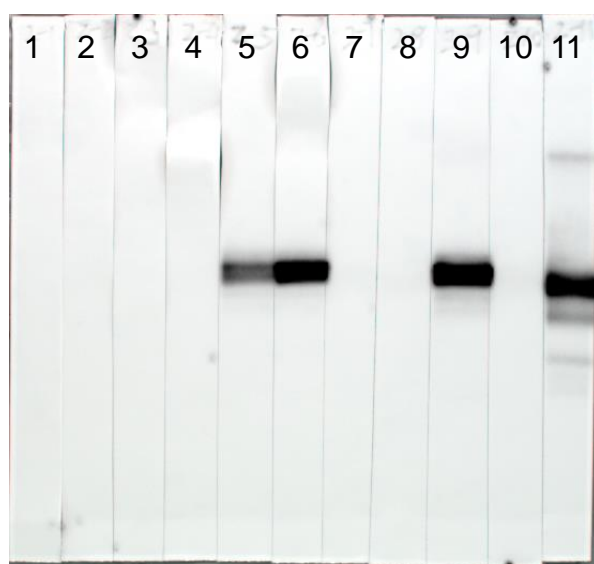


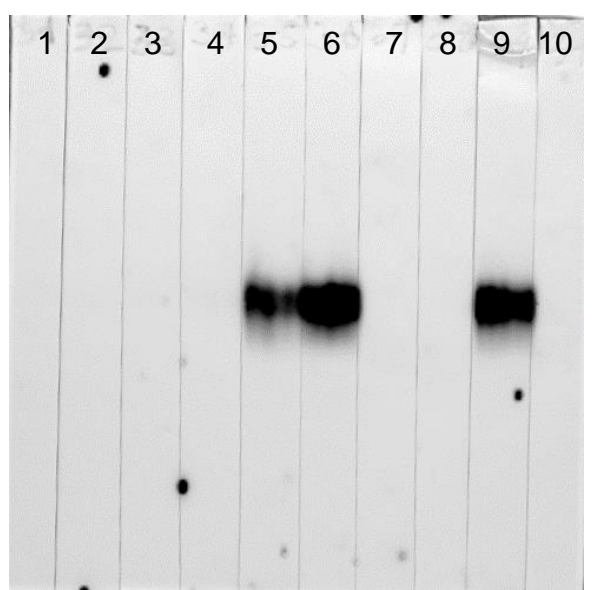
Figure S1. Binding affinity of 9 mAbs to gp42 conjugated to Sensor Chip CM5.

A

1. 2C3
2. 2E4
3. 3D3
4. 4D8
5. 4H7
6. 4H8
7. 6B8
8. 6C1
9. 11G10
10. 72A1
11. Anti-GST

B

1. 2C3
2. 2E4
3. 3D3
4. 4D8
5. 4H7
6. 4H8
7. 6B8
8. 6C1
9. 11G10
10. 72A1
11. Anti-GST

C

1. 2C3
2. 2E4
3. 3D3
4. 4D8
5. 4H7
6. 4H8
7. 6B8
8. 6C1
9. 11G10
10. 72A1

Figure S2. Western blot analysis of anti-gp42 mAbs against (A) gp42(residues 44-61), (B) gp42(residues 67-81) and gp42 protein.

The mAbs used in western blot were listed on the right.

A

EBV-gp42:rhLCV-gp42
Identity= 79.64% (176/221)

