

# 禽類副黏液病毒分子診斷學研究

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## 摘要

禽類副黏液病毒 (Avian paramyxovirus, APMV) 屬於副黏液病毒科中的 *Avulavirinae* 亞科，目前已有 22 型不同的 APMV 病毒從世界各地的禽鳥分離出。由於傳統血清學具非特異之交叉反應以及複雜標準抗原及抗體之製備，因而本研究建立分子診斷技術以鑑定 APMV 分離株。包括 APMV 的 RNA 依賴性 RNA 聚合酶基因巢式聚合酶鏈反應、APMV-1 核蛋白基因即時反轉錄聚合酶鏈反應及融合蛋白基因反轉錄聚合酶鏈反應。於 2009 至 2020 年共鑑定 111 株 APMV，其中 57 株 APMV-1、1 株 APMV-2、25 株 APMV-4、8 株 APMV-6、2 株 APMV-12、2 株 APMV-21 及 16 株 APMV-22。本研究建立的分子檢測方法提供了快速、高敏感性與高特異性的 APMV 病毒鑑定，未來將定期評估與更新引子與探針序列，以確保檢測方法能檢出新興 APMV 病毒。

# **Molecular Diagnostics of Avian Paramyxoviruses**

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## **Abstract**

Avian paramyxoviruses (APMV) belong to the subfamily *Avulavirinae* within the family *Paramyxoviridae*. APMVs consist of twenty-two known species and are regularly isolated from a wide variety of avian species from around the world. Since conventional serology sometimes produces non-specific cross-reactivity and the preparation of standard antigens and antibodies are labor-intensive, three molecular diagnostic techniques were established in this study to identify APMV: a nested RT-PCR targeting the RNA-dependent RNA polymerase gene, a real-time RT-PCR targeting the APMV-1 nucleoprotein gene, and an RT-PCR targeting the fusion protein gene. 111 APMV isolates were identified from 2009 to 2020, with strains comprising 57 APMV-1, 1 APMV-2, 25 APMV-4, 8 APMV-6, 2 APMV-12, 2 APMV-21 and 16 APMV-22. Here we present rapid, highly sensitive and specific diagnostic techniques to identify APMV isolates. In the future, primer and probe sequences will be regularly evaluated and updated to ensure the detection of newly emerging APMV viruses.