

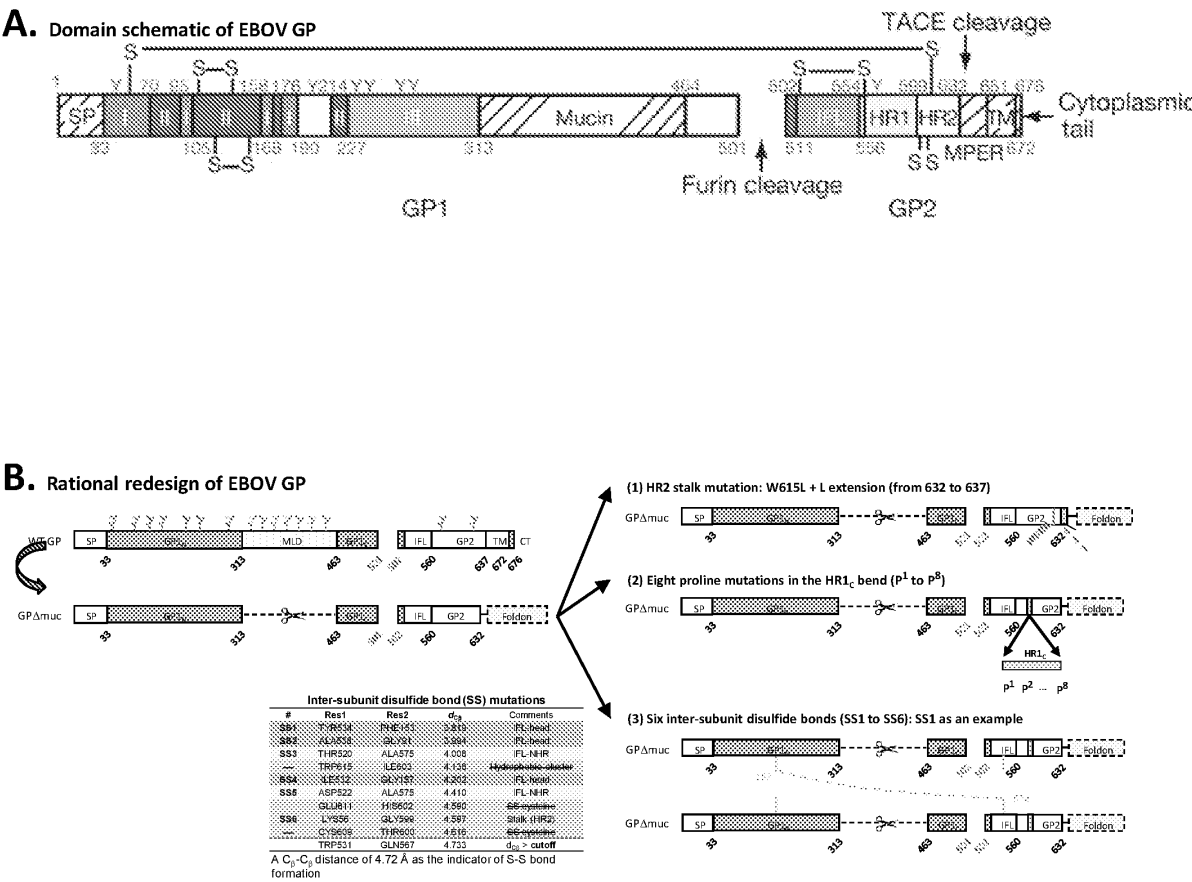


FIG. 1

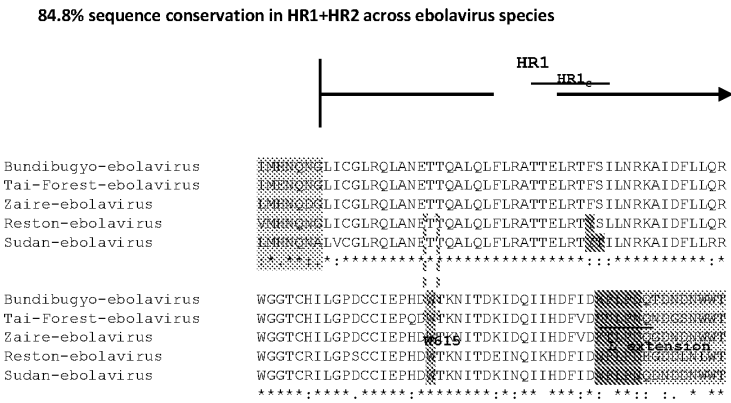


FIG. 2

