

Electronic Supplementary Material

Evaluation of purified recombinant spike fragments for assessment of the presence of serum neutralizing antibodies against a variant strain of porcine epidemic diarrhea virus

Jianwei Hao¹, Yun Zhang¹, Shengkun Fang², Zhifen Wen¹, Xiangbin Zhang¹, Chunyi Xue¹, Yongchang Cao¹✉

1. State Key Laboratory of Biocontrol, School of Life Sciences, Sun Yat-sen University, Guangzhou 510006, China

2. Fraunhofer-Institut für Angewandte Informationstechnik FIT, Sankt Augustin 53754, Germany

Supporting information to DOI: 10.1007/s12250-017-3969-8

Table S1. Primers used for polymerase chain reaction (PCR) involving the seven recombinant S peptides

Primer	Sequence (5'–3')
SP1F	GCGGTACCCAAGATGTCACCAGGTGCTCAG
SP1R	GCCTCGAGATTGGGCTCAGTAGCAAATACA
SP2F	GCGGTACCTCTTTTTGTTACTTTGCCATCATTTAAT
SP2R	GCCTCGAGCATACTAAAGTTGGTGGGAATACTAA
SP3F	GCGGTACCAATGGCCACATACCAGAAGGTTTTAGT
SP3R	GCCTCGAGAGTTGGCTGTTCATGACTCAGAAGGT
SP4F	GCGGTACCATGAGTATTAGGACAGAATATTTACAGCTT
SP4R	GCCTCGAGACTATACATATGAAGCTTCTCAGCGTC
SP5F	GCGGTACCACAACAGGTCGTAAGTGCCTATTT
SP5R	GCCTCGAGATTTGTTCTAAAGCAGTATGAAG
SP6F	GCGGTACCGTTTTTTGGACCATAGCATCGACT
SP6R	GCCTCGAGATTTGTAAGGGTAATGATACCCTC
SP7F	GCGGTACCGTTTATTATACATCTGATTCTGGAC
SP7R	GCCTCGAGGTCTTCAATGAAAGACCTTTTTT

Majority	APT	VT	GNI	SI	PT	NF	SMSI	RTE	YL	QL	YNT	PVS	VD	CAT	YVC	NGNS	RCK	QLLT	QYTA	AA	CKTI	ESAL	QL	
	790	800	810	820	830	840																		
83P-5_100th.pro	M												V											835
CV777.pro													V											836
attenuated DR13.pro	M												V											835
JS-HZ2012.pro																								839
JY.pro	VT																							839
LC.pro																								839
SM98.pro													L											840
USA-Colorado-2013.pro																								839
USA-Iowa18984-2013.pro																								839
CHS.pro	M												F											836
JS2008.pro													V											835
ZJCZ4.pro																								839
AH2012.pro																								839
AJ1102.pro																								839
BJ-2011-1.pro																								839
CH2.pro					S					V														836
CH7.pro																								836
CH-FJND-3-2011.pro																								839
CH-FJZZ-9-2012.pro	M																					I		839
CHGD-01.pro																								839
CH-GD-2011.pro																								839
CH-GDGZ-2012.pro																								839
CH-ZMDZY-11.pro																								839
GD-01.pro																								839
GD-A.pro																								839
GD-B.pro																								839
GDS01.pro																							I	839

Majority	SAR	LES	VE	VNS	ML	TI	SEEA	LQ	LATI	SSF	NGD	GY	NFT	NVL	GVS	VY	DP	PAS	GR	VV	QK	RS	FI	ED	LL	FN	CK		
	850	860	870	880	890	900	910																						
83P-5_100th.pro																													900
CV777.pro																													901
attenuated DR13.pro																													900
JS-HZ2012.pro																													904
JY.pro																													904
LC.pro	A																												904
SM98.pro																													905
USA-Colorado-2013.pro																													904
USA-Iowa18984-2013.pro																													904
CHS.pro																													901
JS2008.pro																													900
ZJCZ4.pro	A																												904
AH2012.pro																													904
AJ1102.pro	A																												904
BJ-2011-1.pro																													904
CH2.pro																													901
CH7.pro	A																												901
CH-FJND-3-2011.pro																													904
CH-FJZZ-9-2012.pro	A																												904
CHGD-01.pro	A																												904
CH-GD-2011.pro	A																												904
CH-GDGZ-2012.pro	A																												904
CH-ZMDZY-11.pro																													904
GD-01.pro	A																												904
GD-A.pro	A																												904
GD-B.pro																													904
GDS01.pro	A																												904

Majority	VVT	NGL	GT	VD	ED	YK	KR	CS	NG	RS	VAD	LVC	AQ	YYS	SG	VM	LP	GV	VDA	EK	LH	MY	SAS	LI	GGM	VL	GG	FT	AA						
	920	930	940	950	960	970																													
83P-5_100th.pro																															965				
CV777.pro																																966			
attenuated DR13.pro																																965			
JS-HZ2012.pro																																969			
JY.pro																																969			
LC.pro																																969			
SM98.pro																																970			
USA-Colorado-2013.pro																																969			
USA-Iowa18984-2013.pro																																969			
CHS.pro																																966			
JS2008.pro																																965			
ZJCZ4.pro																																969			
AH2012.pro																																969			
AJ1102.pro																																969			
BJ-2011-1.pro																																969			
CH2.pro																																966			
CH7.pro																																966			
CH-FJND-3-2011.pro																																969			
CH-FJZZ-9-2012.pro																																969			
CHGD-01.pro																																969			
CH-GD-2011.pro																																969			
CH-GDGZ-2012.pro																																969			
CH-ZMDZY-11.pro																																969			
GD-01.pro																																969			
GD-A.pro																																969			
GD-B.pro																																969			
GDS01.pro																																969			

Figure S1. Alignment of the deduced amino acid sequence of the partial S2 subunit. Amino acid residues 791–954 of the S2 subunit of the PEDV GDS01 strain were aligned with those of other PEDV strains (including vaccine strains, which are marked with asterisks, and newly isolated strains from various areas). The dots indicate the regions where the sequences are identical to the consensus sequence.

Table S2. Comparison of SP4 ELISA results with SN titers based on testing 156 field sow serum samples

SN titer*	Total tested	SP4 ELISA		% agreement
		+	-	
≥ 256	21	20	1	95.2
128	20	17	3	85
64	28	18	10	64.3
32	24	16	8	66.7
16	30	14	16	46.7
8	20	2	18	90
≤ 4	13	0	13	100

Note: * The SN titers are expressed as the reciprocal dilution of serum samples.