

Insight into diet-microbiome interactions with a risk assessment perspective

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INTRODUCTION

The human gut microbiota is estimated to contain 500–1000 different bacterial species, as well as fungi, protozoa and viruses, with a number of micro-organisms estimated at 10¹⁸ CFU/g, ten times greater than that of the cells of the whole human body. The total amount of the microbiome (the genes of the microbiota) is estimated to be one hundred times greater than that of the human genome. The identification of priority aspects of the interaction between microbiota, diet and disease is a new topic area of strong interest for EFSA. Therefore, this project was created with the aim collecting information on the alteration of the gut microbiota as a result of the consumption of nutrients and/or specific substances naturally present in foods or that may enter the food chain and define, therefore, associated risks of disease and new research strategies to implement the study of the gut microbiota.

METHODOLOGY

The project consists of 3 phases:

1. Literature search on aspects of health-nutrition-microbiota/microbiome, to identify which health aspects, diseases and functions are influenced by the microbiota/microbiome. The survey will be shared and completed with the help of the experts identified in step 2.
2. Survey of national institutions to identify those with expertise in the microbiota/microbiome. The survey will focus on institutions under Art.36 of Regulation 178/2002, which cooperate with EFSA and are recognized as competent in risk analysis by the Ministry of Health, trying to expand to other institutions to ensure maximum national coverage. As part of this survey, institutional referents will also be identified, to create a list of competent national experts on the subject.
3. Identification, in collaboration with the experts identified in point 2, of priority aspects of the interaction with the microbiota to point out areas of intervention, to direct research, and to define relevant scientific activities for the national authority and EFSA.

RESULTS

Expected outcomes: Collection of information on microbiota alterations related to dietary habits, detection of potential pathogenic conditions related to microbiota alterations, insight into the use of this information to tailor risk assessments.

DISCUSSION

The abovementioned activities will be carried out at national level through the development of a network of experts on the gut microbiota.