

BactoReal[®] Kit

Listeria monocytogenes



For veterinary use only

BactoReal[®] Kit *Listeria monocytogenes*

Order no.	Reactions	Pathogen	Internal positive control
DVEB00813	100	FAM channel	Cy5 channel
DVEB00853	50	FAM channel	Cy5 channel
DVEB00811	100	FAM channel	VIC/HEX channel
DVEB00851	50	FAM channel	VIC/HEX channel

Kit contents:

- Detection assay for *Listeria monocytogenes*
- Detection assay for internal positive control (control of amplification)
- DNA reaction mix (contains uracil-N glycosylase, UNG)
- Positive control for *L. monocytogenes*
- Water



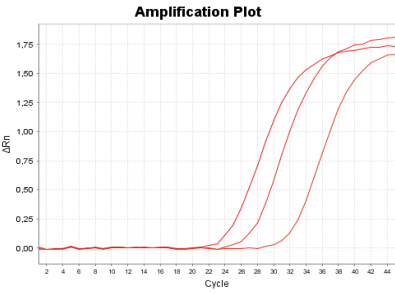
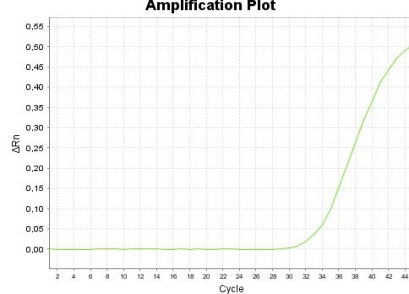
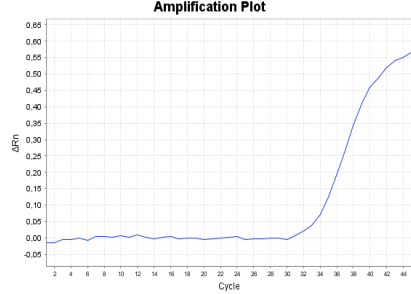
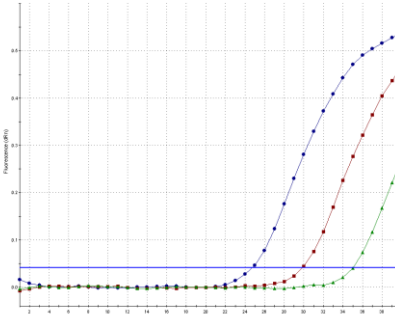
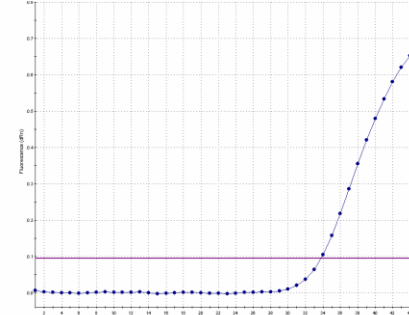
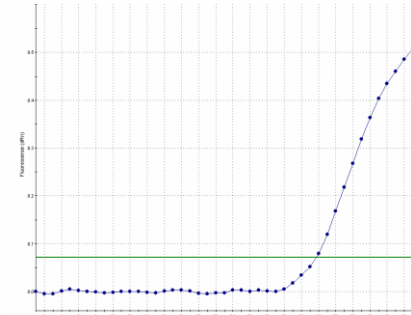
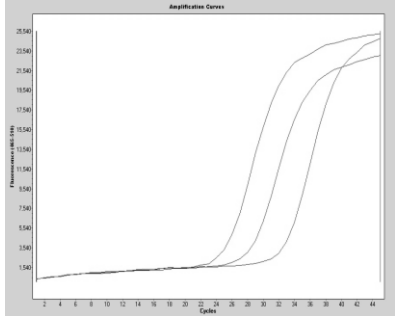
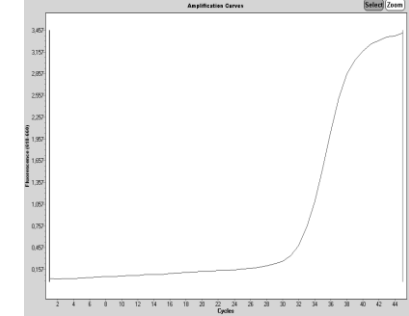
Background: Listeriosis is an infection caused by eating food (milk, cheeses, ice cream, vegetables, sausages, meats and fish) contaminated with the bacterium called *Listeria monocytogenes*. Although there are other types of *Listeria* (*L. ivanovii*, *L. innocua*, *L. welshimeri*, *L. seegligeri* and *L. grayi*), most cases of listeriosis are caused by *L. monocytogenes*. *Listeria* are ubiquitously found in soil and water. Gastrointestinal symptoms may precede more serious forms of listeriosis or may be the only symptoms expressed. The two main severe clinical manifestations of listeriosis are sepsis and meningitis. People at highest risk include the elderly, the fetuses of pregnant women, and the immunosuppressed. *Listeria monocytogenes* is a gram positive, facultative anaerobic, and facultative intracellular bacterium. Its incubation time is at least seven days. Its ability to grow at temperatures as low as 0°C permits multiplication in refrigerated foods. *Listeria monocytogenes* is killed by pasteurization and cooking. It expresses a Beta hemolysin (hlyA gene) causing destruction of red blood cells.

