NS3 of bluetongue virus interferes with the innate antiviral response

Damien Vitour, Estelle Lara, Emilie Chauveau, Micheline Adam, Corinne Sailleau, Emmanuel Breard, Stéphan Zientara

NS3of Bluetongue virus interferes with the innate antiviral response

Estelle LARA, Emilie CHAUVEAU, Virginie DOCEUL, Micheline ADAM, Corinne SAILLEAU, Emmanuel BREARD, Cyril VIAROUGE, Alexandra DESPRAT, Stéphan ZIENTARA, Damien VITOUR.

Bluetongue disease is a major animal health concern transmitted through the bites of Culicoides vectors. Bluetongue virus (BTV), the etiologic agent of the disease, is a dsRNA virus belonging to the genus *Orbivirus*, into the *Reoviridae* family. BTV infection triggers the production of type-I interferon (IFN-I) and genomic dsRNA is a strong IFN-I inducer. We recently showed that RIG-I-like receptor pathway is involved in the innate immune response following BTV dsRNA transfection. Most of viruses have evolved versatile strategies to escape the IFN-I response but nothing is known on the ability of BTV to counteract the innate response. In this study, we demonstrated that BTV serotype 8 (BTV-8) can dampen the type-I interferon response and that the non-structural protein 3 (NS3) is involved in this process. In order to identify viral components involved in this inhibition and to explore its possible link with viral pathogenesis, we performed a yeast-two hybrid screen using NS3 BTV-8 as bait and a human cDNA library as prey. We describe here the result of this screen and discuss its potential link to virulence strength. Amino acids sequences/residues essential for the dedicated interaction will be changed onto the corresponding gene segment in a reverse genetic system to assess whether innate response can be restored at the virus level.

Congres annuel de la Société Française d'Immunologie

8-10 NOVEMBER 2011 - MONTPELLIER