Application of a Real-time Reverse Transcription Loop Mediated Amplification Method to the Detection of Rabies Virus in Arctic Foxes in Greenland.

Reverse transcription loop mediated amplification (RT-LAMP) offers a rapid, isothermal method for amplification of virus RNA. In this study a panel of positive rabies virus samples originally prepared from arctic fox brain tissue was assessed for the presence of rabies viral RNA using a real time RT-LAMP. The method had previously been shown to work with samples from Ghana which clustered with cosmopolitan lineage rabies viruses but the assay had not been assessed using samples from animals infected with rabies from the arctic region. The assay is designed to amplify both cosmopolitan strains and arctic-like strains of classical rabies virus due to the primer design and is therefore expected to be universally applicable independent of region of the world where the virus is isolated. Of the samples tested all were found to be positive after incubation for 25 to 30 minutes. The method made use of novel enzymology from OptiGene but fluorescence reads were performed in a Stratagene MX instrument. The identity of the product was confirmed using melt analysis with all products melting at temperatures between 87.1 and 88.2oC, similar to a rabies virus positive control. This demonstrates that rabies virus of arctic origin virus can be detected using RT-LAMP and the method reported is more rapid than the real-time RT-PCR. Further arctic fox samples are under analysis in order to confirm these findings.

General information
Publication status: Published
Organisations: Sektion for Eksotiske Virussygdomme, Division of Virology, National Veterinary Institute, Animal Health and Veterinary Laboratories Agency
Contributors: Wakeley, P., Johnson, N., Rasmussen, T. B.
Publication date: 2011
Peer-reviewed: Yes
Keywords: Rabies, Cosmopolitan, Arctic-like, LAMP, Fox
Source: orbit
Source ID: 316384
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2011 › Research › peer-review