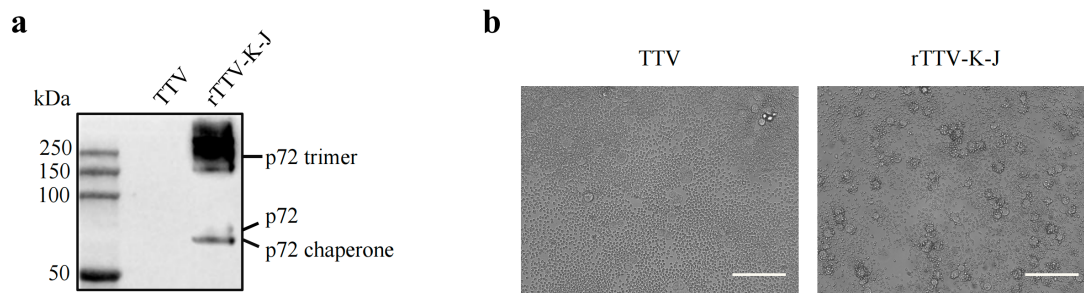


Supplementary Information

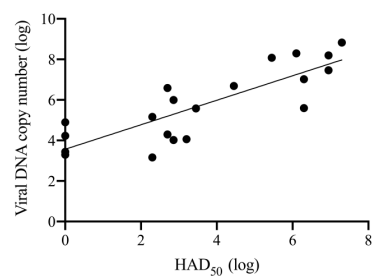
Supplementary Figure 1



Supplementary Figure 1. Trimeric p72 assembly and CD2v-mediated hemadsorption in rTTV-ASFVs infected cells.

a Vero cells infected with rTTV-K-J were lysed in non-reducing sample buffer. The resulting cell lysates were analyzed by immunoblotting using anti-Flag antibody, with lysates from TTV-infected cells serving as the negative control. **b** Following a 24-hour infection of 143B cells with rTTV-K-J or TTV virus, erythrocytes were added and rosette formation was qualitatively assessed. Scale bar, 125 μ m.

