Evaluation of rabies strain CVS-11 antigen for rabies fluorescent antibody test

AH Norazura, AH Nurshuhada, R Muhamad Asyraf, R Nur Anis Adilah, AY Ahmad Fikri, Z Zamila, WOB Wan Normaziah, MS Faizah Hanim

Veterinary Research Institute (VRI), 59 Jalan Sultan Azlan Shah, Ipoh, Perak, Malaysia

ABSTRACT

Introduction: Re-emerging of rabies in Peninsular Malaysia has been recorded since 2015. Therefore, it is essential to conduct an evaluation of the positive controls in order to ensure the sensitivity and specificity of the positive control slide for the rabies fluorescent antibody test (FAT). **Objective:** The objective of this study is to evaluate the sensitivity and specificity of the positive control brain for the rabies fluorescent antibody test (FAT). **Materials and Method:** A total of 32 Swiss albino mice aged 1-3 days were utilized and divided into two groups: 30 mice for the treatment group and two for the control group. The mice along with their dam were housed in individually ventilated cage at the BSL3-Ag and acclimatized for 3 days prior to rabies inoculation. The positive control rabies brain was obtained from reference strain CVS-11 ATCC of animal origin. Prior to inoculation, all mice were anaesthetized using 1% isoflurane and 30 µl rabies inoculum was administered intracerebrally using a 27G Terumo® Insulin syringe with ¾' needle. Meanwhile, the control group was inoculated intracranially with distilled water in the same amount as the treatment group. Any abnormalities and deaths were monitored and recorded for 21 days post-inoculation. Following this, all mice were humanely culled with an overdose of isoflurane and subjected to brain sampling. Fluorescent antibody tests and nested RT-PCR were conducted on all brain samples from the mice. **Results:** As expected, the results showed that the treatment group tested positive for rabies based on the intensity and distribution of rabies antigen on the slide. Conversely, the control group tested negative for rabies. The correlation between FAT and nested RT-PCR are consistent. **Conclusion:** In conclusion, the treatment brain demonstrated high sensitivity and specificity confirming its suitability for reliable and repeatable fluorescent antibody testing.