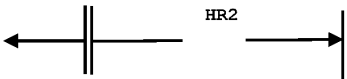


FIG. 3

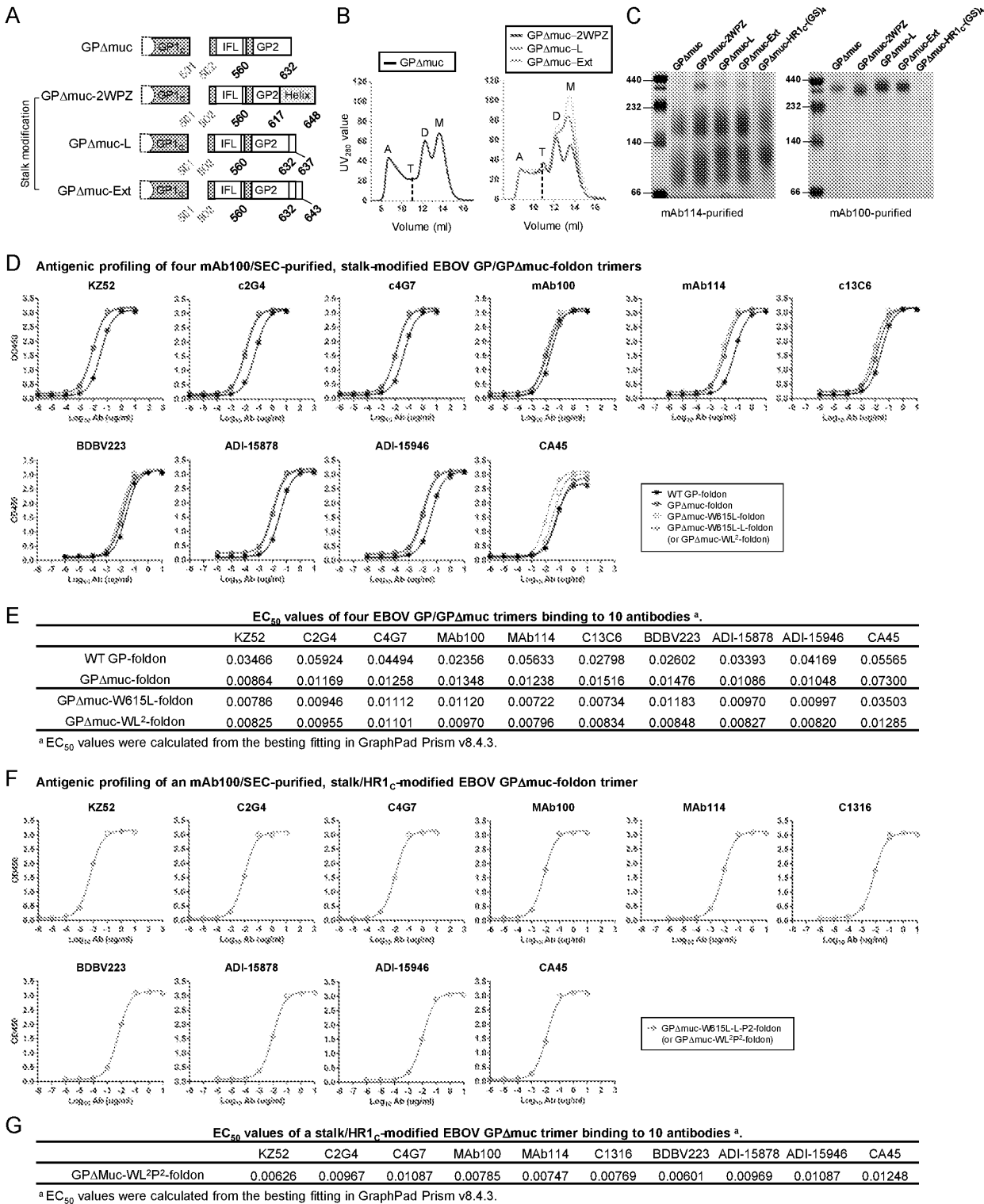


FIG. 3-cont.