1	MVSEFKQVRVPLFTAIALVIVLLLAYFLPPRVRGGRVAAAAITWVPKPNVEVWPVDPPPP
	: : . : . .:
1	MVSEFKQVRVPLFTALALVIVLLLAYLPPVR.GGQVAAAAITWVANPKVEVWPAEPPPP
	: : . : . .:
61	VNFNKTAEQEYGDKEVKLPHWPTLHTFQVPQNYTKANCTYCNTREYTFSYKGCCFYFTK
	:: .:. . . : . .:. .
60	IDFNKTAEQEYGKPEIDLPHWKPTLHTFKVPENYTKPNCTYCNTQKYTFSFSKRCFYFTP
	: : . : . .:
121	KKHTWNGCFQACAELYPCTYFYGPTPDILPVVTRNLNAIESLWVG VYRVGEGNWTSLDGG
 : . :
120	QKHPWDGCFKACAELYECTYFYGPTANILPVVTGNLKAESLWVG VYKVGEKNWTSLDGG
	: : . : . .:
181	TFKVYQIFGSHCTYVSKFSTVPVSHHECSFLKPCLCVSQRSNS
	:. . . . : .:
180	NYQVYQIFGSHCTYVSKSSKVPVSHHECSFHKPCLCVSHRKD
	: : . : . .:

B

EBV-gp42-44-81aa:rhLCV-gp42-43-80aa
Identity= 71.05% (27/38)

1	WVPKPNVEVWPVDPPPPVNFNKTAEQEYGDKEVKLPHW
	: . . : . . : .
1	WVANPKVEVWPAEPPPIDFNKTAEQEYGKPEIDLPHW
	: : . : . .:

Figure S3. Alignment of EBV (Genbank ID: KF373730.1) and rhLCV (Genbank ID: AY037858) gp42 using DNAMAN.

(A) Full-length sequence and (B) N-terminal sequence of gp42 were analyzed. The identical amino acid was linked with vertical line.

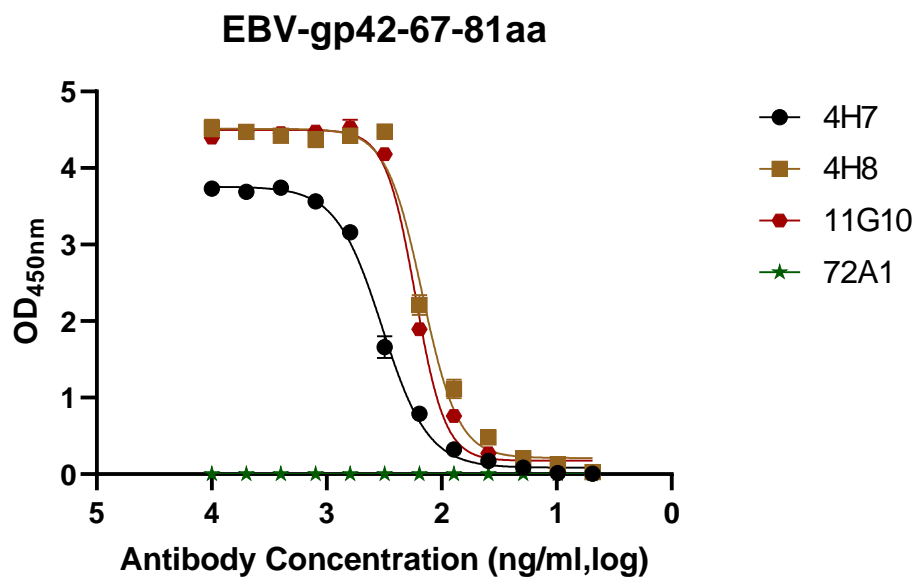
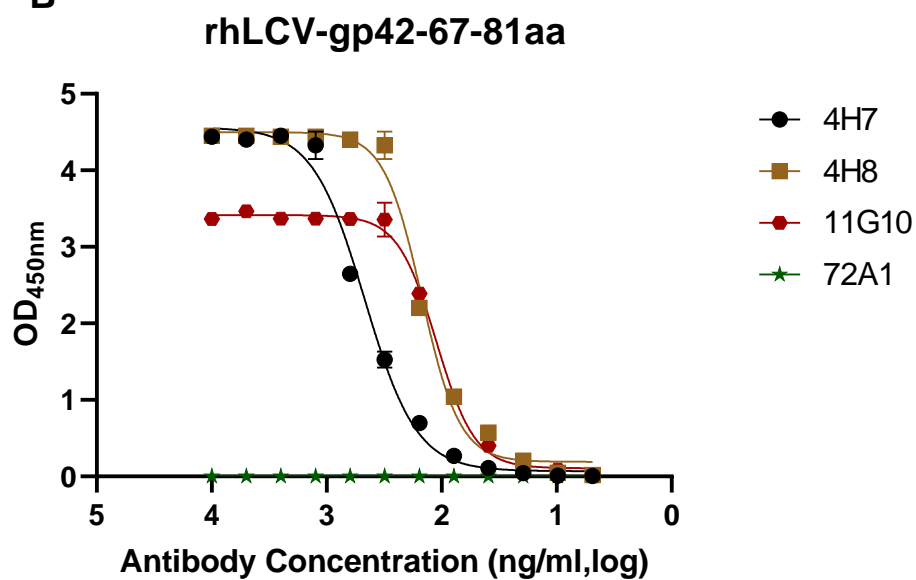
A**B**

