

Detection of African swine fever virus in Sabah by loop mediated isothermal amplification (lamp) assay

ABSTRACT

African swine fever (ASF) is a highly contagious disease that can cause severe illness and a high mortality rate in pigs. It is caused by African swine fever virus (ASFV), from the genus *Asfivirus* and family *Asfarviridae*. This disease has caused devastating outbreaks in various regions across the world. The first ASF outbreak in Malaysia was reported on February 2021, that affected three districts in Sabah: Kudat, Kota Marudu and Beluran. This virus has since spread to other district across Sabah infecting domestic and wild bearded pigs. These outbreaks are often difficult to control due to the lack of access to molecular laboratories. A fast and sensitive pointof- care (POC) test is needed to detect the presence of ASFV. This paper presents the development of a colorimetric loop-mediated isothermal amplification (LAMP) assay to aid in the detection of ASFV samples. The performance of this assay was assessed in 10 clinical ASFV samples confirmed by two veterinary diagnostic laboratories. LAMP was also evaluated and in agreement with end point PCR. The removal of DNA extraction steps provides an extra advantage for rapid detection of ASFV.