



MICROCHIP REAL-TIME PCR KIT FOR IDENTIFICATION OF UROGENITAL DISEASES OF CATTLE

Identification of pathogens that cause infectious diseases of cattle is essential for correct diagnosis and treatment of infections. Currently used methods are laborious, time consuming, low-sensitivity assays that involve manual operations and thus do not achieve accuracy and high throughput requirements of the cattle industry. The LUMEX INSTRUMENTS real-time PCR analyzer AriaDNA® and microchips with lyophilized reagents offer simple, rapid and accurate determination of pathogens, matching cost-effectiveness and throughput requirements of the industry.

The microchips with lyophilized PCR reagents just need an addition of the test sample with a buffer into the individual reactors of the microchip thus significantly minimizing human error.



Microchip real-time PCR analyzer AriaDNA®

Advantages of AriaDNA® and microchip technology

- Rapid determination within 40 minutes
- Simultaneous screening of several pathogens in a number of samples
- Reduced consumption of sample and reagents
- Cost-effective diagnostics
- Minimized manual operations in preparation of PCR mixes
- Minimizing the risk of contamination
- Minimizing human error
- The microchips can be transported and stored at ambient temperature up to 6 months

Configuration of the microchip

LUMEX INSTRUMENTS has designed microchips pre-loaded with lyophilized PCR reagents for identification of 9 pathogens in cattle:

- *Chlamydia pecorum*
- *Chlamydia abortus*
- *Ureaplasma diversum*
- *Trichomonas foetus*
- *Campylobacter fetus*
- *Campylobacter jejuni*
- *Listeria monocytogens*
- *Leptospira interrogans*
- *Mycoplasma bovis*

Chl. pecorum Chl. abortus	ICS Ur. diversum	Trich. foetus Mycoplasma bovis	Leptospira interrogans Listeria monocyt.	Campylob. jejuni Campylobacter fetus	K+ K+
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K- K-	K- K-	K- K-	K- K-	K- K-	K+ K+

A microchip configuration for analysis of 2 samples (n=2): K+ positive control sample, K- negative control sample, ICS internal control sample



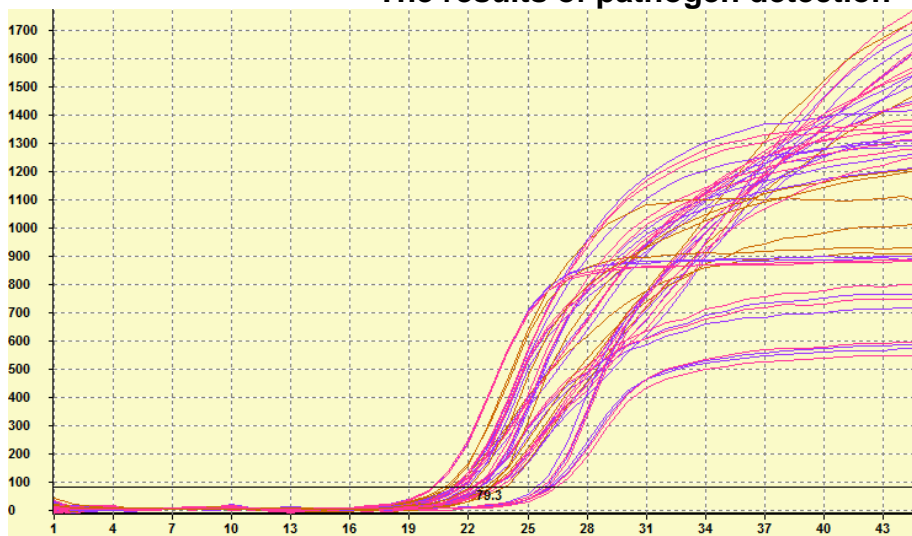
AriaDNA software

User friendly software designed to acquire and analyze real-time PCR data provides microchip description, instrument set up guidelines, PCR analysis settings and ready to print report generation. Analysis report is automatically generated with the selected layout.

Analysis Flow-Chart

- 1** Extract DNA from urogenital cattle samples
- 2** Mix extracted DNA samples with buffer and add them into the microchip reactors

The results of pathogen detection



Real-time PCR data for one sample (n=4) with full panel of 9 pathogens ($10^6 - 3 \times 10^4$ DNA copies/ μL). Detection limit equals 5×10^3 CFU in 1 mL of the sample.

- 3** Insert the microchip into the AriaDNA[®] analyzer and run the analysis via the software on a PC
- 4** Obtain real-time PCR results and print report in 40 minutes

The information and specifications in this publication are subject to change without notice.

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