Figure S4. The reactivity of 4H7, 4H8 and 11G10 with synthetic peptides, (A) EBV-gp42(residues 67-81) and (B) rhLCV-gp42(residues 66-80).

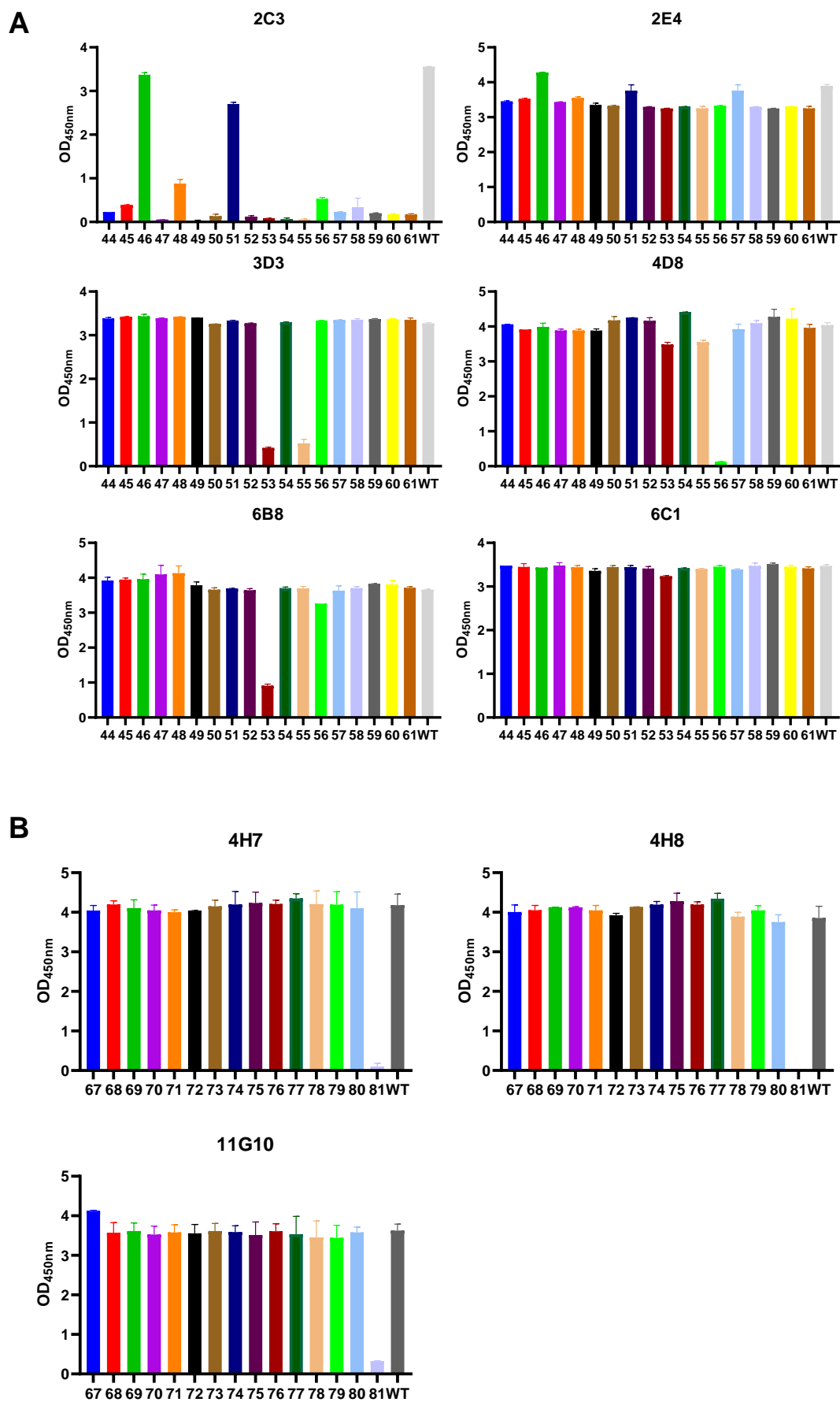


Figure S5. Alanine-scanning mutagenesis of gp42 N-terminal peptides. (A) gp42-44-61aa. (B) gp42-67-81aa.

