRC such as unhealthy diet and lifestyle, heredity, metabolic disorders, and genetic factors.

A manuscript summarizes the influence of probiotic supplementation on the health status of CRC patients and discusses the possible mechanism behind the protective effect of probiotics against CRC.

*Extracted from: The Role of Probiotics in Colorectal Cancer Management, Published 17 February 2020 Academic Editor: Jamal A. Mahajna Copyright © 2020 Bhagavathi Sundaram Sivamaruthi et al*

*Auteur : Odile Roux – odile.roux@ac-nantes.fr.*