

New and unique boosting broth - PCR combination for 21 hour *Listeria monocytogenes* detection



Pathogenic bacteria cause 90 per cent of reported foodborne illnesses. *Listeria monocytogenes* has emerged as one of the most important food pathogens, having a zero tolerance in ready-to eat processed meats and dairy foods. This bacterium not only causes serious illness but is also lethal in infants, people over 60 and immune-compromised individuals. Food makers are required to test each food batch where *Listeria monocytogenes* may be present, such as soft cheese and processed meat products and in particular those kept refrigerated for a long time where the pathogen can grow at low temperatures.

In food microbiology, there has been much in the development of rapid methods and automation for the detection and enumeration of pathogens. Nowadays, real

time PCR technology allows laboratories to quickly and accurately detect *L. monocytogenes* in raw ingredients, finished products and environmental samples. But identifying low levels of this pathogen in food is a challenge, so the industry is required to use enrichment techniques, such as broths.

Current real time PCR methods to detect this bacterium rely upon enrichment to increase the number of bacteria present in a sample. The food or food extract is incubated in special growth media for 24 hours and the resulting culture is tested for *L. monocytogenes* using procedures that require an additional three to four hours (real time PCR systems usually perform the PCR thermocycling process with results available in three or four hours). Moreover, the food industry includes many small food processors and producers that do not have in-house microbiological laboratories for the purpose of testing for food pathogens. Therefore, many companies send out samples for analysis. This adds up to another 24 hours to the time that elapses between when the food is sampled and the bacterium, if present, is detected. An overall time of 28 hours to two days (if samples are sent out for analysis) typically elapses from when the food is sampled and the test results are available. However, even if 28 hours has been considered as a big improvement compared to classical culture methods (overall time of two to four days), the elapsed time, referred to as 'time to result' or TTR, is problematic since some foods are displayed in supermarkets or consumed before test results would be available.

Microbiology specialist AES CHEMUNEX has launched a unique product in its range of rapid microbiology reagents that slices away six hours from the detection procedure by cutting back the broth time to just 18 hours. Listerboost® has been designed to accelerate *Listeria monocytogenes* detection time for the food industry. Listerboost® literally boosts *Listeria monocytogenes* growth and results in an 18 hours incubation period previous real time PCR testing when classical broth needs to be incubated for 24 hours.

Listerboost® is associated to ADIAFOOD® *L. mono.* Adiafood® *L. mono* is a real time PCR kit using two specificity levels (specific primers and probes) for an accurate identification of *L. mono*. This technology has been designed to simplify PCR analysis as it utilises a single amplification protocol for all the pathogens and does not need any melting curves interpretation. ADDIAFOOD® PCR system performs a PCR thermocycling process with results available in three hours.

This new and unique combination (Listerboost® + ADIAFOOD®) results in an overall TTR of 21 hours for the detection of *Listeria monocytogenes* which has dropped by 25 per cent compared to conventional real time PCR Time To Result.

For further information about the Listerboost® or ADIAFOOD®, please speak to your local AES CHEMUNEX representative, telephone +44 1279 666356, or email info@aeschemunex.co.uk