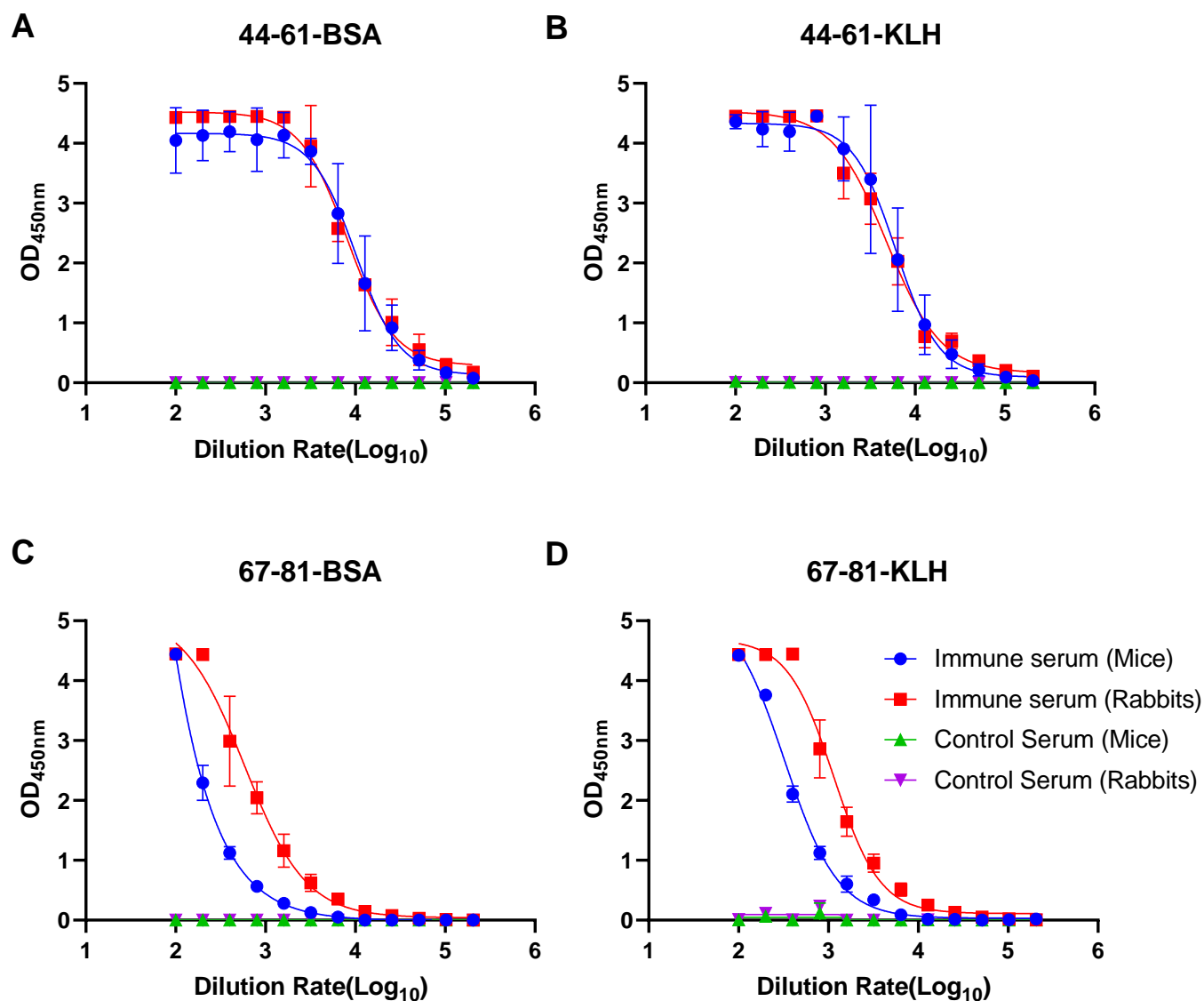
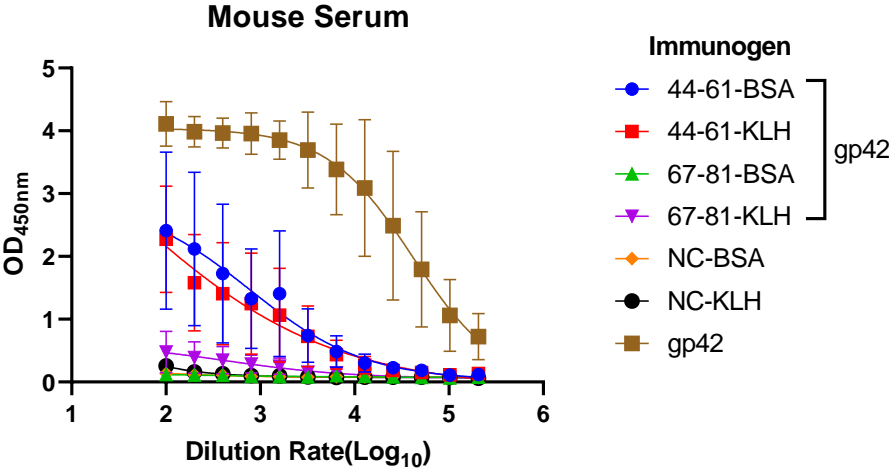


Figure S6. The reactivity of immune serum derived from mice immunized with gp42 proteins against BSA and KLH conjugated peptides, (A) and (B) gp42(residues 44-61), (C) and (D) gp42(residues 67-81).

