

Detection of a new emerging rabbit hemorrhagic disease type 2 virus (GI.2) in China

Wanting Chen¹, Teng Tu², Pengfei Zhang², Dike Jiang², Yin Wang², xulong Wu², Yan Luo², Zexiao Yang³, and Xueping Yao²

¹Sichuan Agricultural University - Chengdu Campus

²Affiliation not available

³Sichuan Agricultural University

April 2, 2021

Abstract

In May 2020, the first outbreak of rabbit viral hemorrhagic disease (RHD) caused by rabbit hemorrhagic disease virus type 2 (GI.2) occurred in Sichuan, China. The acute onset and short disease course resulted in rabbit mortalities as high as 42.86%. Currently, basic research on the etiology and genetic characteristics of GI.2 is lacking in China. Pathological changes in various tissues from infected rabbits were investigated, and the viral genome was characterized. This study used RT-PCR, histopathology, scanning electron microscopy, and whole genome sequencing analysis to identify the pathogen in samples from infected rabbits that had died. RT-PCR identified the presence of GI.2. The histopathology revealed liver cell necrosis and hemorrhaging into lung alveoli. Electron microscopy demonstrated spherical GI.2 particles that were 40 nm in diameter with an isometric interior. The gene sequence length of the isolate was 7,464 bp and termed GI.2/CN/SC-04. The phylogenetic analysis of the GI.2 genotype showed that the strain from GI.2/CN/SC-04 clustered into a separate group compared to the isolate from China (MT586027.1). Phylogenetic analysis based on whole sequences and showed that GI.2/CN/SC-04 strains were identical and clustered with other strains of GI.2 circulating globally. The results of recombination analysis showed that GI.2/CN/SC-04 was recombined from MT586027.1 strain (main parent strain) and MN90145.1(secondary parent strain), and both the two recombination breakpoints 2858-5137nt. This was the study to report that GI.2 had been isolated in China, to characterise the full genome sequence and provide phylogenetic insights into the origin of this exotic incursion. development.

Hosted file

Detection of a new emerging rabbit hemorrhagic disease type 2 virus(GI.2) in China.pdf available at <https://authorea.com/users/405347/articles/516361-detection-of-a-new-emerging-rabbit-hemorrhagic-disease-type-2-virus-gi-2-in-china>

Hosted file

Figure.pdf available at <https://authorea.com/users/405347/articles/516361-detection-of-a-new-emerging-rabbit-hemorrhagic-disease-type-2-virus-gi-2-in-china>

Hosted file

Table.pdf available at <https://authorea.com/users/405347/articles/516361-detection-of-a-new-emerging-rabbit-hemorrhagic-disease-type-2-virus-gi-2-in-china>