



**SmartGene**

## **SmartGene Services, SARL joins the BIOTRACER Consortium**

**May 11<sup>th</sup>, 2007: Lausanne Switzerland** - SmartGene Services, Sàrl, based in Lausanne, Switzerland, has recently signed a contract to develop a data-analysis and data-management system dedicated to the typing of *Campylobacter* species as part of a European Union Consortium project called BIOTRACER ([www.biotracer.org](http://www.biotracer.org)).

SmartGene Services specializes in the development and maintenance of complex databases for genetic information, using SmartGene's proprietary Integrated Database Network System (IDNS<sup>®</sup>) platform.

The needs of the BIOTRACER consortium for a software system to type *Campylobacter* by Multi-Locus-Sequence-Typing (MLST) are met precisely by SmartGene's expertise, and the IDNS<sup>®</sup> technology is an ideal carrier and service platform for BIOTRACER's users. SmartGene Services collaborates in this project with the group of Professor Peter Kuhnert at the Institute for Veterinary Bacteriology of the University of Bern, Switzerland, and with the other 46 public and private partners from 24 countries within the working group of the BIOTRACER consortium.

### **About *Campylobacter*:**

*Campylobacter jejuni* and other *Campylobacter* are bacterial pathogens in humans and animals. *Campylobacter jejuni* infections in humans have become the major cause of bacterial diarrhea, outnumbering *Salmonella* cases. It causes severe abdominal pain, fever and gastro-intestinal symptoms, with impairment lasting for a week or more. Since *Campylobacter* are transmitted throughout the food chain (including poultry, meat and eggs), surveillance and early containment is important in order to prevent spread of infection.

Typing of *Campylobacter* isolated from infected animals, food products or from stool samples of patients is performed in order to determine the source of an infection; this testing has been performed by serology, but nowadays, genetic methods such as gene sequence analysis bring a much more detailed and reproducible view of how strains relate and thus can detect contamination and transmission patterns earlier and with more precision.

### **About MLST:**

The Multi-Locus Sequence Typing (MLST) method has become a widely accepted reference method to survey the spread of *Campylobacter* infections within a country and beyond. To perform this method in a routine setting however requires the following: sequencing infrastructure; the exact evaluation of the genetic targets; their potential to offer strain discrimination and their evolution (evolutionary clock); a good set-up of the technology; and an easy to operate and reliable software for interpretation and archiving of results. The software needs to be accessible and useful to veterinarians, food producers, microbiologists and public health authorities.

SmartGene had already developed a Web-based MLST service on its proprietary IDNS® technology; this application is now specifically adapted for *Campylobacter* MLST by SmartGene Services for the BIOTRACER project.

Following the implementation of novel sequence targets for the typing of *Campylobacter* species, SmartGene Services is establishing a service platform which renders sequence typing easy and reproducible in routine and high throughput settings. The BIOTRACER consortium, the group of Professor Peter Kuhnert and SmartGene Services hope that this work will lead to a standard *Campylobacter* typing platform which would be interesting and useful to food producers and public health surveillance authorities all over Europe and around the world.

**About SmartGene Services:**

SmartGene Services Sàrl is an affiliate of SmartGene GmbH, which is the owner of the IDNS technology for web-based analysis and management of genetic data. SmartGene Services is located in Lausanne and provides professional development and maintenance services for worldwide customers and users of IDNS. SmartGene Services also provides professional services such as large-scale bioinformatic analysis or uploads, exports etc. SmartGene Services staff comprises MD, PhD, informaticians and bioinformaticians and all development follows Computer System Validation (CSV) guidelines.

[www.smartgene.com](http://www.smartgene.com)

**About Peter Kuhnert and the Institute for Veterinary Bacteriology of the University of Bern, Switzerland:**

The work of Professor Peter Kuhnert's group in Bern comprises studies on zoonotic bacterial pathogens including food-borne pathogens and specialized on DNA sequence based bacterial identification and characterization. In particular, by using microarrays for pathotyping and by investigating genetic relatedness as exemplified on the genus *Campylobacter* and the family *Pasteurellaceae*. They published several papers based on the application of SmartGene's IDNS platform. The Institute of Veterinary Bacteriology focuses on research on host-pathogen interaction and antibiotic resistance of pathogenic bacteria. It also harbors a diagnostic unit with several governmental reference functions.

[www.vbi.vetsuisse.unibe.ch](http://www.vbi.vetsuisse.unibe.ch)

**About BIOTRACER:**

BIOTRACER is a European Union Consortium to "improve the bio-traceability of unintended microorganisms and their substances in food and feed chains". The project began January 1st 2007, includes 47 partners from 24 countries and is funded with €11million from the European Commission.

[www.biotracer.org](http://www.biotracer.org)