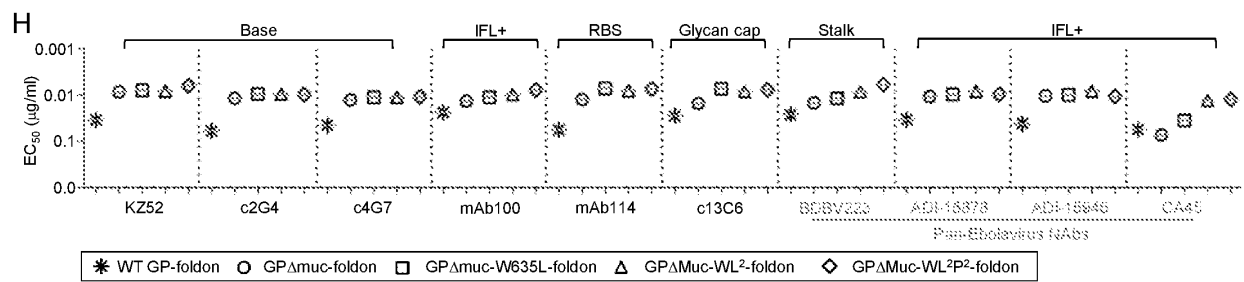


FIG. 4

A

Dimeric locking domains (LD) for stabilizing the NP-forming interface

>LD1 1NI8_A (40aa after C-terminal deletion)
SEALKILNNIRTLRAQAECTLEMLEEMLEKLEVNVNEREEESAA

>LD2 4YA_B (44aa after N-/C-terminal deletion)
MNDCYSKLKELVPSIPQNKVKSKMEILQHVIDYILDQLALDSH

>LD3 1OVX_A (50aa after N-terminal deletion)
GHHHHHHHTDKRKDGSGKLLYCSFCGKSQHEVRKLIAGPSVYICDECVDLCNDIREEIKEVAPHRER

>LD4 2MG4_A (58aa after N-terminal deletion)
MEKRPRTEFSEEQKALDLAFYFDRRLTPEWRRYLSQRLGLNEEQIERWFRKKEQIQGWSHPQFEK

>LD5 2JV7_A (78aa, without deletion)
DQPSVGDAFDKYNEAVRVFTQLSSAANCDAACLSLSSASSAACIAAVGELGLDVPLDLACAATATSSATEACKGCLW

>LD6 1JR5_A (88aa after N-terminal deletion)
MMKNIDTVREIITVASILIKFSREDIVENRANFIAFLNEIGVTHEGRKLNQNSFRKIVSELTQEDKKTLDIFNEGFEGVYRYLEMYTNK

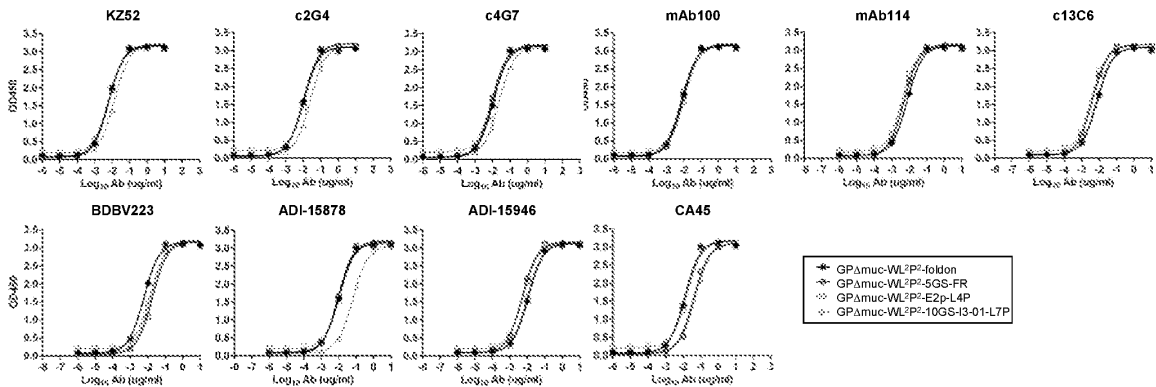
>LD7 1PZQ_A (46aa after N-/C-terminal deletion)
GSAASPAVDIGDRLDELEKALEALSAEDGHDDVGQRLESLLRRWNSRRADAPSTSAISED

>LD8 1R2A_A (39aa after N-terminal deletion)
HMGHIQIPPLTELLQGYTVEVLRQPPDLVDFAVEYFTRLREARR

>LD9 2JRX_A (65aa after N-/C-terminal deletion and glycan deletion)
MPQISRYSDQEVELLAELNLVLEKHKAPTDLSLMVLGNMVTNLINTAIAPAQRQAANSFARALQSSINEDKAHLEHHHHHHH

B

Antigenic evaluation of NPs presenting a stabilized GPΔmuc trimer



C

EC₅₀ values of EBOV GPΔmuc trimer and nanoparticles binding to 10 antibodies ^a.

