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Electronic Supplementary Material

Porcine Immunoglobulin Fc Fused P30/P54 Protein of African Swine Fever Virus Displaying on Surface of *S. cerevisiae* Elicit Strong Antibody Production in Swine

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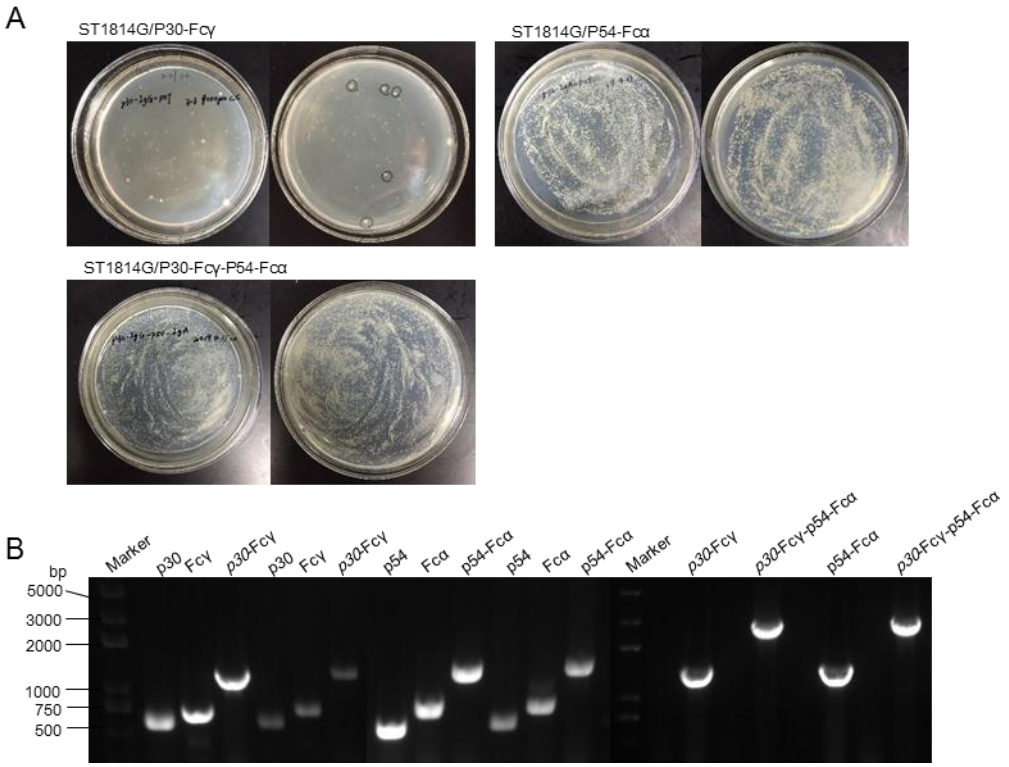

Fig. S1 Screening of the recombinant *S. cerevisiae* strains. **A** The *S. cerevisiae* transformants screened by SD-LEU auxotrophic medium. The p30-Fcγ and p54-Fcα expression plasmids first linearized with endonuclease *Bsa*I were transformed into *S. cerevisiae* strain ST1814G by LiAc transformation method in LEU-deficient plates to obtain transformant units. The larger diameter strains were selected and named ST1814G/P30-Fcγ, ST1814G/P54-Fcα, ST1814G/P30-Fcγ-P54-Fcα, which were verified as subsequent experimental materials. **B** A gel electrophoresis pattern of PCR identification of positive clones using genomic DNA of the three recombinant yeast strains. The genomic DNA of them was used as a template, and PCR amplification was carried out using specific primers. The length of p30-Fcγ, p54-Fcα and p30-Fcγ-p54-Fcαgene fragment was 1.2 kb, 1.3 kb, and 3 kb respectively, which was consistent with expectation. Lane 1, 4: p30; Lane 2, 5: Fcγ; Lane 3, 6: p30-Fcγ; Lane 7, 10: p54; Lane 8, 11: Fcα; Lane 9, 12: p54-Fcα; Lane 13: p30-Fcγ; Lane 15: p54-Fcα; Lane 14, 16: p30-Fcγ-p54-Fcα.

