



# Ready-to-run microchips for identification of African swine fever using real-time PCR analyzer AriaDNA

African swine fever virus (ASFV), a large double-stranded DNA agent causes complex, hemorrhagic, and contagious disease in domestic and wild swine leading to significant socio-economic impact. In the early diagnosis of ASFV, passive surveillance involving clinical signs and fatality data of swine is considered pivotal. However, for a rapid and early diagnosis, the surveillance must have adequate laboratory support in detection & identification of AFSV. The recommended tests for virus detection include enzyme-linked immunosorbent assay (ELISA), and PCR assays. Although ELISA allows large-scale testing of the samples, has been reported as having lower analytical sensitivity than that of conventional or real-time PCR tests.

To improve the desired rapidity, cost-effectiveness, sensitivity, and specificity of the detection process, Lumex is offering ready-to-run microchip kits with real-time PCR analyzer AriaDNA. This technology has ability to run pathogen testing both in the laboratory and on swine farms. In addition, for reliable results, a set of positive & negative controls for each of the pathogen, internal control (IC) as an internal inhibition monitor that is amplified in parallel with the target DNA are also included in the microchip.



## ADVANTAGES

- Microchip qPCR with 10 times lower reagent consumption
- Increased specificity for difficult templates thanks to uniform temperature in microchip wells
- Ready-to-run microchips with panels of the test pathogens minimizes operator errors
- Simplifies master mix preparation for the panels of pathogens - needs just addition of DNA sample into the microchip
- Fast temperature transitions complete qPCR run in less than 35 min and shorten qPCR analysis time to result
- Simple shipment & storage of the microchip kits thanks to stabilized lyophilized reagents
- Customizable panels of pathogens in the ready-to-run microchip



## USER FRIENDLY SOFTWARE

Designed to acquire real-time PCR data and allows simplified operation steps. It offers auto-interpretation of results in view of IC, allows manual analysis of data, and prints three layers of report in compliance with 21 CFR part 11 of the regulations.

## FLUORESCENCE DETECTION

AriaDNA 2 is two-channel analyser: 1. FAM/SYBR Green, and 2. ROX/CY5

**Channel 1 (FAM)** 1. *African Swine Fever Virus (ASF2)*

**Channel 2 (Cy5)** 1. Internal Control (IC)

### Test panel of pathogens



African Swine Fever Virus (ASF2-F); Internal control (IC-C), C- (Negative control sample); C+ (Positive control sample). Maximally 28 samples can be tested as n=1 in one microchip. The microchip can be tested as n=2 or more but the number of samples will correspondingly reduce.

### ANALYSIS FLOW CHART

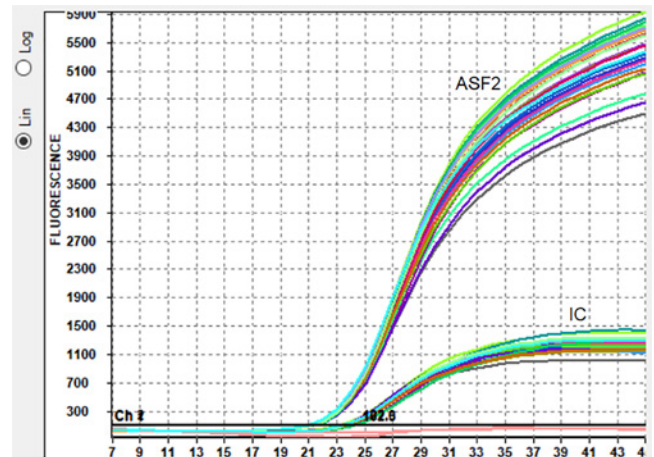
- 1 Extract DNA from the test samples using suitable DNA extraction and purification kit
- 2 Add extracted DNA samples into the microchip reactors
- 3 Insert the microchip into the AriaDNA analyzer and run the analysis with the software on a computer
- 4 Obtain real-time PCR results and print report in 35 minutes

### RESULTS

- 1 Real-time PCR data for up to 28 samples with a panel of 1 pathogen
- 2 Detection limit equals  $1 \times 10^3$  PFU in 1 mL of the sample

For research use only (RUO).

### Amplification plots



1. ASF2-F (African Swine Fever Virus)
2. IC (Internal control)



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