	KZ52	c2G4	c4G7	mAb100	mAb114	c13C6	BDBV223	ADI-15878	ADI-15946	CA45
GPΔmuc-WL2P2-foldon	0.00626	0.009672	0.01087	0.007854	0.007466	0.007691	0.006012	0.009685	0.01087	0.01248
GPΔmuc-WL2P2-5GS-FR	0.006621	0.01025	0.009148	0.008558	0.005154	0.004143	0.01762	0.009293	0.005012	0.03987
GPΔmuc-WL2P2-E2p-L4P	0.006684	0.01345	0.009341	0.007583	0.004013	0.003659	0.01308	0.0116	0.005695	0.01685
GPΔmuc-WL2P2-10GS-I3-01-L7P	0.01321	0.02416	0.0226	0.00991	0.004625	0.007286	0.01489	0.06458	0.009234	0.04948

^a EC₅₀ values were calculated from the besting fitting in GraphPad Prism 8.4.3.

FIG. 4-cont.

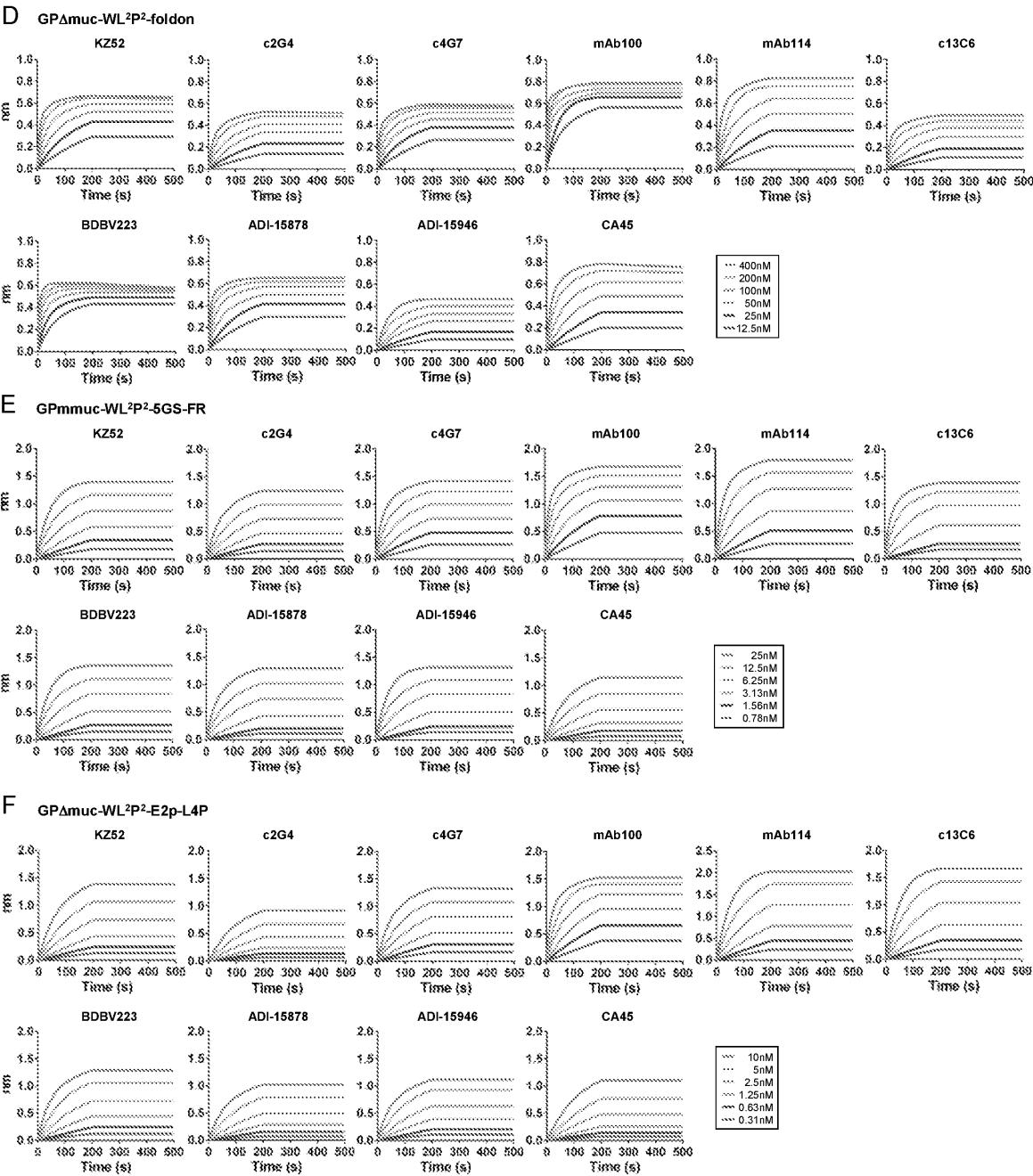


FIG. 4-cont.

