

**Table S1.** Virus recovery from blood samples and neutralizing antibody in pigs inoculated with vGPE-/PAPeV E<sup>rns</sup> or vGPE-/PhoPeV E<sup>rns</sup>

Virus	Pig ID	Virus recovery at dpi (log <sub>10</sub> TCID <sub>50</sub> /mL)							Neutralizing antibody titer at dpi	
		0	3	5	7	9	11	14	0	14
vGPE-/PAPeV E <sup>rns</sup>	#293	–	–	–	–	–	–	–	<1	2
	#294	–	–	–	–	–	–	–	<1	8
	#295	–	–	–	–	–	–	–	<1	4
	#296	–	–	–	–	–	–	–	<1	2
	#297	–	–	–	–	–	–	–	<1	8
vGPE-/PhoPeV E <sup>rns</sup>	#374	–	–	–	–	–	–	–	<1	1
	#375	–	–	–	–	–	–	–	<1	2
	#376	–	–	–	–	–	–	–	<1	2
	#377	–	–	–	–	–	–	–	<1	2
	#378	–	–	–	–	–	–	–	<1	<1

–: not isolated.

**Table S2.** Virus recovery from organ samples in pigs inoculated with vGPE-/PAPeV E<sup>rms</sup> or vGPE-/PhoPeV E<sup>rms</sup>

Virus	Pig ID	Virus recovery (log <sub>10</sub> TCID <sub>50</sub> /g)						
		Tonsil	Brain	Spleen	Kidney	Adrenal grand	Mesenteric lymph node	Colon
vGPE-/PAPeV E <sup>rms</sup>	#293	–	–	–	–	–	–	–
	#294	–	–	–	–	–	–	–
	#295	–	–	–	–	–	–	–
	#296	–	–	–	–	–	–	–
	#297	–	–	–	–	–	–	–
vGPE-/PhoPeV E <sup>rms</sup>	#374	–	–	–	–	–	–	–
	#375	–	–	–	–	–	–	–
	#376	–	–	–	–	–	–	–
	#377	–	–	–	–	–	–	–
	#378	–	–	–	–	–	–	–

–: not isolated.

**Table S3.** Virus recovery from blood samples in pigs inoculated with vGPE<sup>-</sup>, vGPE<sup>-</sup>/PApEV E<sup>rns</sup>, or vGPE<sup>-</sup>/PhoPeV E<sup>rns</sup> at different doses of TCID<sub>50</sub>

Virus	TCID <sub>50</sub>	Pig ID	Virus recovery at dpi (log <sub>10</sub> TCID <sub>50</sub> /mL)			
			0	7	14	21
vGPE <sup>-</sup> /PApEV E <sup>rns</sup>	10 <sup>3.0</sup>	#312	-	-	-	-
		#313	-	-	-	-
		#314	-	-	-	-
	10 <sup>4.0</sup>	#315	-	-	-	-
		#316	-	-	-	-
		#317	-	-	-	-
	10 <sup>5.0</sup>	#318	-	-	-	-
		#319	-	-	-	-
		#320	-	-	-	-
vGPE <sup>-</sup> /PhoPeV E <sup>rns</sup>	10 <sup>3.0</sup>	#354	-	-	-	-
		#355	-	-	-	-
		#356	-	-	-	-
	10 <sup>4.0</sup>	#357	-	-	-	-
		#358	-	-	-	-
		#359	-	-	-	-
	10 <sup>5.0</sup>	#360	-	-	-	-
		#361	-	-	-	NC
		#362	-	-	-	-
vGPE <sup>-</sup>	10 <sup>3.0</sup>	#303	-	-	-	-
		#304	-	-	-	-
		#305	-	-	-	-
	10 <sup>4.0</sup>	#306	-	-	-	-
		#307	-	-	-	-
		#308	-	-	-	-
	10 <sup>5.0</sup>	#309	-	-	-	-
		#310	-	-	-	-
		#311	-	-	-	-

-: not isolated, NC: no sample collection due to the pig being dead on 18 dpi.