

Comparison of Sybr Green I, ELISA and conventional agarose gel-based PCR in the detection of infectious bursal disease virus

ABSTRACT

The current available molecular method to detect infectious bursal disease virus (IBDV) is by reverse transcriptase-polymerase chain reaction (RT-PCR). However, the conventional PCR is time consuming, prone to error and less sensitive. In this study, the performances of Sybr Green I real-time PCR, enzyme-linked immunosorbent assay (ELISA) and conventional agarose detection methods in detecting specific IBDV PCR products were compared. We found the real-time PCR was at least 10 times more sensitive than ELISA detection method with a detection limit of 0.25 pg. The latter was also at least 10 times more sensitive than agarose gel electrophoresis detection method. The developed assay detects both very virulent and vaccine strains of IBDV but not other RNA viruses such as Newcastle disease virus and infectious bronchitis virus. Hence, Sybr Green I-based real-time PCR is a highly sensitive assay for the detection of IBDV.

Keyword: Infectious bursal, disease virus, Real-time PCR, ELISA PCR