SCIENTIFIC ABSTRACTS

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(P33) ANTIVIRAL ACTIVITY OF FUNGAL METABOLITE 6-PENTYL-α-PYRONE DURING BOVINE CORONAVIRUS INFECTION

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Objectives: The main target of this study is the in vitro evaluation of antiviral activity of fungal secondary metabolite (SMs) 6-pentyl-α-pyrone (6PP) against bovine coronaviruses (BCoV), a betacoronavirus, as SARS-CoV-2, to obtain a translational study to SARS-CoV-2. To date, non-toxic antiviral compounds are not available against BCoV infection, but it has been demonstrated that some SMs reduce coronaviruses infection in vitro. The compound 6PP, extracted from Trichoderma strains, has demonstrated antiviral activity against canine coronavirus (CCoV) infection. Thus, in this study, the potential antiviral activity of 6PP was tested against BCoV infection in vitro in bovine kidney cells (MDBK).

Methods: Chromatographic techniques, bioscreen in vitro, cytomorphological analysis, immunofluorescence assay, molecular docking.

Results: Our preliminary results showed that non-toxic concentrations of 6PP reduced signs of morphological cell death and increased significantly cell viability of MDBK cells during BCoV infection. The expression of aryl hydrocarbon receptor (AhR), a ligand-activated transcription factor activated by BCoV infection, and which regulates host immune response to viral infections, was downregulated by 6PP. Interestingly, a high sequence identity of the 3D structural models obtained for the two domains (PASB and TAD) of human and bovine AhRs was revealed by bioinformatics analysis.

Conclusions: The present study demonstrates that 6PP may represent a potential antiviral agent against BCoV infection. In subsequent steps, inclusion complexes with β-cyclodextrin will be prepared and characterized in order to improve the pharmacokinetics of selected SMs to test in cattle.

(P34) UPDATE OF CANINE MORBILLIVIRUS INFECTION IN WILD CARNIVORES – A MULTICENTRIC STUDY IN THREE EUROPEAN COUNTRIES

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Canine distemper is recognized as one of the most significant infectious diseases for wildlife across the globe, especially carnivores, and it's caused by canine morbillivirus. A retrospective study was performed to analyse canine distemper in wild carnivores within the European territory over the last five years (2018-2023). Cases were collected from three wildlife rescue centres from 3 countries: Wildlife Study and Rehabilitation Centre (CERAS), Quercus ANCN (Portugal), Wildlife Station Retscheider Hof e.V. (Germany), and Wildlife Conservation Centre Le Tichodrome (France). This study included 39 animals and the following species: the red fox (*Vulpes vulpes*), the European badger (*Meles meles*), the stone marten