

PCR-Salmonella-Listeria Detection Kit

(Catalog# K1448-96; 96 Rxns; Storage at -20°C)

I. Introduction:

Waterborne and foodborne pathogens are ubiquitous in the environment. The threat to human health posed by foodborne pathogens has attracted public attention, and the incidence of illness or death caused by major known pathogens has increased worldwide. Infections or outbreaks caused by major foodborne pathogens can be the result of consuming contaminated foods, including beef, milk products, fresh vegetables, and contaminated water. In addition, food itself is a complex system, as well as a complicated environment, which can supply the enough nutrition for the bacteria. BioVision offers PCR-based detection kits intended for agri-food in a userfriendly, rapid, accurate and cost-effective format.

PCR-Salmonella-Listeria Detection Kit (Salmonella spp & Listeria monocytogenes) is based on amplification and detection of specific DNA fragments from Salmonella spp and/or Listeria monocytogenes by the real-time PCR method (multiplex PCR). All reagents required for qPCR are provided in a ready to use as Multiplex PCR Master Mix. The Multiplex PCR Master Mix contains the appropriate amounts of buffer, dNTPs, Hot-start DNA polymerase, DNA-free water and MgCl₂ to perform the number of reactions indicated in the kit. The Multiplex PCR Master Mix also includes an internal amplification control (IAC) whose detection indicates the absence of PCR inhibitors. Primers and probes for the amplification of IAC as well as for the amplification of the target gene are included in the Master Mix. The probe for the detection of target gene is labeled with the FAM (Listeria) and HEX fluorochrome (Salmonella), whereas the probe for the detection of IAC is labeled with the CY5 fluorochrome.

Additionally, the kit includes positive control DNA and negative controls. The positive control is supplied to demonstrate that the PCR amplification is working efficiently with the supplied components. To confirm the absence of contamination, a negative control reaction should be included every time the kit is used. The kit also includes DNAREady lysis buffer to extract the DNA from the sample prior to PCR detection.

II. Applications:

- Amplification and detection of specific DNA fragments from Salmonella spp and/or Listeria monocytogenes by the real-time PCR method (multiplex PCR).

III. Sample Type:

- Food samples (beef, milk products, fresh vegetables, and contaminated water)
- Salmonella spp, Listeria monocytogenes or Legionella spp.

IV. Kit Contents:

Components	K1448-96	Part Number
PCR Master Mix	1 Vial	K1448-96-1
DNAREady Lysis Buffer	1 Bottle	K1448-96-2
PCR Positive Control	1 Vial	K1448-96-3
PCR Negative Control	1 Vial	K1448-96-4

V. User Supplied Reagents and Equipment:

- Buffered Peptone Water
- Stomacher or similar; Water bath
- PCR tube
- Extracted DNA sample
- Real Time Thermal Cycler

VI. Storage Conditions and Reagent Preparation:

All the reagents are shipped in dry ice and stored at -20°C upon receipt. Avoid prolonged exposure to light. If stored correctly the kit will retain full activity for 12 months.

VII. Assay Protocol:

The kit includes DNAREady lysis buffer to extract the DNA from the sample prior to PCR detection.

PCR cycling conditions:

Step	Time	Temperature
Initial Denaturation	10 min	95°C
45 Cycles	15 sec	95°C
	1 min	60°C
Melt Analysis	Refer to instrumental instructions	

Analysis of results:

Follow instrument software instructions to generate cycle threshold (Ct) values from the acquired data. The user may also, optionally, analyze the melt profile of each reaction. The quantity of DNA target in each sample can be calculated by referring to the positive control template Ct value.

VIII. Related Products:

- PCR Master Mixes and Kits (Cat# M1127- M1145)
- DNA Extraction (Cat# K1411-K1417); K309; K316
- Q-PCR (Cat# M1105-M1126)

FOR RESEARCH USE ONLY! Not to be used on humans.