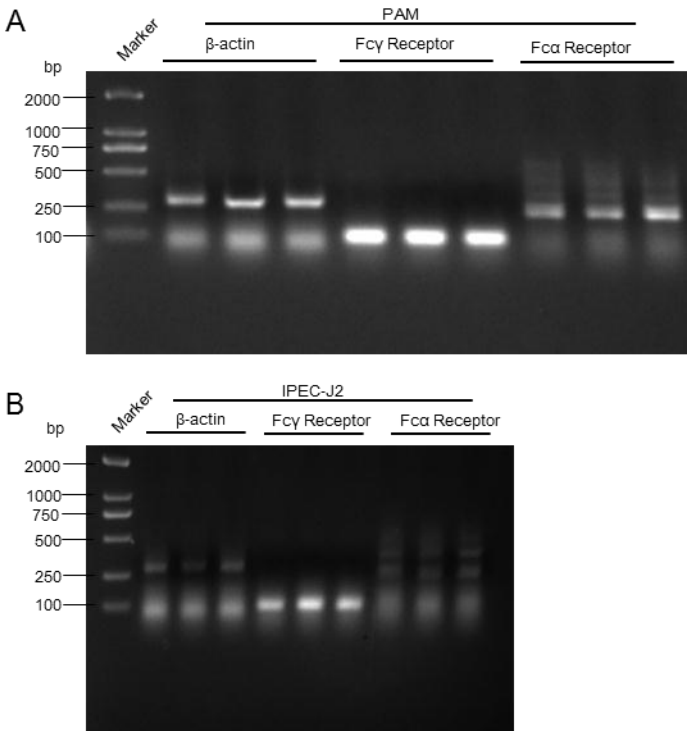

Fig. S2 Detection of Fcγ receptor and Fcα receptor of PAM and IPEC-J2 cells. **A** Detection of Fcγ receptor and Fcα receptor of PAM cells. **B** Detection of Fcγ receptor and Fcα receptor of IPEC-J2 cells.

