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Recent advances in comparative pathology for rift valley fever virus vaccinology

Ivan Galindo Cardiel I¹, Busquets N², Abad F X², Solanes D², Domingo M³ and Brun A⁴

¹WorldPathol Ltd. Co., Spain

²Institut de Recerca i Tecnologia Agroalimentaries-CReSA, Spain

³Universitat Autònoma de Barcelona, Spain

⁴Centro de Investigación en Sanidad Animal, Spain

Rift Valley fever (RVF) virus is a mosquito-borne, zoonotic, negative-sense, single-stranded, tripartite RNA virus of the family Bunyaviridae within the genus Phlebovirus. RVFV primarily affects domestic ruminants but can also cause a devastating disease in humans. Outbreaks of RVFV have extended from sub-Saharan Africa to Middle East, raising several concerns about the potential spreading of the virus to Europe, Asia and Americas. Animal models are basic to develop new effective vaccines and accurate diagnostic tools. Rodent, small ruminant and non-human primary infection models are currently used in the initial steps of virus pathogenesis, vaccinology and transmission studies. Even after assuming the huge scientific advance done in this field, it is a reality that only two attenuated vaccines related to some safety concerns have been approved for widespread veterinary use. Recent advances in vaccine design have enabled the development of more-potent prophylactic measures to combat viral infections. However, every step towards this way has to be jointed to a deep knowledge about the virus and its associated pathology. In this presentation, we briefly summarize several aspects of RVFV with particular emphasis on understanding the key molecular components of the virus, the critical points in comparative pathogenesis and the hot-shots in immune response elicited by RVFV which may lead to a better vaccine development, essential tools in the fight against this disease. Moreover, we have discussed an ovine model developed in Center of Research in Animal Health (CReSA) which helped us in knowing about an old-know but recently described ocular lesion in the natural host of RVFV; sheep, responsible of the maintenance of horizontal transmission to humans.

Biography

Ivan Galindo Cardiel I has a Degree in Veterinary with a Master of Science by the University of Zaragoza. He has recently finished his residency in Veterinary Pathology in the Autonomous University of Barcelona, being eligible for taking the exam of the European College of Veterinary Pathologist. He has worked in Liege University (Belgium) and the Utrecht University (Netherlands) for completing his research training. He has also worked in laboratory animal's pathology and phenotyping in the Johns Hopkins University (United States). He has participated in many research projects in the last 10 years in different expertise areas (Vaccinology, virology, oncology and pathogeny studies) and diseases (African Swine Fever, Classical Swine Fever, Bluetongue, Rift Valley Fever, PRRS, porcine Circovirus, Rotavirus and many more). His publications (17) include some of the most prestigious peer-reviewed journals in pathology, such as *Plos One*, *Veterinary Pathology*, *Journal of Comparative Pathology*, *Viral Immunology* and *Veterinary Microbiology*.

ivan.galindo@worldpathol.com

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