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Atypical pestivirus "Bungowannah": Cell tropism and a first serological survey in Germany

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Bungowannah virus was first detected in 2003 in New South Wales, Australia, as the causative agent of sudden death and myocarditis in young piglets and reproductive disorders in sows. It represents the most divergent strain among the group of atypical pestiviruses. The origin, the distribution and the genuine host of the virus is still unknown.
We performed a serological study including about 600 pig sera from 56 farms from 5 Federal States in Germany. Sera were tested in an indirect immunofluorescence assay using PK15 cells and cell culture adapted Bungowannah virus. All tests were clearly negative and there was no indication of a Bungowannah virus presence or history in German pig farms.
Furthermore, cell culture studies were performed to get more information about the host specificity. Numerous cell lines of bovine, ovine, porcine, human, murine, green monkey, hamster, rabbit, bat and kangaroo origin were tested for virus permissivity in comparision to the other pestivirus species including atypical isolates like the "HoBi", "giraffe" and "pronghorn" strains. Surprisingly, with the exception of some human cell lines, BHK-21 cells, a pestivirus refractory MDBK clone (CRIB) and kangaroo cells, Bungowannah virus could be propagated in all cells tested. In contrast to other pestiviruses, Vero cells and two different bat cell lines were fully permissive, indicating a much broader cell spectrum of Bungowannah virus and also suggesting a host spectrum different to other pestiviruses. Finally, data about the cell tropism of chimeric BVDV viruses, carrying the "Bungowannah" virus structural proteins will be presented and discussed.

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