Antiviral Activity of *Nepeta cataria* extract on Field Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) Strain

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Abstract

PRRS is characterized by reproductive failure of sows and respiratory problems of nursery and growing pigs. PRRS virus have been reported to modulate the immune response of host. Present management strategies mainly focus on the prevention of infection using vaccination but are not sufficient to eradicate the virus and provide complete immunity. Previous studies have discovered a few natural compounds and compositions that have antiviral activities on PRRSV. Traditionally, *N. cataria* is sedative, soporific and also is used to relive gastrointestinal and respiratory disorders such as diarrhea, cough, asthma, and bronchitis. The aim of this study is to evaluate the antiviral ability of watered *N. cataria* extract against PRRSV infection on MARC-145 cells. An immunofluorescence assay (IFA) was detect viral replication, MTT assay was employed for analysis of cytotoxicity test, quantitative polymerase chain reaction (qPCR) were conducted to detect the effect of extract on viral loads and the antiviral activity assay was explained by the relative value (%). The results of cytotoxicity test were observed the maximum non-cytotoxic concentration (MNTC) at 2^{-3} dilution. The antiviral activity assay indicated that relative value (%) of *N. cataria* extract could to be their inhibiting of highest significantly potential anti-PRRSV activity of both field 763-strain and MD001-strain than positive control group were 62.34, 67.31% respectively at MNTC ($P \leq 0.01$). This study indicates that *N. cataria* potentially inactivates field PRRSV strain and inhibits replication of field PRRSV strain in vitro and may be useful for future application of medicinal plants to the PRRSV control and prevention in the pig farms.

Keywords: field PRRSV strains, plant extracts, qPCR

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