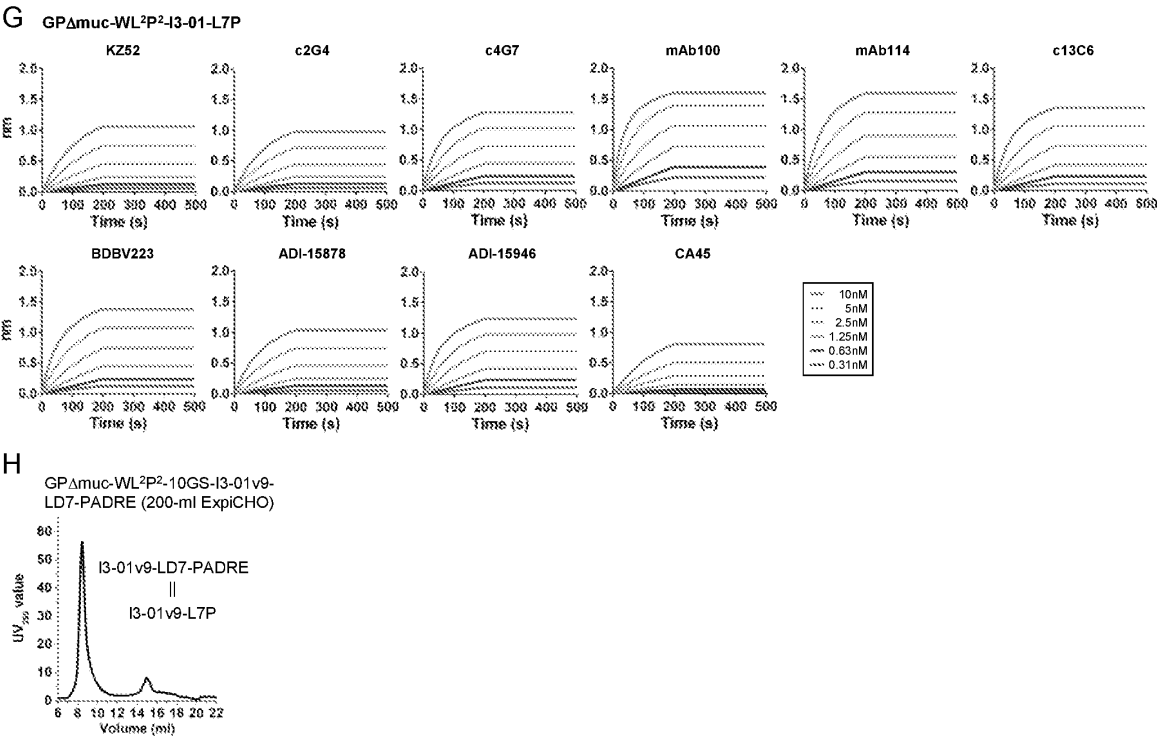
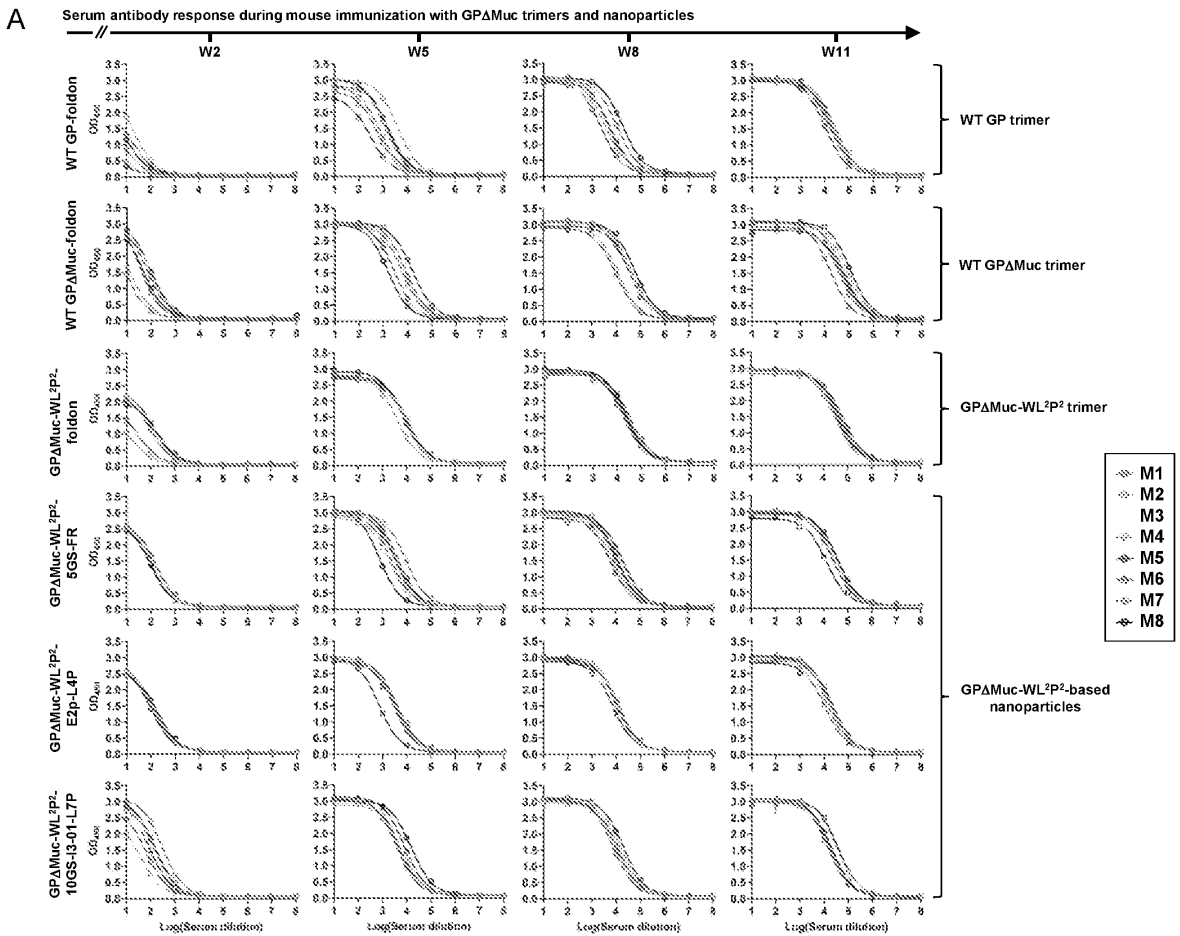


FIG. 5



B

EC ₅₀ titers (fold of dilution) of mouse sera binding to EBOV GP trimers ^a												
	WT GP- Foldon	W2		WT GP- Foldon	W5		WT GP- Foldon	W8		WT GP- Foldon	W11	
		WT GPΔMuc- foldon	GPΔMuc- WL2P2- foldon		WT GPΔMuc- foldon	GPΔMuc- WL2P2- foldon		WT GPΔMuc- foldon	GPΔMuc- WL2P2- foldon			
M1	0.2454	71.1	92.87	606.5	8377	10280	10740	32034	18532	10467	56041	36300
M2	21.07	118.6	13.88	4050	5879	3894	3663	40677	20082	20353	83513	28303
M3	4.523	–	67.15	376.3	–	4851	3323	–	14595	16418	–	37914
M4	1.434	16.29	30.62	1183	2755	8470	4338	10690	19570	11262	37135	49211
M5	2.982	88.95	186.9	289	15768	8994	2382	35240	22712	16546	56785	46695
M6	20.05	30.65	127	1804	2752	8816	5651	9447	35455	18888	16351	64055
M7	5.3	6.727	–	739.7	6293	–	5066	33547	–	26293	42415	–
M8	11.84	45.82	30.65	1449	1591	7248	17622	56265	25518	20626	117745	33217

^a The EC₅₀ values were calculated from the besting fitting in GraphPad Prism 8.

