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Novel reassortant swine influenza viruses are circulating in Danish pigs

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The Danish surveillance program for influenza A virus in pigs has revealed that two novel reassortant swine influenza viruses may now be circulating in the Danish swine population, since they each have been detected in at least two submissions from different herds in 2011 as well as in 2012.

One of the reassortant viruses comprised a HA gene similar to H1 of H1N1 avian-like swine influenza virus (SIV) and a NA gene most closely related to N2 gene of human H3N2 influenza virus that circulated in humans in the mid 1990s. The internal genes of this reassortant virus with the subtype H1avN2hu all belonged to the H1N1 avian-like SIV lineages. Until now this novel virus H1avN2hu has only been detected in Danish swine.

The other novel reassortant virus contained the HA gene from H1N1pdm09 virus and a NA gene similar to the N2 gene of H3N2 SIV that have been circulating in European swine since the mid 1980s. The N2 gene of this new reassortant virus could also have been donated by the reassortant H1N2 SIV with an avian-like HA gene which is very common in Danish pigs and has been circulating since 2003. The internal genes of this reassortant virus with the subtype H1pdm09N2sw all belonged to the pandemic H1N1pdm09 influenza virus lineage. Swine influenza virus with a similar subtype to H1pdm09N2sw has previously been found in pigs in Italy and Germany. Detailed analyses of viral genes will further elucidate the relationship between these new swine influenza viruses found in the different countries.

In addition, several sporadic reassortant swine influenza viruses comprising different constellations of internal genes from known circulating swine influenza viruses were found. Future full genome studies will reveal if some of these reassortant viruses also will be established in the Danish pig population.

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