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IDENTIFICATION AND MOLECULAR CHARACTERIZATION OF PORCINE KOBUVIRUS IN U. S. SWINE FARMS

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Abstract: The genus Kobuvirus belongs to family *Picornaviridae* and consists of viruses that are non-enveloped and contain single-stranded, positive-sense RNA. Porcine kobuvirus has been associated with piglet diarrhea in Hungary, China, Thailand, Japan, and Korea, but there are no reports of its presence in U.S. swine farms. We screened intestinal contents from 114 diarrheic pigs submitted to the Minnesota Veterinary Diagnostic Laboratory for the presence of kobuvirus by RT-PCR using 3D (RNA polymerase) gene primers (219 bp amplicon). Twenty five (22.0 %) of the 114 specimens were positive for porcine kobuvirus. Only three of the

25 specimens had kobuvirus exclusively while the other 22 had mixed infection with kobuvirus, transmissible gastroenteritis virus, and/or rotavirus (groups A, B, or C). The phylogenetic analysis revealed that all 25 porcine kobuvirus strains had 93.1%-96.5% nucleotide identity with NLD45 strain from the Netherlands and BRA24 strain from Brazil. The results of this preliminary study indicate the presence of porcine kobuvirus in diarrheic pigs in the U.S. Further studies are indicated to determine the role of kobuvirus in gastrointestinal infections of pigs in the U.S. and to determine the strain diversity of the circulating porcine kobuviruses.