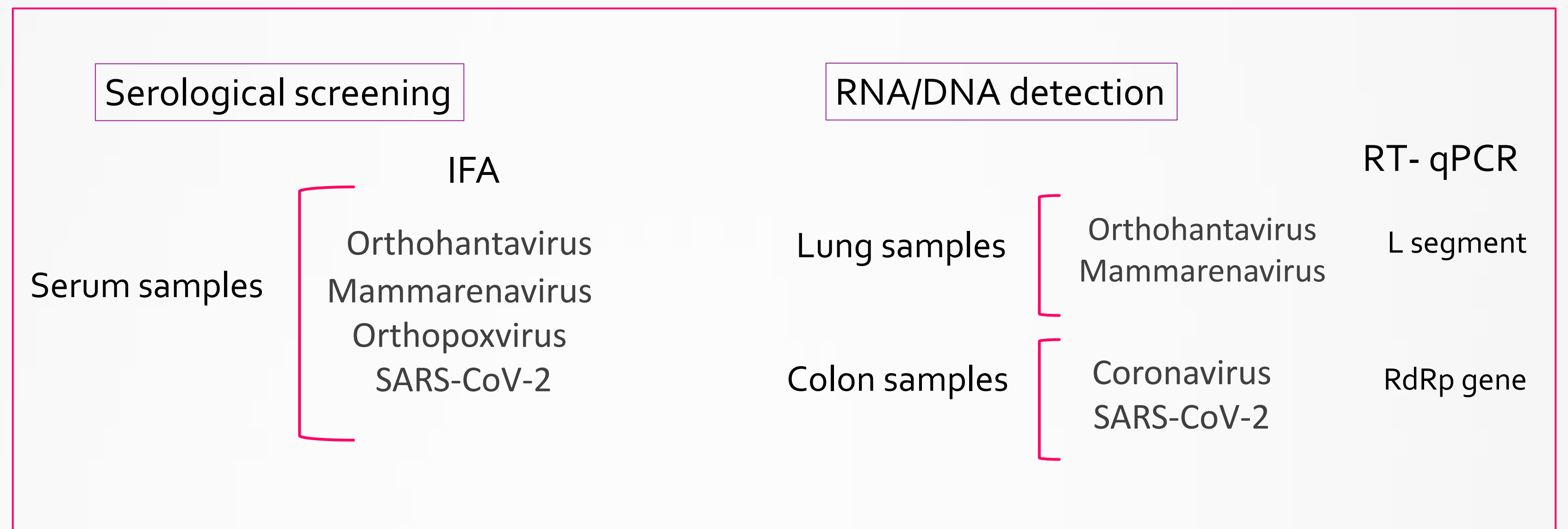


# Potentially zoonotic viruses detected in wild rodents from Antwerp, Belgium

V.C. Colombo<sup>1,2</sup>, H. Alburkat<sup>3</sup>, V. Bourret<sup>3</sup>, L. Dutra<sup>3</sup>, M. Hubert<sup>1</sup>, T. Sironen<sup>3</sup>, S. Philtjens<sup>1</sup>, J. Elst<sup>1</sup>, N. Charbonnel<sup>4</sup>, V. Sluydts<sup>1</sup> and H. Leirs<sup>1</sup>  
**(1)** Evolutionary Ecology Group, Department of Biology, University of Antwerp, Wilrijk, Belgium **(2)** Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Buenos Aires, Argentina **(3)** University of Helsinki, Helsinki, Finland **(4)** CBGP, INRAE, CIRAD, IRD, Institut Agro, University of Montpellier, France

[Valeria.colombo@uantwerpen.be](mailto:Valeria.colombo@uantwerpen.be)

As part of the BiodivERsA “Bioroddis” project rodents were captured every autumn and spring in Antwerp, Belgium between October 2020 and April 2022. Six different sites classified as “forest” (Fort 5, Zevendonk), “urban park” (Fort 6, Rivierenhof) and “zoo” (Antwerp zoo, Planckendael) were surveyed. Serum and tissue samples were collected from 987 *Myodes glareolus*, *Apodemus sylvaticus*, and *Microtus agrestis* and analyzed for the detection of Orthohantavirus, Mammarenavirus, Orthopoxvirus and Coronavirus.



