

C PROTEIN OF PPRV INHIBITS THE TYPE I IFN SIGNALING PATHWAY

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Peste des petits ruminants Virus (PPRV) is an important pathogen which causes a fatal disease to small ruminants such as goat and sheep. It threatens the economics of livestock industry, mainly in developing countries. In order to investigate PPRV C-mediated innate immune response, recombinant plasmids were first constructed to express the non-structural protein C. The results from a dual-specific luciferase reporter assay showed that PPRV C protein significantly inhibits retinoic acid-inducible gene I CARD (RIG-I N)-induced interferon- β (IFN- β), type I interferon (IFN) stimulated response element (ISRE) and nuclear factor kappa-B (NF- κ B) activities. Subsequently, the results of qRT-PCR showed that the expression of IFN- β , and its downstream interferon stimulated gene 56 (ISG56) and ISG15, C-X-C motif chemokine CXCL-10 were down-regulated at the transcriptional levels, suggesting PPRV C protein inhibits the RIG-I-mediated signalling pathway. Furthermore, the co-immunoprecipitation experiment was performed to test the interaction between PPRV C and key molecules in the RIG-I signalling pathway. The results indicated that PPRV C protein specifically interacts with mitochondrial antiviral signalling (MAVS) protein. In addition, PPRV C protein was co-transfected dose-dependently with RIG-I or MAVS into HEK293T cell. The Western blotting data showed that the high expression of PPRV C protein could inhibits the expression of MAVS protein, but not RIG-I. As conclusion, our results were demonstrated that the expression of PPRV C protein inhibits the activation of the IFN- β promote in cells which subsequently causes the virus to be more virulent. So, our study reveals that the target of PPRV C associated with the RLRs signalling pathway which can be used for eradication of PPRV worldwide.

Biography

Linjie Li is the Postgraduate student in Northwest Minzu University, Lanzhou, China. She is specialised in animal molecular virology and molecular immunology

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