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Genome characterization of a pathogenic porcine rotavirus B strain identified in Buryat republic, Russia in 2015

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Abstract

© 2018 by the authors. Licensee MDPI, Basel, Switzerland. An outbreak of enteric disease of unknown etiology with 60% morbidity and 8% mortality in weaning piglets occurred in November 2015 on a farm in Buryat Republic, Russia. Metagenomic sequencing revealed the presence of rotavirus B in feces from diseased piglets while no other pathogens were identified. Clinical disease was reproduced in experimentally infected piglets, yielding the 11 RVB gene segments for strain Buryat15, with an RVB genotype constellation of G12-P[4]-I13-R4-C4-M4-A8-N10-T4-E4-H7. This genotype constellation has also been identified in the United States. While the Buryat15 VP7 protein lacked unique amino acid differences in the predicted neutralizing epitopes compared to the previously published swine RVB G12 strains, this report of RVB in Russian swine increases our epidemiological knowledge on the global prevalence and genetic diversity of RVB.

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Keywords

Gastrointestinal disease, Phylogenetic analysis, Porcine enteric disease, Porcine group B rotavirus, RVB

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