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Outbreaks of Influenza A Virus in Farmed Mink (*Neovison vison*) in Denmark: Molecular characterization of the involved viruses

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Influenza in mink (*Neovison vison*) is assumed to be rare, but outbreaks have previously been reported in farmed mink. The first report was from Swedish mink farms in 1984 and the second was reported from Canadian mink farms.

In 2009, influenza A of the subtype H3N2 was detected in several Danish mink farms with respiratory symptoms. Full-genome sequencing showed that the virus was a human/swine reassortant, with the H and N gene most related to human H3N2 viruses circulating in 2005. The remaining 6 genes were most closely related to H1N2 influenza viruses circulating in Danish swine. This virus had not previously been described in swine, mink nor humans. PCRs assays specifically targeting the new reassortant were developed and used to screen influenza positive samples from humans and swine in Denmark with negative results. Thus, there was no evidence that this virus had spread to humans or was circulating in Danish pigs.

In 2010 and 2011, influenza virus was again diagnosed in diseased mink in a few farms. The genetic typing showed that the virus was similar to the pandemic H1N1 virus circulating in humans and swine. The H3N2 virus was not detected in 2010 and 2011.

Taken together, these findings indicate that mink is highly susceptible for influenza A virus of human and swine origin and may therefore act as a potential host/reservoir for influenza A viruses.