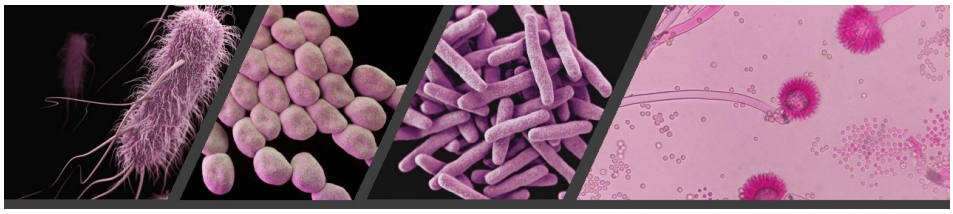

Abstract ID : **131**

PRELIMINARY METABOLOMICS DATA ON VIRUS INFECTION: THE CASE OF BOVINE CORONAVIRUS (BCoV)

Content

Objectives: The mechanisms regulating the interconnections between viruses and cell hosts are not yet fully understood and this is necessary for early diagnosis and an effective operational response to counter infections caused by emerging and/or re-emerging viruses. Metabolomics gives a comprehensive representation of metabolites providing further information on mechanisms involved in cell responses during infectious diseases. This study is focused on bovine coronavirus (BCoV), a betacoronavirus, like SARS-COV-2, causing enteric diarrhea in calves, winter dysentery, as well as Bovine Respiratory Disease. Hence, we developed an in vitro strategy, based on both virology and metabolomics techniques to provide insights into virus-host interactions. In addition, this strategy could be useful in the search for new antiviral compounds.
Methods: GC-MS, NMR, cytomorphological analysis, immunofluorescence assay.
Results: We developed a full strategy for the evaluation of intracellular metabolites to obtain an insight into the variations caused in bovine cells (MDBK) during BCoV (strain 282/23) infection. The dataset comprises over 50 metabolites belonging to different classes of natural products.
Conclusions: In conclusion, in this work we offer a snapshot of the physiological state of the cell before and after BCoV infection. Moreover, the workflow employed by us could be suitable to gather valuable information on the mechanism of action of potential antiviral candidates.

Keywords

Metabolomics; Bovine Coronavirus; betacoronavirus

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Professional Status of the submitter, who is also the speaker

Senior Scientist

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