

# Chapter 1

## MICROBIOTA

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### INTRODUCTION

Nowadays the microbiota has been known as a driver of health that effects the metabolic, immune and nervous systems. In early life the gut microbiota begins developing. This early colonization is remarkably significant for the reason that it may effect long time microbiota activity and composition. In view of that the microbiota plays an important role in disorder and health, keeping a preventing microbiota would be critical in protecting illnesses like metabolic syndrome, allergies and autoimmunity disorders. Breast milk and milk glycans in particular has an important role in forming the initial life microbiota and supporting its improvement, so effecting health (1).

We mostly use the terms microbiota / microbiome. Microbiota terms to all of the special species that live with humans. Microbiome terms to the genes of microorganisms live commensally with humans and the natural habitat colonized by the microbiome (2).

Although the gut microbiota contains more than a thousand species with seven thousand strains in its structure, it is a complex ecosystem that contains approximately 10<sup>13</sup> -10<sup>14</sup> microorganisms, containing 10 times more genes than the number of cells in the human body and 150 times more than the human genome. Microbiota, which has metabolic diversity and genetic, is effective on the physiology, metabolism and improvement of the immune system of the host. Because of this, microbiota is currently called “a virtual organ” (1).

In last years, the detection of microbiota and microbiomes in the body has become very easy, especially thanks to molecular methods independent of culture (3). Researchers have begun using culture free analysis such as fluorescent in situ hybridization, gel electrophoresis, ribosomal RNA 16S cloning, and sequencing and quantitative PCR (4). Estimated that 10 trillion microorganisms are being in the adult gut, its total weight is 2 kilograms and is heavier than all known body cells (5,6).

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