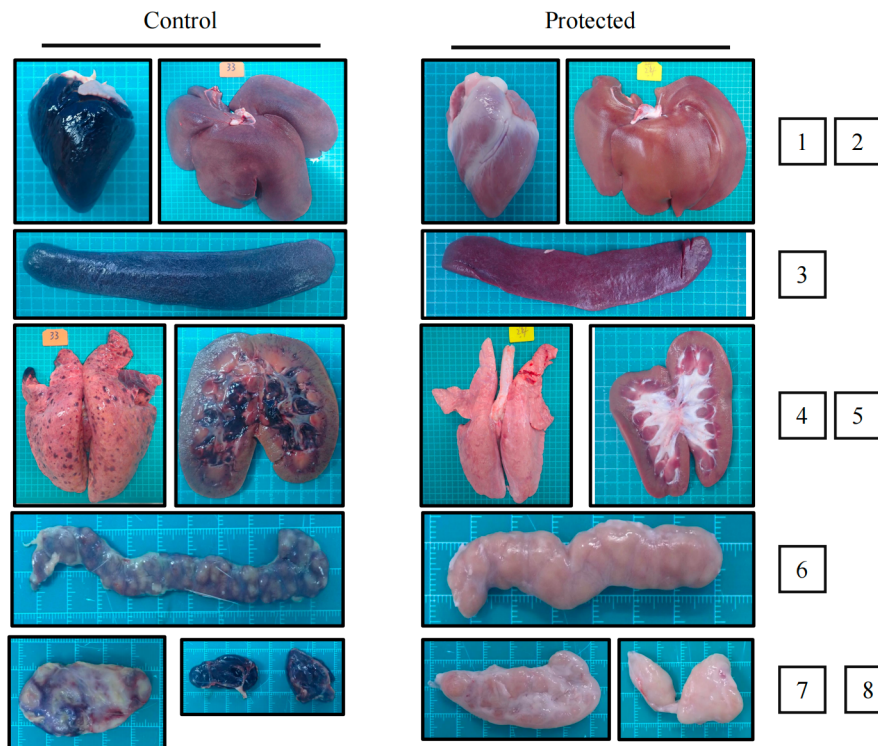
Supplementary Figure 2



Viral DNA copy number (Log)	8.83	8.30	7.46	7.02	4.30	8.20	4.07	4.89	5.60	4.02	8.08	6.69	6.00	5.16	3.44	5.58	3.16	4.23	6.58	3.30
HAD ₅₀ (Log)	7.3	6.1	6.95	6.3	2.7	6.95	3.2	NA	6.3	2.86	5.45	4.45	2.86	2.3	NA	3.45	2.3	NA	2.7	NA
Fold change	1.21	1.36	1.07	1.11	1.59	1.18	1.27	NA	0.89	1.41	1.48	1.50	2.10	2.25	NA	1.62	1.37	NA	2.44	NA
Average fold change	1.49																			

Supplementary Figure 2. Correlation between viral DNA and HAD₅₀ titers.
Viral loads in the lungs and intestinal lymph nodes were measured by qPCR and HAD₅₀ assay, respectively. Log-transformed values were analyzed by simple linear regression. A table of the log values from both assays is included.

Supplementary Figure 3

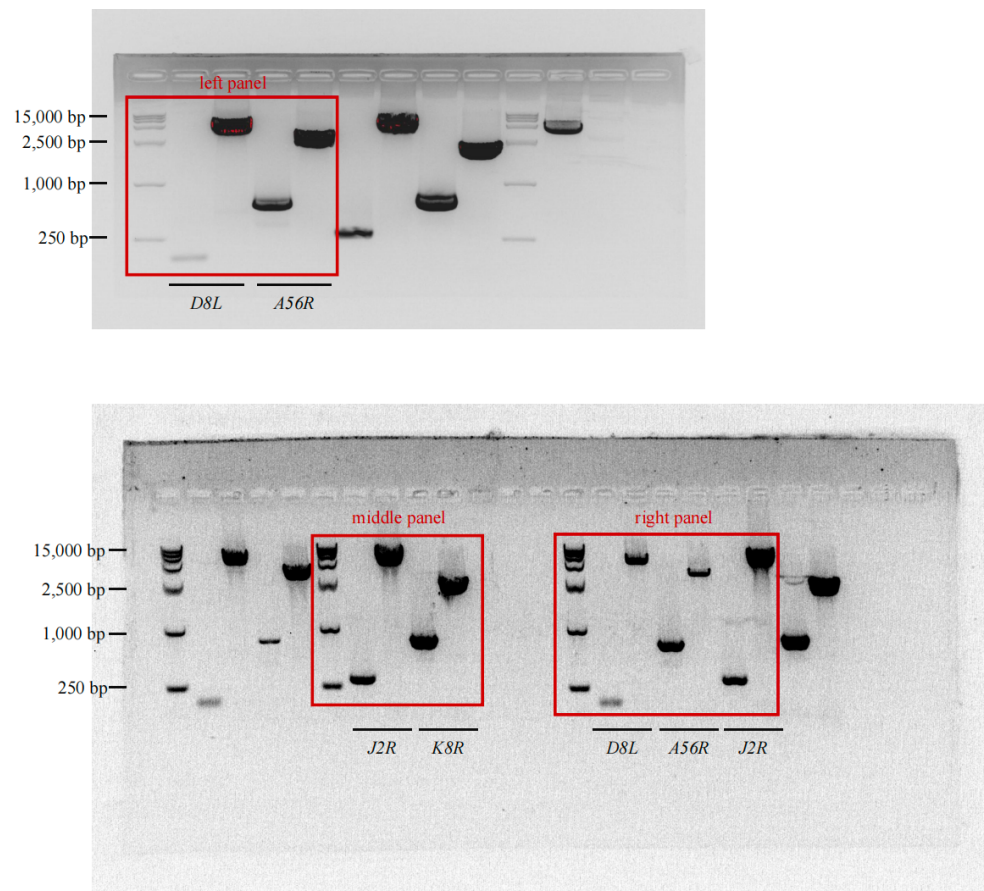


Supplementary Figure 3. Comparative pathology of organ and lymph nodes in indicated pigs following challenge with HLJ/18.

Representative images of tissues from the two groups were displayed side-by-side. For a concise display, tissues are numbered as follows and indicated along with the corresponding images :1, heart; 2, liver; 3, spleen; 4, lung; 5, kidney; 6, intestinal lymph node; 7, inguinal lymph node; 8, bronchial lymph node.

