

FORTH's INNOVATIVE RESEARCH FOR FOOD SAFETY MAKES EUROPEAN CITIZENS PROUD

Important recognition for one of the European projects coordinated by the Institute of Molecular Biology and Biotechnology of FORTH and implemented in collaboration with the Institute of Nanoscience and Nanotechnology in NCSR-Demokritos. The LoveFood program, which was carried out under the supervision of Professor Electra Gizeli (Department of Biology, University of Crete), was selected by the Informal Council of European Research and Innovation Ministers to be included in the printed publication entitled "Achievements of the Seventh Framework Programme". This publication is about remarkable projects where research and innovation are directly applicable to economic development at local, national, European or international level.

The FORTH/NCSR-Demokritos project combines innovative results in the field of bio-nanotechnology with modern genetic detection techniques for DNA. This patented idea is applied to the detection of foodborn bacteria such as Salmonella in dairy products. The novelty of the method lies in the ability to analyze pathogens easily, quickly, accurately and without the need for laboratory facilities. The user places the sample in a credit card-size cartridge, inserts it into a portable device and in a very short time gets the result as a "Yes" or "No". Using this method, producers can control the safety of their products themselves at the point of production. The replacement of an entire laboratory by a cartridge along with the high sensitivity of the method (even a bacterium) is a major innovation in the field of microbiological analysis. Moreover, the method can be applied to other relevant areas such as clinical diagnostics and environmental analysis.



Foodborn Bacteria detection device developed in the framework of the FP7 funded European program LoveFood. The plastic cartridge on the bottom right part of the figure, equal to the size of a credit card, is used for the loading and analysis of the sample.

The importance of the development of fast, easy-to-use, affordable and automated methods to detect pathogens in food for people's health can be appreciated if we consider the high number of incidences of food poisoning appearing in the news. Equally important is the consumers' trust to food industry, as the food sector in Europe is one of the largest manufacturing sectors with approximately 270,000 small and large businesses and more than 4 million workers. The development of methods which increase food safety, such as the work coordinated by the IMBB-FORTH, is expected to reinforce Europe's competitiveness in the food sector and analytical devices and, at the same time, provide a solution to citizens' health issues.

Besides FORTH and Demokritos, the Greek company MEVGAL participated as an advisor, together with five more partners coming from France (Institute Pasteur, Curie Institute, Sensor), Czech Republic (University Of Pardubice) and Germany (Jobst Technologies).