LISTERIA MONOCYTOGENES

First described as a pathogen in the late 1920's, it was not until the early 1980's that Listeria monocytogenes emerged as a food-borne pathogen. These hardy, nonspore-forming bacteria are capable of growing over a temperature range of 1-45°C (34-113°F), growing best at 30-37°C (86-99°F); a pH range of 5.5-9 preferring a slightly alkaline condition; and can survive salt concentrations up to 25%!

The problem? Virulent strains of Listeria monocytogenes produce an extracellular cytotoxin called hemolysin, which has been strongly suggested as the causative agent of listeriosis. This infection usually appears as septicemia or meningitis and is thought to attack the reticuloendothelial system of humans. The reticuloendothelial system consists of a variety of cells associated with the body's immune system. Groups most susceptible to listeriosis are immuno-compromised patients, persons with immuno-deficiencies, the elderly and newborns. Infected mothers can expose their fetus to Listeria monocytogenes through transplacental infection. Infants that are born alive are generally quite ill, and if they survive, usually develop meningitis, suffer brain damage and mental retardation. Epidemics of listeriosis have had as high as 40% mortality rates. Healthy individuals very rarely contract listeriosis.

Listeria monocytogenes is found widespread in soil, decaying matter and water. Approximately 5% of cattle and various other domesticated animals and even some humans are asymptomatic carriers. Infected cows for example, may excrete Listeria monocytogenes into their milk. However, pasteurization inactivates the bacteria; the concern is for post-pasteurization contamination.

Due to its survival over a wide range of environmental conditions, Listeria monocytogenes can be isolated from a variety of foods especially dairy products, processed meat and poultry products, and vegetables.

Present biochemical detection procedures involve preparation of complex media and reagents, and elaborate isolation methods for the identification of Listeria monocytogenes in a sample. Midwest Laboratories provide both prompt testing and the experience needed to isolate Listeria monocytogenes from a variety of food products and environmental samples.

Midwest Labs offers Listeria testing for food, feed, and environmental samples using approved rapid methods (lateral flow or PCR) to ensure quick turnaround.