



EBI FOOD SAFETY

## Press Release

The Hague, October 5<sup>th</sup>, 2006

### **Gent University study confirms: natural *Listeria* bacteriophages enhance safety of ready-to-eat meat products**

A treatment with natural bacteriophages - Greek for bacteria-eaters - can offer a biological solution for the protection of certain foods against *Listeria*. This is confirmed in the doctorate research of Lieve Vermeiren of Gent University's Department of Food Safety and Food Quality in Belgium.

Dr. Vermeiren researched and demonstrated the efficacy of the application of Listex™P100 bacteriophages on luncheon meats (ham and poultry) that were artificially contaminated with *Listeria monocytogenes*, a bacterium which regularly causes serious food poisoning. The concern for this pathogen results from its ability to cause listeriosis in humans, a condition known for its high mortality rate (30%). The risk group for incurring listeriosis includes people with a weak immune system as well as babies and pregnant women. *Listeria* incidentally occurs in unprocessed foods and is particularly renowned for its capacity to grow and reproduce even at low temperatures, at high salt- and low pH-conditions and for its tendency to occupy niches in the infrastructure of food processing companies. Contamination of luncheon meats is particularly a concern during the production process, at the slicing and packaging stage of industrial production.

Bacteriophages (phages) are the most abundant micro organisms on the planet. They are dependant on other living organisms for their replication and exclusively target other bacteria. During this multiplication process the host cell bursts open (lysis) which results in the death of the bacterium. Phages do not affect the organoleptic properties (taste, structure, colour, etc.) of the food, in fact, on fresh and processed meat and meat products, more than 100 million viable phages per gram are often present, and high numbers of phages are routinely consumed with our food.

"We are most pleased with the results and quality of the work of Dr Vermeiren, and its practical relevance for consumers and the food processing industry", says Mark Offerhaus, EBI Food Safety's CEO. "Consumers call for lower-salt products - which are more prone to *Listeria* contamination - and look for food which is free from chemical additives. Nature has provided an elegant and effective solution".

Dr. Vermeiren used the P100 phage, a bacteriophage which only targets the *Listeria* bacterium, and which is known for its broad host-range; in-vitro experiments showed this phage to be lytic against all tested *L. monocytogenes* isolates at a temperature of 7°C. Experiments on cooked poultry and ham products show that application of P100 results in a reduction of the artificially added *L. monocytogenes* by more than Log3 (scientific poster available at [www.ebifoodsafety.com](http://www.ebifoodsafety.com)). Dr Vermeiren: "The study confirms the efficacy of the lytic P100 to control *Listeria monocytogenes* on meat products during production. Since phages are harmless to humans, animals and the environment, they can be used as an alternative biological manner of protection against *Listeria*". The new European regulation concerning microbiological criteria for foods, which has come into effect in January this year, states that for ready-to-eat foods the number of *L. monocytogenes* cells at the moment of consumption must be less than 100 per gram product. Applying an adequate dose of P100 phages allows ready-to-eat meat producing companies to meet this new standard.

The research of dr. Vermeiren was conducted in association with the Netherlands based company EBI Food Safety, which produces the Listex™P100 phage culture for use as an anti-Listerial processing-aid in food production. T

Prof. dr. ir. Johan Debevere and Prof. dr. ir. Frank Devlieghere of Gent University, Department of Food Safety and Food Quality, acted as promoters for Dr Vermeiren.

### **About EBI Food Safety**

EBI Food Safety is a privately held Life Sciences company focused on the development and commercialization of natural anti-bacterial products, based on its bacteriophage technology. The company's scientific network includes collaborations with universities and research centres in The Netherlands, Switzerland, Spain, Belgium and Italy. The company is viewed as product leader in the field of applied bacteriophage technology for food products and was recently honoured with the 2006 Technology Innovation Award by Frost & Sullivan. For more information, visit: [www.ebifoodsafety.com](http://www.ebifoodsafety.com).

### **About University of Gent, Department of Food Safety and Food Quality**

The University of Gent's Department of Food Safety and Food Quality department studies microbial behaviour in food products with a specialization in meat products, foodborne pathogens and Listeria in particular. Moreover, the Laboratory of Food Microbiology and Food Preservation has chosen to ensure the relevance of its research and education activities by a close collaboration with the food industry and its suppliers.

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