



# The 18th Congress of the International Union of Microbiological Societies (IUMS 2024)

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# EPP220 / #1191

## Diversity of coronaviruses circulating among small mammals from europe E-poster presentations - session 36: Virus evolution and emergence

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### Background and Aims

Understanding virus diversity in wildlife through increased surveillance is critical to predict, prevent and prepare for future spillovers and pandemics. In the past 20 years, the emergence of three highly pathogenic coronaviruses

has highlighted the importance of monitoring these viruses in wildlife. Studies on wildlife coronaviruses often focus on Chiroptera, considered as the main reservoir. However, recent evidence of several lineages of coronaviruses recovered from rodents emphasised that the importance of terrestrial small mammals should not be overlooked. In this study, we aim at presenting the results gathered during BioRodDis COVID-19 project about the circulation and diversity of coronaviruses in small mammals (rodents and bats) trapped in Europe.

### **Methods**

Samples from several species of small mammals' (994 colon) and bats (2605 guano droppings), collected from France, Belgium and Ireland in 2021, were screened for coronavirus using PCR and sequencing. Phylogenetic analysis based on RNA-Dependant-RNA-Polymerase was performed to investigate the diversity and the relations of these strains with other known coronaviruses.

### **Results**

Coronaviruses were detected in 25 samples from small mammals and 33 bat droppings. Sequencing and further phylogenetic analysis revealed the presence of Alpha- and betacoronavirus associated with rodents and bats.

### **Conclusions**

Our results are in line with previous evidence of a large diversity of coronavirus present in several small mammals species from Europe. We provide the first evidence of betacoronaviruses in French bats and alphacoronaviruses in Irish bats. The study covers regions that were not previously surveyed, highlighting the need to increase the efforts in monitoring these viruses and their wildlife hosts.