

Molecular Detection of *Listeria* spp. in Bovine Aborted Samples Referred to the Center of Excellence in Ruminant Abortion and Neonatal Mortality in Iran

Ehsan Masjedi¹, Gholamreza Mohammadi¹, Pezhman Mirshokraei¹, Hamideh KalateRahmani²

¹Department of Clinical Sciences, Ferdowsi University of Mashhad, Iran

²Department of Pathobiology, Ferdowsi University of Mashhad, Iran

Listeria, a Gram-positive pathogenic bacteria, mainly affects ruminants and humans, causing listeriosis. It is not considered contagious and primarily occurs sporadically in winter and early spring. Clinical signs in ruminants include septicemia in neonates, meningoencephalitis (circling disease), and abortion in adults. *Listeria monocytogenes* and *Listeria ivanovii* are identified as pathogens of warm-blooded hosts among the eight known species of *Listeria*.

In this study, a PCR method was used to detect *Listeria* spp. in 100 cases of bovine aborted samples. These samples were referred to the Center of Excellence in Ruminant Abortion and Neonatal Mortality at Ferdowsi University of Mashhad, Iran, between 2022 and 2023. The sample was taken by placing the fetus on its left side. An incision was made in the skin and abdominal muscles on the right flank to obtain a liver sample. DNA was extracted from the samples. Initially, all the samples were tested using the *Listeria* genus-specific PCR primer. Then, The samples in which the presence of *Listeria* spp. was confirmed, were re-evaluated using specific primers of *L. monocytogenes* and *L. ivanovii*. Out of the total of 117 examined samples, 1 (1%) sample was positive in bacterial culture and 1 (1%) sample was declared positive in PCR. Listeriosis is a zoonosis disease that causes abortion and subclinical disease in humans. Dairy cattle are usually a reservoir for bacteria. The significance of this study lies in its use of the molecular method (PCR) to analyze the rate of bovine abortion caused by *Listeria*. This method offers higher accuracy compared to bacterial culture, making the findings more reliable and impactful.

Keywords: *Listeria*, Molecular test, Abortin