

鯉魚水腫病毒感染症之診斷與病例報告

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摘要

鯉魚水腫病毒感染症(Carp edema virus disease)又稱為錦鯉昏睡病(Koi sleepy disease)，在臨床上均可造成錦鯉與鯉魚大量損失。本病最初在1970年代日本的錦鯉養殖場發現，近年來在美國、歐洲多個國家、巴西、印度、中國及韓國均有病例發生。臨床症狀可見病魚有昏睡、眼球凹陷、身體及鰓絲浮腫伴有黏液增多，偶有體表出血潰瘍等情形。從電子顯微鏡下可觀察到病魚鰓上皮細胞質內有痘病毒樣病毒顆粒，目前尚無法成功分離出病毒。診斷主要以PCR檢測其核心蛋白P4a的基因序列，並可依此分出基因I型、基因IIa型、基因IIb型等三個族群。

本所於107年5月8日接獲宜蘭縣動植物防疫所後送的錦鯉病例，經PCR診斷及組織病理學檢查確診為鯉魚水腫病毒感染症，將PCR產物的基因序列與NCBI資料庫中相關序列進行比對，使用近鄰相接法(Neighbor-joining Methods)建構演化樹，可見該病毒的基因分型為IIa型。

Diagnosis and case reports of carp edema virus disease

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Abstract

Carp edema virus disease (CEVD), also known as koi sleepy disease (KSD), is associated with outbreaks of clinical disease in common carp and koi (*Cyprinus carpio*). Since the first report of KSD in Japan koi farm in the 1970s, the disease has spread to many countries including USA, several European countries, Brazil, India, China and Korea. Clinical signs of KSD include lethargic behavior, sunken eyes, swelling bodies and gills with thick mucus layers, occasionally skin alterations. Examination of the infected gill tissue samples by transmission electron microscopy revealed hypertrophic cells containing poxvirus-like particles within the cytoplasm. Up to know, the virus cannot be isolated in an extensive range of cell lines from different fish species. The main detection method for the virus is PCR-based diagnostics on the core protein *P4a* gene and the analyses of sequences indicate the genetic distribution into genogroups I, IIa and IIb.

Animal and Plant Disease Control Center Yilan County transferred a clinical koi case to AHRI laboratory on 8th May, 2018. By molecular detection and histopathologic examination confirmed the etiology is CEV. Multiple alignment and phylogenetic analysis of all other CEV sequences of common carp and koi carp from NCBI by neighbor-joining methods revealed that the CEV belonged in genogroups IIa.