Rats from breeding colonies as pathogen reservoirs

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Rats are a reservoir for various pathogens with zoonotic potential, e.g. *Leptospira* spp. and *Acinetobacter baumannii*, as well as for pathogens with no or unknown zoonotic potential such as Rattus norvegicus polyomavirus 1 (RnorPyV1) or rat hepacivirus. Rats infected with *Leptospira* do not show any clinical symptoms whereas in humans disease manifestations range from mild to severe or fatal. Infections of rats with the human pathogen *Acinetobacter baumannii* have only been described in animal models but not in wild rats. RnorPyV1 was initially detected in a German rat breeding colony and in German wild rats.
To determine the array of pathogens present in pet rats, wild rats and rats in breeding colonies, the network Rat-borne pathogens (RaBoPa) was established. In a pilot study 59 Norway rats (*Rattus norvegicus*) and 68 Black rats (*Rattus rattus*) from three breeding colonies were included. The rats were examined with pathogen-specific assays for 11 pathogens and with open-view methods, including isolation approaches.
The PCR-based investigations resulted in the detection of RnorPyV1-DNA in 36/72 (50%) tested animals (28/59 Norway and 8/68 black rats). There was no *Leptospira*-DNA positive rat of 127 investigated. *Acinetobacter baumannii* was isolated in tracheal samples of five rats (4 Norway rats, 1 black rat) from 125 analysed animals (3.2%). A few rat hepacivirus-positive animals (3/127; 2.4%) were detected.
In conclusion, the results indicate a high infection rate of RnorPyV 1 in both rat species within different breeding colonies.

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