應用快速螢光灶抑制試驗(RFFIT)檢測野生動物狂犬病中和抗體及評估狂犬病疫苗效力

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摘要

為評估市售狂犬病不活化疫苗及口服疫苗對野生動物之保護效力及監測野生動物狂犬病抗體，利用快速螢光灶抑制試驗（rapid fluorescent focus inhibition test, RFFIT），檢測狂犬病病毒中和抗體，結果顯示 4 種市售犬貓用狂犬病不活化疫苗（A、B、C、D）免疫鼬獾後，其中和抗體於免疫後 2 週陽轉（0.5 IU/mL 以上），A、B、C 三組於免疫後第 6 個月抗體陽性率均為 83.3%（5/6），D 組抗體於免疫後第 4 個月其抗體均降至 0.5 IU/mL 以下；鼬獾口服疫苗試驗，中和抗體於免疫後 2 週陽轉，其抗體陽性率為 26.7%（4/15），免疫後 1 個月陽性率為 40%（6/15）；市售犬貓用狂犬病不活化疫苗免疫白鼻心結果顯示中和抗體可於免疫後 2 週陽轉且無不適反應；野生動物狂犬病血清學檢測結果，包含鼬獾、食蟹獴、白鼻心及臺灣獼猴計 46 件，觀察到神經症狀的鼬獾有 2 隻狂犬病中和抗體陽性，且其中 1 隻鼬獾發病死亡送檢後經螢光抗體檢測法（fluorescent antibody test, FAT）檢驗確診為狂犬病陽性。

Application of rapid fluorescent focus inhibition test (RFFIT) for determining rabies neutralising antibody of wild animals and evaluating rabies vaccine efficacy

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Abstract

For understanding efficacy of commercial inactivated rabies vaccines and oral vaccine and the serological surveillance of rabies in wildlife, the rapid fluorescent focus inhibition test (RFFIT) for determining the levels of antibody to rabies virus in serum was introduced. After ferret badgers were vaccinated with each of 4 commercial inactivated rabies vaccines (vaccines A, B, C, and D), prescribed for dog and cat, seroconversion (titer >0.5 IU/mL) in vaccinated ferret badgers were detected at 2 weeks post-vaccination. The seropositive rates of ferret badger groups A, B, C were 83% (5/6) at 6 months post-vaccination in comparison with in the group D, which was decreased over time and all titers were less than 0.5 IU/mL after 4 months post-vaccination. In the efficacy test of oral vaccine, seroconversion rate was 26.7% (4/15) at 2 weeks post-vaccination and 40% (6/15) at 1 month post-vaccination. In gem-faced civet, the neutralizing antibody (titer > 0.5 IU/mL) can be elicited after 2 weeks post-vaccination with no observed adverse effect. Forty-six sera from ferret badger, crab-eating mongoose, gem-faced civet and Formosan macaque were tested by the RFFIT. Two sera of ferret badgers which showed nervous clinical signs and illness were tested positive. One of the ferret badgers died and tested positive by fluorescent antibody test.