Supplementary Figure 4

Fig. 2b



Supplementary Figure 4 (continued)

Fig. 2c (left panel)

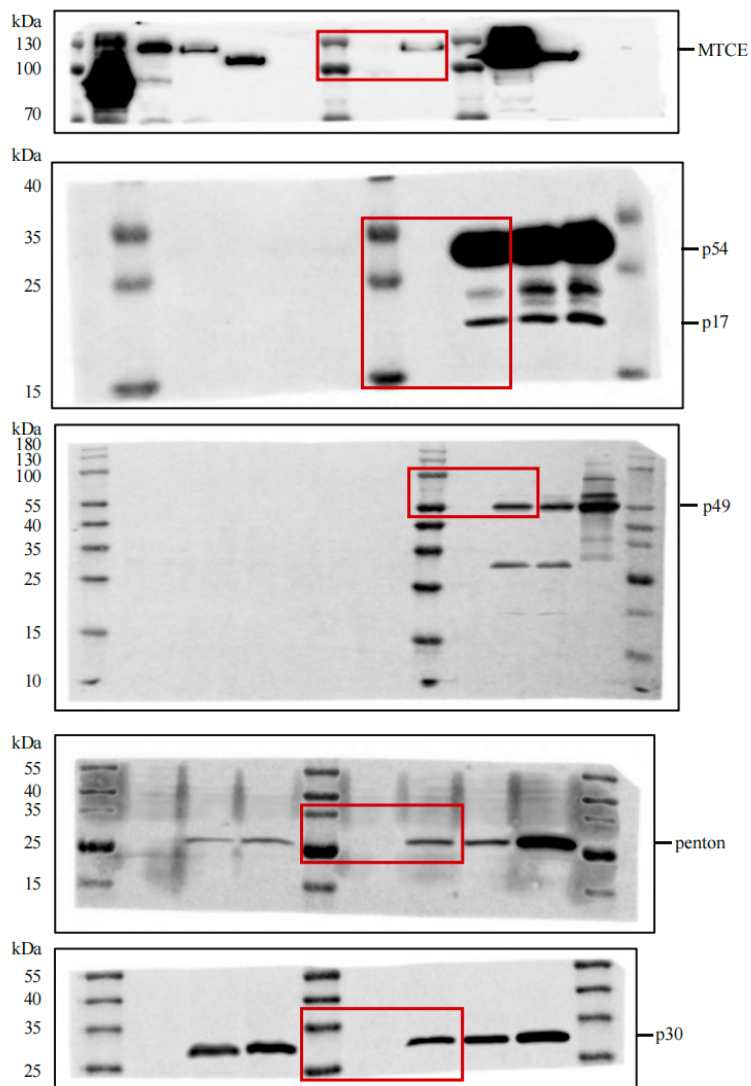
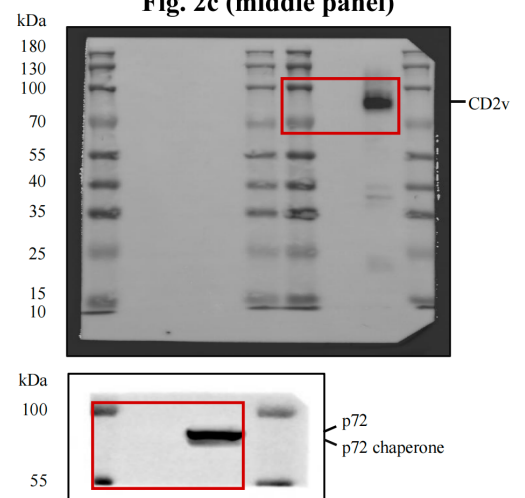
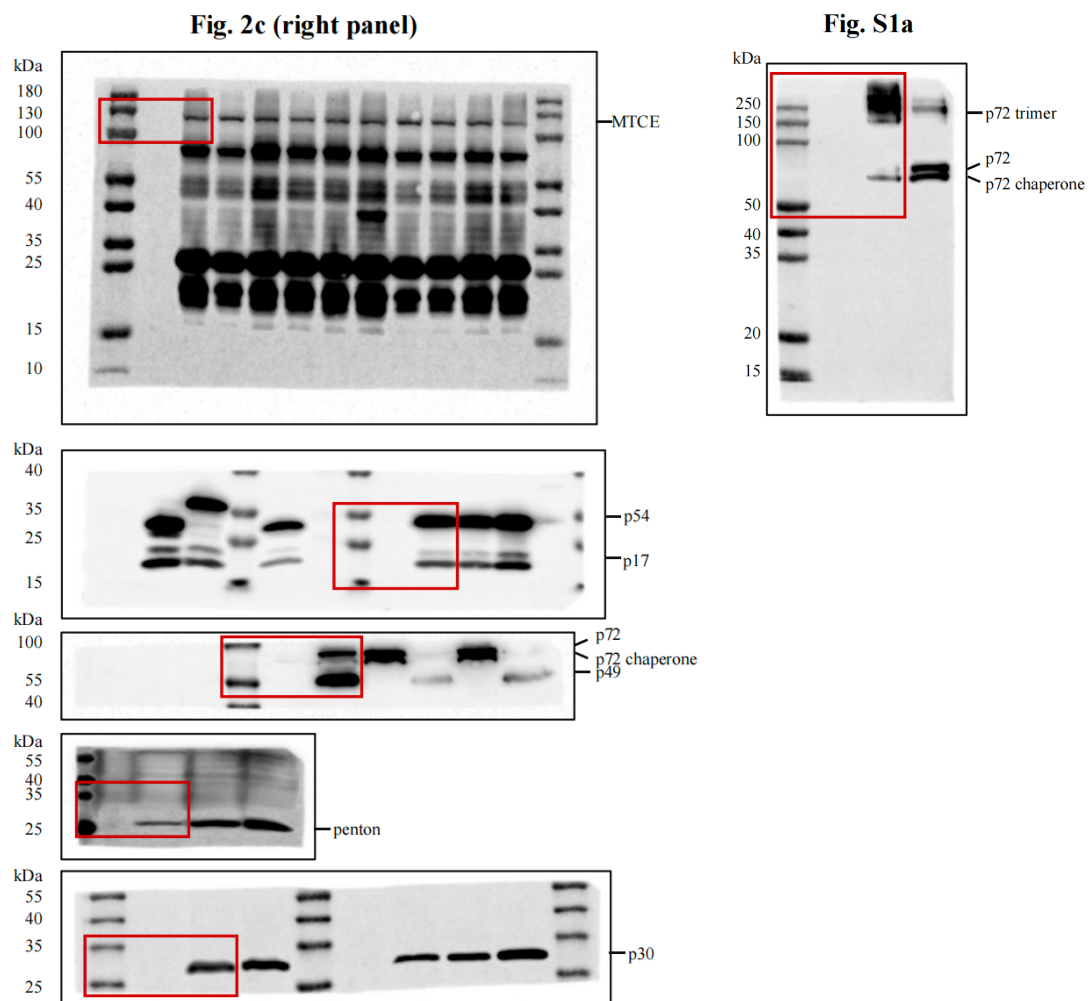