A



B

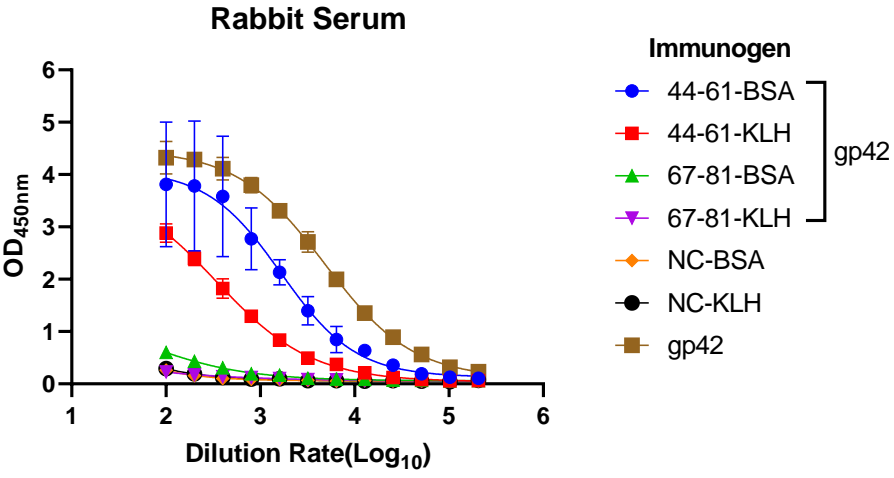


Figure S7. Immunized serum titers against gp42. (A) Mice and (B) rabbits immunized with KLH, BSA conjugated peptides.

