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## **A journey through the interactions between viruses and the brain, illustrated by the Bornavirus paradigm**

Borna disease virus (BoDV), a non-segmented negative-stranded RNA virus, is unique among animal RNA viruses in that it replicates in the cell nucleus and establishes a long-lasting persistent infection without any cytopathic effects. BoDV has puzzled researchers for many years regarding its pathogenic and zoonotic potential. Very recent evidence, however, has shown that BoDV is indeed a human pathogen and that its persistence in the brain may lead to diverse outcomes. During my talk, I will provide a general overview on the molecular and biological features of BoDV infection, with a special focus on viral interference with neuronal signaling and function. In addition, the exquisite adaptation of BoDV to replicate in neurons, which are post-mitotic cells with limited capacity of renewal, has led BoDV to develop a strategy to multiply without damaging neurons. In turn, we were able to divert this strategy to use BoDV-derived products to protect neurons against neurodegeneration, as exemplified in our recent studies using models for Parkinson's disease or amyotrophic lateral sclerosis (ALS). These ongoing studies will also be presented.

*Hôte : Thibaut Crépin (IBS/Groupe Machines de Réplication Virale)*