Fig. 2c (middle panel)



Supplementary Figure 4 (continued)



Supplementary Figure 4. Original images corresponding to Fig. 2b, 2c, and Fig. S1a.

Red boxes indicate the regions shown in the respective figures.

Supplementary Table 1. Characteristics of ASFV antigens inserted into TTV vectors.

Gene Name	Protein	Genomic Position	Insert Size (bp)	Predicted MW (kDa)
<i>EP402R</i>	CD2v	73394-74476	1083	41.0
<i>B438L</i>	p49	96236-97555	1317	49.4
<i>B602L</i>	p72 chaperone	100716-102308	1593	61.3
<i>B646L</i>	p72	103618-105558	1941	73.2
<i>CP204L</i>	p30	124824-125408	585	22.4
<i>D117L</i>	p17	144007-144360	354	13.1
<i>H240R</i>	penton	155375-156100	726	27.7
<i>E183L</i>	p54	162258-162812	555	20.0
-	MTCE	-	3237	126.6

Supplementary Table 2. Detailed information on the multi-T cell conserved epitope (MTCE).

Epitope Number	ORF	Epitope Sequence
1	<i>F334L</i>	FMREIKVKEVLYFYTMQAAQE
2		GRVPGFSKEMLFQYIRYFTDNLCFMMQCKSIYKVGNPFPQMTK
3	<i>H359L</i>	TEQFIRNRINFIPIYAKNETLVFALRSLNNSCE
4		IEQYPTDKKEYMALSGYKQSSMT
5	<i>D250R</i>	QNNQIETILVQKRYSLAFSEFIHCHYSINAN
6		DRMWYHIWIETPVYELYHKKYQKFRK
7		FKKSMSYFDGKTEYKHIIYFLAMLCKSLEEP
8	<i>E165R</i>	VAQGDHVPDHINILKRNQIFPLFAPTPRGEGRF
9	<i>D339L</i>	NSGRGYMHVRFSAVVSYLNAFDLIAAVKIIKNDS
10		SQNNVAEVGQIVPVQLANSSVYYIPGRQQ
11		SKKDFKQICFFEKLYYTYSISSD
12	<i>F1055L</i>	MIINVIMDVFYETYSLPYNINLTREQI
13		GLNKKRELKYSFHIILYTYSVLNNNEA
14		DQVMTKSIEVHESILFEELPDTQK
15		ESIFNQFNSSLHKYFAPSFAIFMWMLLETANYVI
16		CLDANLGNRTYNILQRFGRGDVP
17		LTNEQLMTKLVDQYDLAISFEFKLKKPNKTD
18	<i>G1211R</i>	IDIHEVRYGAYTLFMYGSLNGYKAEVR
19		MGYREKEKEFAPYIRIFFKSLYERRKAITYLNNMGYNNTAAD
20		SRELKLPLTSWIQLQHYSYEPGLV
21		NVIPDRREVGLSYTSLYDCIYYAGGHKVCNMLIAYAIHDEYGRIAC
22		RDEANSLMAKGESLHYVSFHFNNRLV
23		HEKVLLSMKAMSTLCAEVNEYLR
24	<i>A276R</i>	MVLIEFLTGFFYLYGKRLFSI
25	<i>A528L</i>	CRKNIFFLPNDFSKHTLQWLGLYWKEHGSV
26		LAVKNQSSRKTLNLLSYINYKVKNVKKL
27		TERITYLKQIVHTIKYESGRRFLVDIIHSIYQSYSLKHEDIL
28	<i>F778L</i>	AQVKYTLQELISYCSALTILHYDYSTL
29		ARNPFVSQSMSLNYYFYEPELS
30	<i>P1192R</i>	VYEKGKTMPEVFYEQEFD
31	<i>MGF</i> <i>505-7R</i>	ITKEEIMQAYALEYAMY

Supplementary Table 3. African swine Fever clinical scoring.

	1	2	3	4
Feeding	Mildly reduced	Reduced	Severely reduced	Complete anorexia
Mental Status	Mild depression	Moderate depression	Severe depression	Extreme depression
Activity	Mild, reluctance to move	Moderate, reluctance to move	Severe, reluctance to move	Recumbency, unable to stand
Diarrhea	Mild diarrhea	Moderate diarrhea (porridge-like)	Severe diarrhea (watery)	Hemorrhagic diarrhea
Cyanosis	Mild, slight bluish/purple tint visible only upon close examination	Moderate, clearly noticeable blue/purple discoloration	-	Severe, dark purple/grey discoloration immediately apparent
Hemorrhage	<5 pinpoint hemorrhages (1-2mm diameter), bright red coloration	5-10 hemorrhages (3-5mm diameter), dark red coloration	-	10 large hemorrhages (>5mm diameter), dark red/purple coloration
Joint Swelling	0-20% increase	20-40% increase	40-60% increase	>60% increase
Respiratory system	Mild tachypnea	Severe tachypnea	Abdominal breathing	Labored abdominal breathing with decreased frequency
Skin Mass	1 mass ≤1 cm in diameter	2-4 masses measuring 1-3 cm each	5-8 masses measuring 3-5 cm each	9 masses or any mass >5 cm
Body Condition	Mild emaciation	Moderate emaciation, visible pelvis	Severe emaciation, visible ribs/vertebrae	Critical emaciation, multiple bony prominences visible (>2 of pelvis/ribs/vertebrae)
Muscle Tremors	Focal intermittent	Focal continuous	Generalized intermittent	Generalized continuous
Gait Abnormalities	Lameness	Toe-walking	Occasional knuckling	Persistent knuckling with non-weight-bearing