

Listeria monocytogenes detection kit



Developed by



ICAR Research Complex for Goa

Old Goa 403402

Commercialization technologies developed and promoting public-private partnership

ICAR Research Complex for Goa

S.No.	Title of Product/Process Developed/commercialized	Whether IPR protected	Type of Protection	Commercialized (Yes/No)
1	PCR based diagnostic kit for detection of <i>Listeria monocytogenes</i> from food and clinical samples (human and animal)	No		Under process

Techno-economic evaluation

Listeriosis, caused by *Listeria monocytogenes*, is an important bacterial zoonosis, which occurs in a variety of animals including humans, and arises mainly from the ingestion of contaminated food and water. Listeriosis is a serious invasive disease, which leads to septicaemia, abortion, stillbirth, perinatal infections, meningitis, gastroenteritis and meningoencephalitis, especially in immunocompromised individuals and in persons in contact with animals.

During the course of investigations, we have identified a pressing and unmet need among clinicians and diagnostic laboratories to provide for an easy, robust and cheap assay for both detection of seroconversion amongst highly susceptible populations (pregnant women, elderly etc.) as well as rapid and reliable diagnostics for *Listeria* spp. The disease, listeriosis which is widely prevalent in animal populations has recently been shown to account for significant number of cases of miscarriages in pregnant women in India. The lack of simple diagnostic tests hampers the early diagnosis of the infection and in turn the proper treatment.

- A multiplex PCR based protocol for diagnosis of listeriosis from food and clinical (human and animals) samples has been developed and is ready for commercialization.
- It is based on detection of the *hlyA*, *plcA* and *actA* genes. The test can detect pathogenic strains of *Listeria monocytogenes* in a single reaction.

The approximate cost for testing one sample is ` 150/-

The cost of kit for testing 25 samples can be ` 4000/-



Listeria monocytogenes Detection Kit

Listeria monocytogenes is an emerging food-borne pathogen and is widely tested for in food, environmental and clinical samples. Infection by *L. monocytogenes* results in listeriosis and usually affects individuals pre-disposed through an underlying disease affecting the immune system, such as cancer or AIDS, and also other susceptible individuals such as the elderly, pregnant women, newborn babies or fetuses.

The spectrum of the disease in animals is broad ranging from asymptomatic infection and carriage to uncommon cutaneous lesions or various focal infections such as conjunctivitis, urethritis, endocarditis, and severe disturbance of the gait, followed by death. Abortions and perinatal deaths are common in cattle and sheep. *L. monocytogenes* is a well-recognized cause of mastitis, abortion, repeat breeding, infertility, encephalitis and septicaemia in cattle.

Identification traditionally involved culture methods based on selective enrichment and plating followed by the characterization of *Listeria* spp. based on colony morphology, sugar fermentation and haemolytic properties. These methods are the gold standard; but they are lengthy and may not be suitable for testing of foods with short shelf lives.

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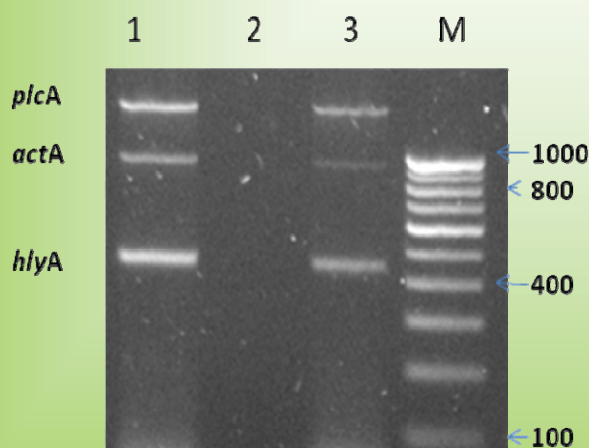
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