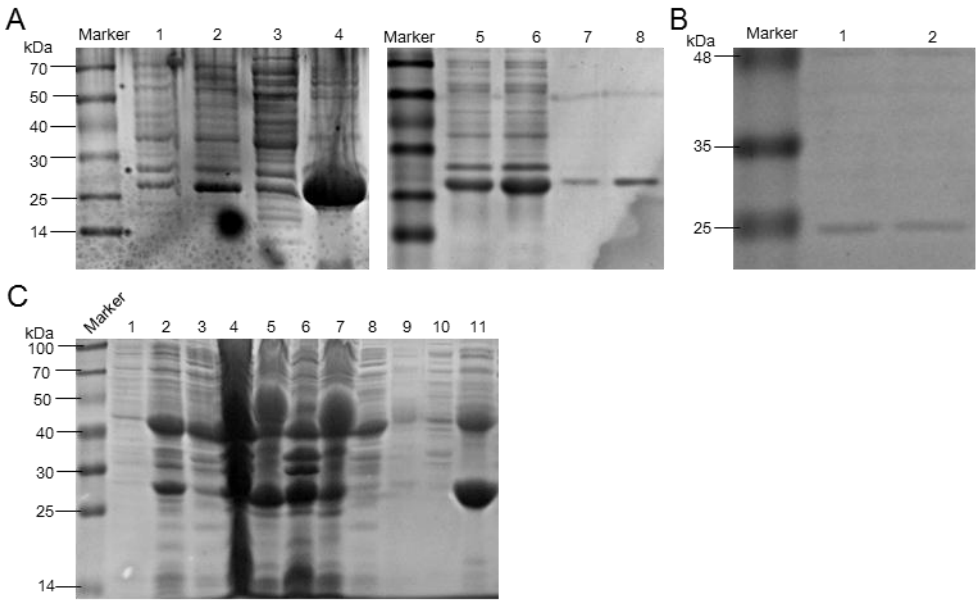

Fig. S3 Protein purification results of P30, P54, K145R. **A** Protein purification results of P30. The molecular weight of P30 is about 26 kDa. Lane Description: lane 1: Before induction; lane 2: After induction; lane 3: Supernatant after centrifugation; lane 4: Precipitation after centrifugation; lane 5: Centrifugal supernatant after precipitation of urea; lane 6: Centrifugal precipitation after precipitation of urea; lane 7: After inclusion bodies (200 mmol/L imidazole); lane 8: After inclusion bodies (250 mmol/L imidazole). **B** Protein purification results of P54. The molecular weight of P30 is about 25 kDa. Lane Description: Lane 1: After elution (200 mmol/L imidazole); Lane 2: After elution (250 mmol/L imidazole). **C** Protein purification results of K145R. The molecular weight of K145R is about 20 kDa. Lane Description: Lane 1: Before induction; lane 2: After induction; Lane 3: supernatant after centrifugation; Lane 4: Precipitation after centrifugation; Lane 5: Centrifugal supernatant after precipitation of urea; Lane 6: Centrifugal precipitation after precipitation of urea; Lane 7: After sedimentation; Lane 8: After hanging the column; Lane 9: Precipitation washing; Lane 10: Cleaning up; Lane 11: After inclusion bodies (250 mmol/L imidazole).

Table S1. Primers for overlapping PCR.

Primer name	Genbank number	Sequence of primer (5′–3′)
IgG1-F	AK405786.1	ATGGAGTTTCGGCTGAACT
IgG1-R		TTACCCTGAGTCTTGGAGATG
IgA1-F	AB194101.1	AGTAGCAGATGCCCTCTGCCTCC
IgA1-R		GTGTCTGAAACCAGCCCCAAAAT
p30-Fcγ-overlap-F_1	MK757460.1	GACGATAAGGTACCAGGATCCATGAAAATGGAGGTCATCTTCAAAA
p30-Fcγ-overlap-R_1		GCATATGGGACATGTTTGCATTTTTTTTTTTAAAAGTTTAATAACCATG
p30-Fcγ-overlap-F_2	MK757460.1	TCATGGTTATTAAACTTTTAAAAAAAAAAATGCAAACATGTCCCATATGC
p30-Fcγ-overlap-R_2		GAATTCCACCACACTGGATCCTTTACCCTGAGTCTTGGAGATGG
p54-Fcα-overlap-F_1	MK276918.1	GACGATAAGGTACCAGGATCCATGGATTCTGAATTTTTTCAACCG
p54-Fcα-overlap-R_1		GAGAGGTGCTGCACTTGCATCAAGGAGTTTTCTAGGTCTTTATGC
p54-Fcα-overlap-R_2	MK276918.1	GCATAAAGACCTAGAAAACTCCTTGATGCAAGTGCAGCACCTCTC
p54-Fcα-overlap–R_2		GAATTCCACCACACTGGATCCACCCGCCAGGCGGTC
pET-28a-p30-F	MK757460.1	CAGCAAATGGGTCGCGGATCCATGAAAATGGAGGTCATCTT
pET-28a-p30-R		ACGGAGCTCGAATTCGGATCCTTTTTTTTTTAAAAGTTTAATAACCA
pET-28a-p54-F	MK276918.1	CAGCAAATGGGTCGCGGATCCATGGATTCTGAATTTTTTCAACC
pET-28a-p54-R		ACGGAGCTCGAATTCGGATCCCAAGGAGTTTTCTAGGTCTTTATGCG
pET-28a-k145r-F	MK628478.1	CAGCAAATGGGTCGCGGATCCATGGATCATTATCTTAAA
pET-28a-k145r-R		ACGGAGCTCGAATTCGGATCC GGATTCTTCTCCTCCTTC

Table S2. Primers for qRT-PCR.

Primer name	Genbank number	Sequence of primer (5′–3′)
ACT1-F	L00026.1	ACTTTCAACGTTCCAGCCTTC
ACT1-R		CGTAAATTGGAACGACGACGTGAGTA
p30-F	MK757460.1	ATATTGTGAAATCTGCTCGT
p30-R		TCATGAATGTTCTCCGAAG
p54-F	MK276918.1	TTCTCATTGCTATCGTGGTCTTA
p54-R		AAGACCACGATAGCAATGAGAAT
β-actin-F	DQ452569.1	GAATCCTGCGGCATCCACGA
β-actin-R		CTCGTCGTACTCCTGCTTGCT
Fcγ R-F	AK405786.1	AGCGAAGTCCTCCATGCCAGT
Fcγ R-R		CAGCCCCTTCCTCATCCTCCT
Fcα R-F	AB194101.1	TCCTACCATATCTGCCACACC
Fcα R-R		TCATACAAGCCTGTCACCAC