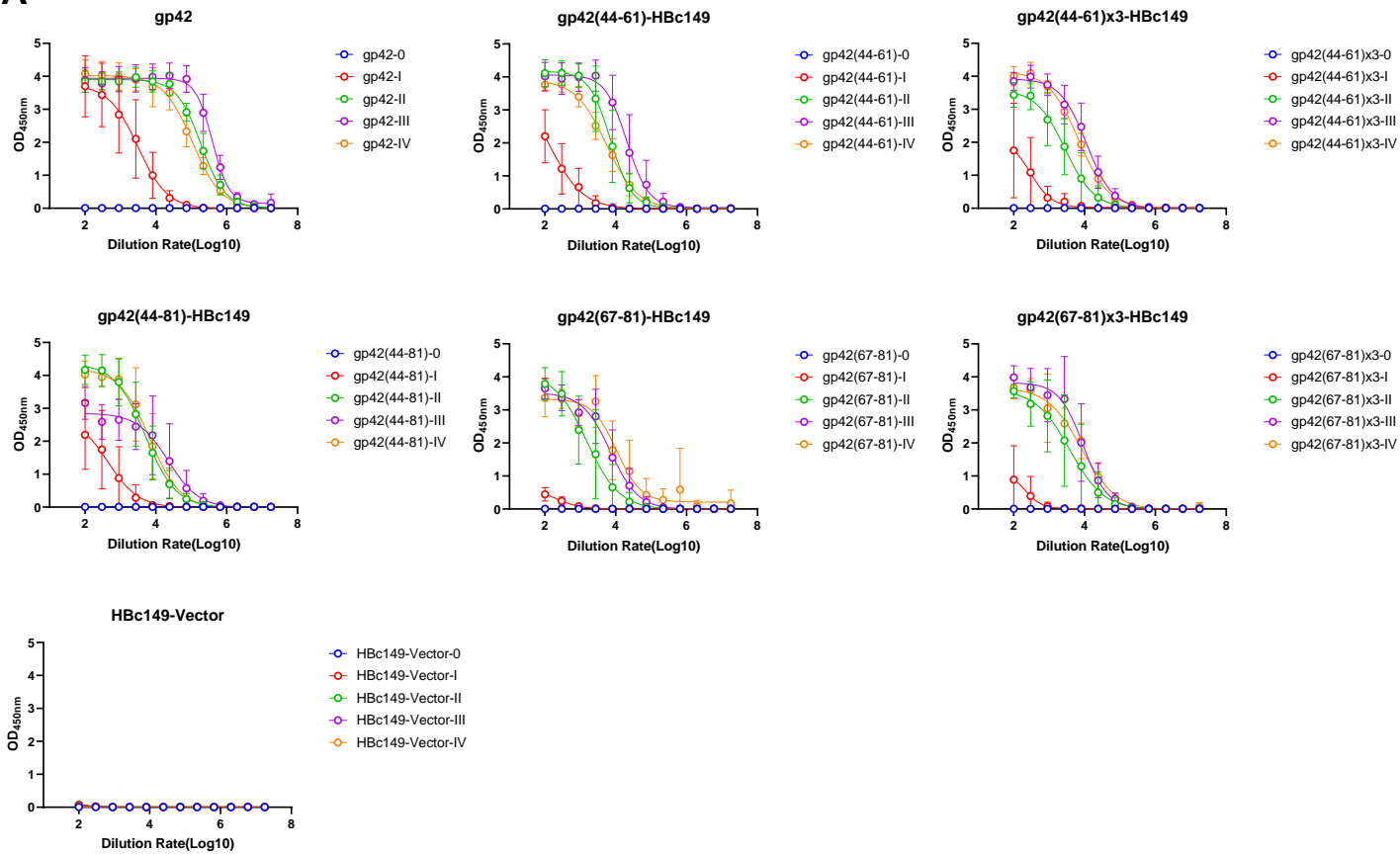
