Determining Influenza Virus Shedding in Different Time Points in Madin Darby Canine Kidney Cell Line

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Background & Objectives: Since cell supernatants are harvested after culture and tested for the presence of influenza infectious viruses, the residual infectious viruses may still be present immediately after virus inoculation and washing cells. This observable fact may lead to a false positive in reporting virus infectivity assay.

Methods: In the present research, influenza virus progeny production in Madin Darby canine kidney (MDCK) cells with Multiplicities of Infection (MOI) in different time points was investigated and the results were analyzed by end point tests and immune florescence assay.

Result: The amount of residual virus could be influenced by the MOI, virus ligands and cell receptors affinity, cell density and permissiveness on the virus attachment level. When the higher amount of virus MOI used, we can get much higher titers of residual virus. These effects are probably reflecting the presence of unattached viruses to cell receptors or perhaps rebounded viruses from cell receptors.

Conclusion: In conclusion, the cell-based procedures proved to be useful tools for monitoring of influenza virus switching from transcription to replication and release of the virus particles. They cannot be carried out rapidly, but are as sensitive and specific as the molecular assays.

Keywords: Influenza Virus; MDCK; Shedling