Food Science
Quality products for food safety testing

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Foodborne pathogens

Intoxications and infections caused by foodborne pathogens represent an increasing public health problem, with nearly a quarter of the population at higher risk for illness today.

Several outbreaks of food-borne illnesses following consumption of food caused by *L. monocytogenes*, *Salmonella* spp. and Shiga Toxin producing *Escherichia coli* (STEC) have been reported in recent years, indicating the importance of this problem in safeguarding public health.

Microbiological quality control programs are increasingly applied throughout food chain production in order to minimize the risk of infection for the consumer. Thus, the availability of reliable and rapid test systems to detect the presence or absence becomes increasingly important for the agricultural and food industry. Traditional method for food testing is based on culture methods, although reliable and efficient, require several days before results are produced.

Diatheva has specifically design a complete product line based on real-time PCR technology for the rapid detection of *Salmonella*, *L. monocytogenes* and STEC from food samples complete of sample preparation and DNA extraction.

Field of application

- Rapid and sensitive detection of *L. monocytogenes* in food and environmental samples after enrichment in Half Fraser Broth
- Rapid and sensitive detection of *Salmonella* spp. in food samples and environmental after enrichment in Buffered Peptone Water
- Rapid and sensitive detection of STEC virulence genes (*eae*, *stx* 1-2) and 6 major STEC serogroups (O26-O111-O145-O157-O103-O104) in only few hours following bacterial enrichment

Product specification

Technology	qualitative real-time PCR
Kit content	PCR mixes and DNA Polymerase, Positive and Negative controls
Specimen	food and environmental samples
Sample preparation	DNA extraction using Bacterial DNA Isolation Single Step
Size	variable sizes are available
Testing time	16-24 hours depending on pathogen
Thermal cycler compatibility	Require qPCR cycler with filter sets for FAM and VIC/HEX/JOE dyes

Ingredient authentication

Quantification of Soft/Durum Wheat Contamination

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Correct and detailed labelling of food composition has become a crucial element in the global market. Wheat is the most important cereal in diets worldwide and flour is the primary product used for manufacturing bread, semolina and pasta.

The system developed by Diatheva permits to quantify common wheat contamination in grain, semolina and derivative products and is based on DNA detection that is more stable than other components even when subjected to technological processes used in the food industry. DNA can be amplified and detected with high sensitivity and specificity, constituting an excellent molecular marker of the presence of soft wheat in the product.

Field of application

- Reliable quantification of soft wheat adulteration in durum wheat-based foodstuffs by real-time PCR

Product specification

Technology	quantitative real-time PCR
Kit content	PCR mixes and DNA Polymerase, Standard DNA and 3 % DNA Solution and Negative control
Specimen	corn, flour and derivative products such as pasta
Sample preparation	DNA extraction using Grain DNA extraction kit
Size	50 tests
Testing time	4 hours
Thermal cycler compatibility	Require qPCR cycler with filter sets for FAM and VIC/HEX/JOE dyes

Food Science - Ordering information

CODE	PRODUCT	DESCRIPTION	SIZE
Foodborne pathogens			
MKZ0002	Multipathogen enrichment medium	Enrichment medium	500 g
MBK0063	Bacterial DNA Isolation Single Step	DNA extraction kit	50 extractions
MBK0076	Bacterial DNA Isolation Single Step	DNA extraction kit	384 extractions / 4 plates
MBK0061	Fast DNA Extraction kit	DNA extraction kit	50 extractions
MBK0091	Fast DNA Extraction kit	DNA extraction kit	100 extractions
MBK0054	Salmonella spp. FLUO kit	real-time PCR kit	50 tests
MBK0057	Salmonella spp. FLUO kit	real-time PCR kit	100 tests
MBK0056	Listeria Monocytogenes FLUO kit	real-time PCR kit	50 tests
MBK0090	Listeria Monocytogenes FLUO kit	real-time PCR kit	100 tests
MBK0077-PL	Listeria Monocytogenes FLUO kit	real-time PCR kit	384 tests
MBK0071	E. coli O157 FLUO kit	real-time PCR kit	50 tests
MBK0053	Multipathogen FLUO kit (for *Salmonella and L. monocytogenes*)	real-time PCR kit	50 tests
MBK0019	Multipathogen FLUO kit (for *Salmonella, L. monocytogenes and E. coli O157*)	real-time PCR kit	50 tests
MBK0074	STEC Serotypes FLUO kit	real-time PCR kit	75 tests
MBK0068	STEC FLUO Detection kit	real-time PCR kit	50 tests
MBK0084	Enteroaggregative E. coli Detection kit	real-time PCR kit	50 tests
MBK0085	E. coli O104 FLUO kit	real-time PCR kit	50 tests
Ingredient authentication			
MBK0064	Grains DNA Extraction kit	DNA extraction kit	50 extractions
MBK0062	Grain Quantitative kit	real-time PCR kit	150 tests

Complete and tailored solutions for entry into PCR technology: laboratory equipment, PCR machine and training