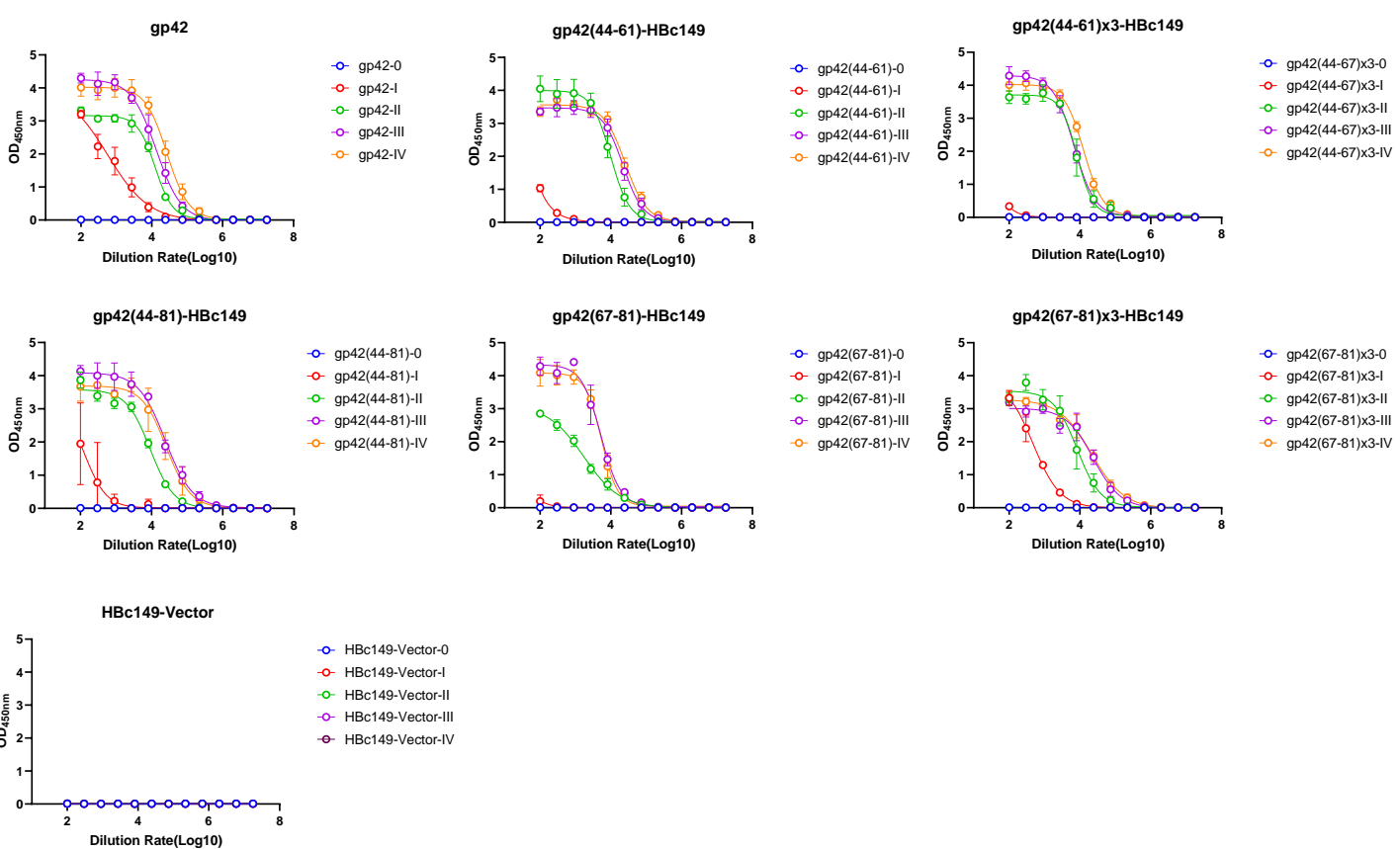
A**B**

