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*Towards  
the veterinary  
diagnostics  
of the  
future*

Main topic : Animal Health

## **VetMAX™ African Swine Fever Virus Detection Kit 2.0 - Rapid and Reliable new Molecular Diagnosis kit of African Swine Fever Virus (ASFV) by Real-Time PCR**

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African Swine Fever Virus (ASFV) is a notifiable, highly contagious disease becoming a serious threat worldwide. As there is still no vaccine or treatment available, monitoring and controlling of the disease is of outmost importance. Since 2015, our existing ASF qPCR product (Screening kit, P/N A28809) has helped to control ASFV worldwide. The evolution of the virus and the needs on the field led us to develop a 2.0 version, improving the kit capabilities for high throughput management with fast time to results, consolidating diagnostic sensitivity, allowing environmental testing and complying with market needs of the European regions.

The Applied Biosystems™ VetMAX™ African Swine Fever Virus Detection Kit 2.0 (P/N A57008) enables detection of current ASFV circulating strains by real-time PCR on porcine and wild species. This diagnosis tool is a triplex screening kit composed of a ready-to-use master mix with an upgraded ASFV design. It also includes dual Internal Positive Controls (exogenous and endogenous).

The diagnostic can be delivered within 1 hour using the Fast workflow. An extraction method was optimized using the Applied Biosystems™ MagMAX™ CORE Nucleic Acid Purification Kit with the KingFisher instrument: it allows up to 96 simultaneous extractions in 22 minutes (plus preparation time). A Fast amplification program was validated, running in 40 minutes.

The VetMAX™ ASFV 2.0 PCR Kit detects 53 reference positive samples provided by the EURL ASFV (CISA-INIA). No cross-reactivity was detected on 25 various viruses, bacteria, and parasites. The limit of detection (LoD) is 16 copies/PCR. The experimental LoD was validated for serum and blood (800 copies/ml) and tissue/organ (1000 copies/ml). Pools up to 20 were evaluated on 12 bloods, 12 serum and 6 tissue samples. The validation was performed on 603 samples (blood, serum, organs, oral fluids, meat juice). 269 ASF-positive and 334 ASF-negative samples, including domestic pigs and wild species (wild boars, warthogs, bushpigs and dwarf pigs), were collected from Spain, Italy, France.

The VetMAX™ ASFV 2.0 PCR Kit is a reliable and rapid qPCR tool for the detection of ASFV DNA from serum/blood, tissue, oral fluid and meat juice samples from pigs and wild species. Its performance fulfils all the validation criteria required by the NF U-47-600-2 standard. The presence of two internal controls reduces the risk of false negative results and helps to validate purification and amplification steps, whatever the sample type. The kit sensitivity and rapidity support the early detection of the virus in order to contribute to the free-of-disease status of pigs for trade. It provides a useful tool for control management of the spread of disease and permits the organization of an efficient monitoring in outbreak situation.

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