### Preliminary Results

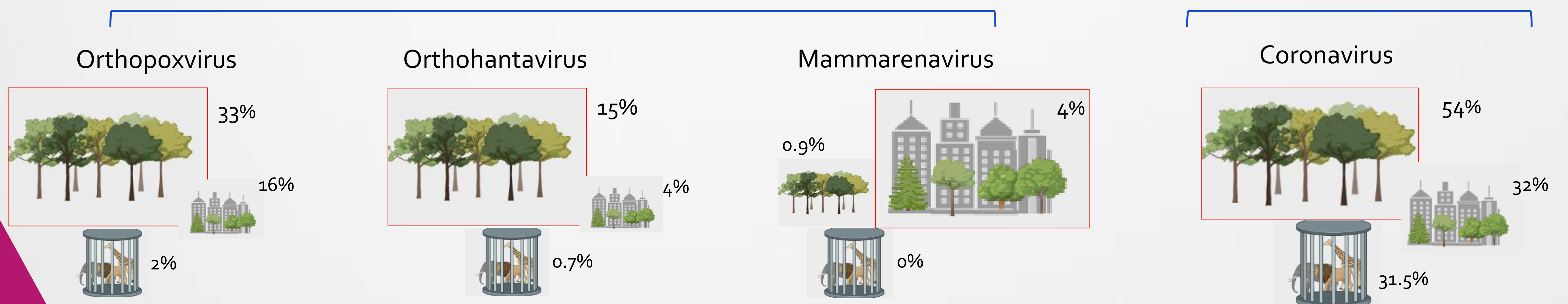
#### Seroprevalence

Total tested		
516 rodents	Orthopoxvirus	19.5%
Autumn 2020 and Spring 2021	Orthohantavirus	7.9%
	Mammarenavirus	1.5%
275 rodents	1 <i>Apodemus sylvaticus</i> from an urban park was IFA-positive for SARS-CoV-2, but was negative by seroneutralisation test	
Spring 2021		

#### RT-qPCR

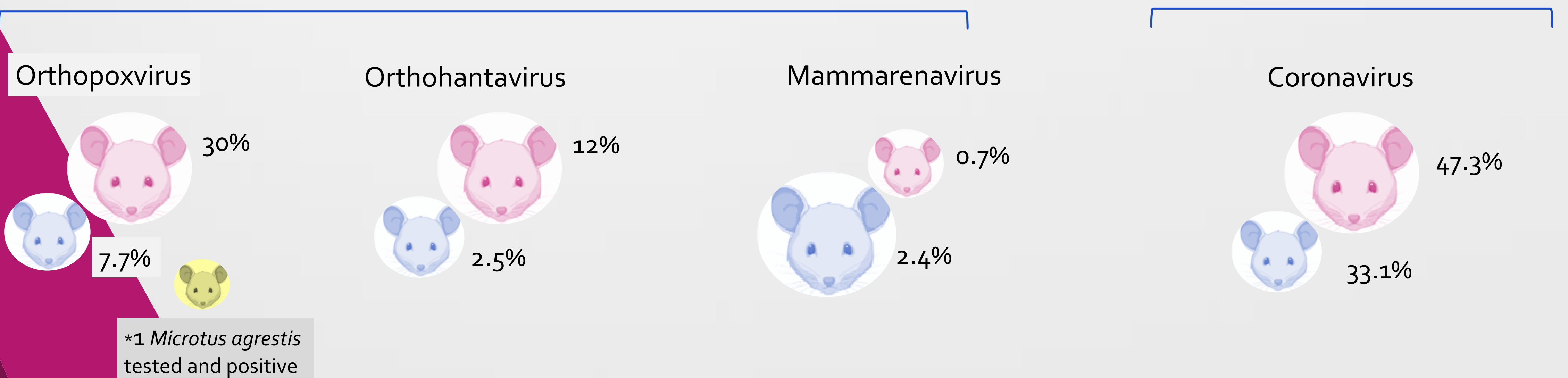
- Lung samples from 4 seropositive *Myodes glareolus* were qPCR positive for Puumala virus
- 40% of 276 rodents tested were pan-coronavirus positive
- 7 colon samples sequenced by NGS had similarities with Alpha or Betacoronavirus but not with SARS-CoV-2
- 56 rodents, trapped in the same site and season where the IFA-positive *Apodemus sylvaticus* was detected, were tested by a SARS-CoV-2 RT-qPCR. All samples were negative.
- Lung samples from seropositive rodents tested by qPCR for Mammarenavirus were all negative

#### Seroprevalence / Site



#### Prevalence / Site

#### Seroprevalence / Rodent species



#### Prevalence / Rodent species

The present study demonstrates the presence of all groups of virus studied in the 3 types of landscapes analyzed, with an apparent predominance of seropositive rodents in the “forest” followed by the “urban park”; except for the Mammarenavirus that seem to be more abundant in the “urban park” environment and was absent in the “zoo”. Regarding rodent species, *M. glareolus* and *A. sylvaticus* had seropositive individuals for all the virus studied. Only one *Microtus agrestis* was tested and it was seropositive for Orthopoxvirus. *Myodes glareolus* preliminarily showed a higher prevalence for all viruses except for Mammarenavirus. Further molecular analyses will be performed to characterize the viruses detected, as well as multivariate statistical analyses to test whether the distribution of viruses across landscapes and host species follows the same patterns as those preliminarily detected here.