

Zoonoses

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Pigs infected with pandemic influenza virus A/H1N1 lack cross reactive HI antibodies against Eurasian swine influenza viruses of subtype H1N1

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Experimental studies confirmed observations in the field that naive pigs are susceptible to pandemic influenza virus A/H1N1 and that the virus readily transmits between them (Lange et al., 2009; Brookes et al., 2010). Kyriakis et al. (2010) investigated the occurrence of serological cross-reactivity with pandemic influenza A/H1N1 after infection of pigs with European SIVs. Hemagglutination inhibiting (HI) antibodies were undetectable after a single infection with European SIVs but they were found in all dually, consecutively European SIV-infected pigs. These data suggest that pigs with infection-induced immunity to different European SIV subtypes may be at least partially protected against pandemic influenza A/H1N1. Broad serological cross-reactivity with pandemic influenza A/H1N1 in European pigs in the field further supports this notion (Dürwald et al., 2010).

In contrast to these studies we investigated the pandemic influenza virus A/H1N1 infection-induced cross-reactive immunity in pigs to 10 different endemic European SIVs of subtype H1N1 collected between 1979 and 2010. The results revealed that pigs infected with the pandemic influenza virus A/H1N1 do not develop cross-reactive HI antibodies to any of the Eurasian SIVs even when tested with hyper-immune sera, obtained from pigs immunised three times. Although these sera need to be further investigated for cross-reactive VN and NI antibodies, the results so far suggest that pigs infected with pandemic influenza A/H1N1 are not protected against infection with endemic European SIVs.

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