Description: BactoReal[®] Kit *Listeria monocytogenes* is based on the amplification and detection of the hlyA gene of *L. monocytogenes* using real-time PCR. It allows the rapid and sensitive detection of DNA of *L. monocytogenes* from samples purified from either liquor, blood or other samples (e.g. with the QIAamp DNA Mini Kit).

PCR-platforms: BactoReal[®] Kit *Listeria monocytogenes* is developed and validated for the ABI PRISM[®] 7500 instrument (Life Technologies), LightCycler[®] 480 (Roche) and Mx3005P[®] QPCR System (Agilent), but is also suitable for other real-time PCR instruments.

Sensitivity and specificity: BactoReal[®] Kit *Listeria monocytogenes* has a sensitivity of 1 target copy/PCR reaction. The limit of detection (LoD95 = smallest number of copies of target DNA which can be detected in 95% of cases) is 9 target copies/reaction and was determined by several replicates around the detection limit. Specificity was tested on isolates of *B. paraptussis*, *B. pertussis*, *C. pneumoniae*, *E. coli*, *H. influenzae*, *L. pneumophila*, *L. innocua*, *M. pneumoniae*, *N. meningitidis*, *P. multocida*, *S. agalactiae* and *S. pneumoniae*. No cross reactions were observed. Furthermore, 41 *Listeria monocytogenes* isolates cultivated from food samples were analysed and correctly identified.

References: Nogva, H.K. et. al. 2000. Application of 5'-nuclease PCR for quantitative detection of *Listeria monocytogenes* in pure cultures, water, skim milk, and unpasteurized whole milk. Appl. Environ. Microbiol. 66: 4266-4271.

Detection of <i>Listeria monocytogenes</i>	Detection of internal positive control CR-3	Detection of internal positive control CR-1
<p>Amplification Plot</p> 	<p>Amplification Plot</p> 	<p>Amplification Plot</p> 
<p>ABI Prism® 7500: FAM channel, 530 nm 1:10 serial dilution of <i>L. monocytogenes</i> DNA</p>	<p>ABI Prism® 7500: Cy5 channel, 667 nm Internal positive control</p>	<p>ABI Prism® 7500: VIC channel, 554 nm Internal positive control</p>
		
<p>Mx3005P®: FAM channel 1:10 serial dilution of <i>L. monocytogenes</i> DNA</p>	<p>Mx3005P®: CY5 channel Internal positive control</p>	<p>Mx3005P®: HEX channel Internal positive control</p>
<p>Amplification Curves</p> 	<p>Amplification Curves</p> 	
<p>LightCycler® 480: FAM channel 1:10 serial dilution of <i>L. monocytogenes</i> DNA</p>	<p>LightCycler® 480: Cy5 channel Internal positive control</p>	

BactoReal®, MycoReal, ParoReal and ViroReal® Kits run with the same thermal cycling conditions. RNA and DNA material can be analysed in one PCR run.

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