台灣鼬獾狂犬病病毒序列及病原性分析

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摘要

我國自 1961 年起即為狂犬病非疫區，曾是全世界少數狂犬病非疫區之一，然從 102 年 7 月 16 日確診鼬獾感染狂犬病病例起，截至目前為止，計有 462 例鼬獾、1 例錢鼠、1 例幼犬及 5 例鼻心確診感染狂犬病，目前仍以鼬獾為國內狂犬病最主要感染及保毒動物。依據病毒基因序列之分子演化分析結果顯示我國鼬獾狂犬病病毒已形成一獨立分群，存在於鼬獾族群中已達 50～100 年之久。凡此表示此病毒可能是適應於鼬獾的病毒株，雖然狂犬病病毒已知可以感染所有的溫血動物，但是由國外的經驗顯示適應於某一物種的狂犬病病毒，對於其他物種的致病力因物種之不同而可能有所差異。以野外感染狂犬病病毒之鼬獾唾液腺及腦製備之乳劑，經腦內接種 3 至 4 週齡小鼠進行病毒力價測定，結果病毒力價約為 $10^{2.5}$micLD$_{50}$/ml。以此病毒乳劑接種小鼠進行病原性探討，結果顯示經腦內接種之潛伏期長達 2 週，病程長達 2 至 5 週，肌肉接種($10^{1.5}$micLD$_{50}$/ml)之小鼠經 180 日觀察，結果未發病，腦組織經狂犬病螢光抗體染色結果為陰性。

Sequence and Pathogenesis Analysis of Taiwan

Ferret-Badger Rabies Virus

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Abstract

Taiwan had been listed as a rabies-free region since 1961, and was also one of the limited rabies-free countries in the world until the deadly disease was confirmed in Formosan ferret-badgers in July, 2013. There have been total 462 diagnosed cases in ferret-badger, 1 in shrew,1 in puppy, and 5 in gem-faced civet. Ferret-badgers are currently major infection animals and the disease reservoirs in Taiwan. Based on the phylogenetic analysis results, Taiwan ferret-badger rabies virus has evolved into an independent group and existed in the ferret-badger population for 50-100 years. This appears the virus strain has adapted to ferret-badgers. Although rabies is a virus known to affect all the homoeothermic animals with foreign experts' experiences of rabies research, it suggests the pathogenicity of a rabies virus adapted to a specific animal species could vary with different animal species. In addition, the suspension samples prepared from salivary glands and brains of field-infected ferret-badgers were inoculated into 3-4 weeks old mice intracranially for virus titration, and all the virus titers were about $10^{2.5}$micLD_{50}/mL. For following pathogenesis investigation with the virus suspensions, the incubation period through intracranial route was approximately 2 weeks, and the disease course was as long as 2-5 weeks. As to intramuscular inoculation with virus titers of $10^{1.5}$mic LD_{50}/mL, no clinical symptoms showed in all mice after 180 days observation. All the fluorescence-antibody staining of the mouse brain samples demonstrated negative results.