Figure S8. Antibody titers against gp42. (A) Mice and (B) rabbits immunized with chimeric VLPs carrying peptides derived from gp42 N-terminal region.

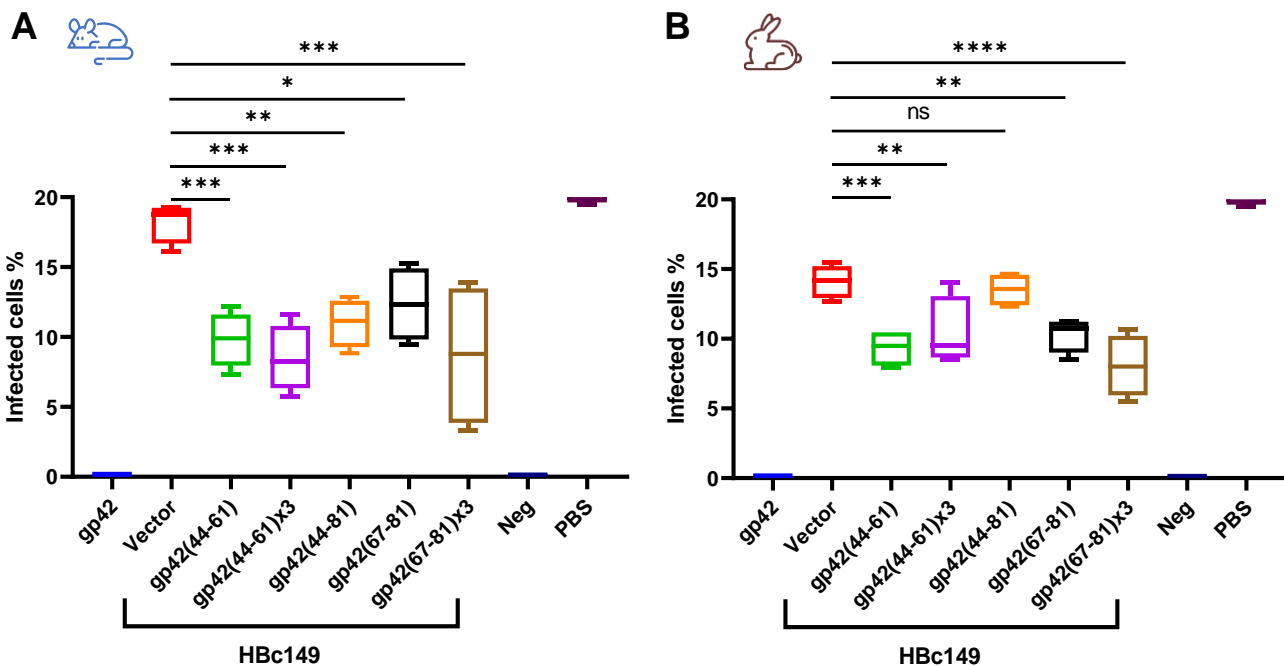


Figure S9. Serum samples collected at week 8 from (A) mice and (B) rabbits to block EBV infection into Akata cells. (* $p \leq 0.05$, ** $p \leq 0.01$, * $p \leq 0.001$)**