



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:

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



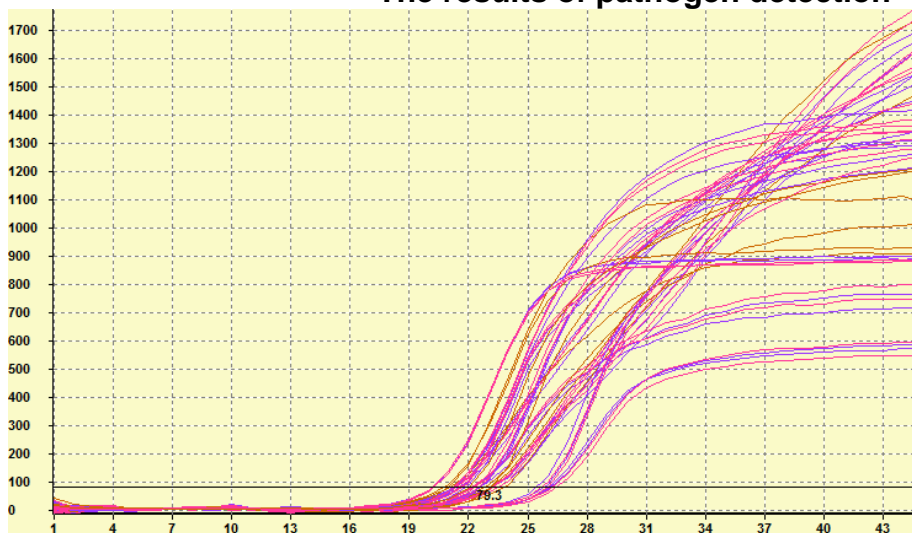
AriaDNA software

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

CBRN Protection TCT B.V.
Schoutenstraat 54
2596 SM 's-Gravenhage,
The Netherlands
Phone: (06) 51506684
E-mail: y.ryzhkai@cbnrprotectiontct.org
www.cbnrprotectiontct.org

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