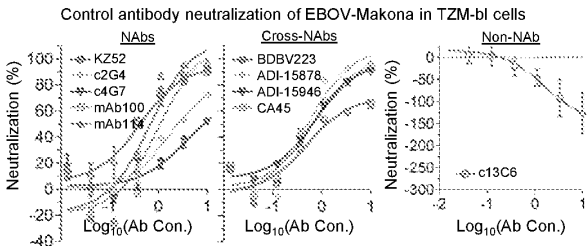
FIG. 5-cont.

C

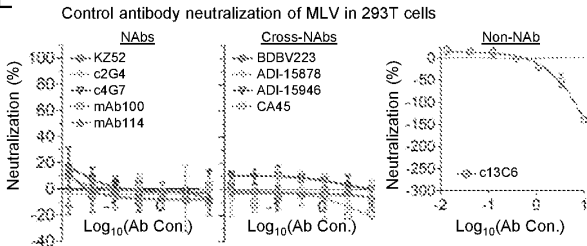
EC ₅₀ titers (fold of dilution) of mouse sera binding to EBOV GPΔMuc-WL ² P ² -presenting nanoparticles ^a												
	W2			W5			W8			W11		
	GPΔMuc-WL ² P ² -5GS-FR	GPΔMuc-WL ² P ² -E2p-L4P	GPΔMuc-WL ² P ² -10GS-I3-01-L7P	GPΔMuc-WL ² P ² -5GS-FR	GPΔMuc-WL ² P ² -E2p-L4P	GPΔMuc-WL ² P ² -10GS-I3-01-L7P	GPΔMuc-WL ² P ² -5GS-FR	GPΔMuc-WL ² P ² -E2p-L4P	GPΔMuc-WL ² P ² -10GS-I3-01-L7P	GPΔMuc-WL ² P ² -5GS-FR	GPΔMuc-WL ² P ² -E2p-L4P	
M1	152.9	172.3	147.5	2367	4154	4389	9932	11715	7637	24325	17631	13984
M2	146.4	112.1	40.52	3115	2559	5927	10324	12671	11689	22640	11150	34464
M3	101.6	85.93	115.2	1691	4077	7196	4239	8701	14184	10166	15309	26621
M4	158.5	121	158.9	2053	3426	4860	7750	6774	16144	23135	18605	18439
M5	99.49	105.6	164.8	3598	692.1	8006	6227	9166	19698	38846	13793	19315
M6	83.85	104.8	66.92	4238	2973	5440	17428	12140	10331		24189	17649
M7	100.8	142.3	305	9029	3443	3872	20184	10342	11975	34598	15778	21201
M8	103.8	178	93.03	725.6	3022	15325	11421	7550	16234	13170	11012	37636

^a The EC₅₀ values were calculated from the besting fitting in GraphPad Prism 8.

D



E



F

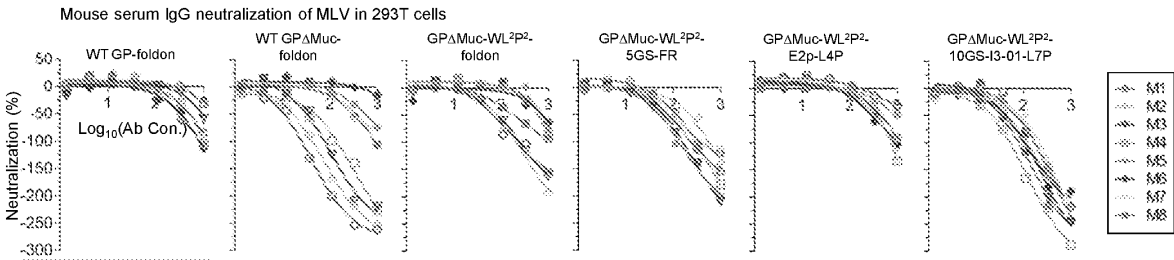
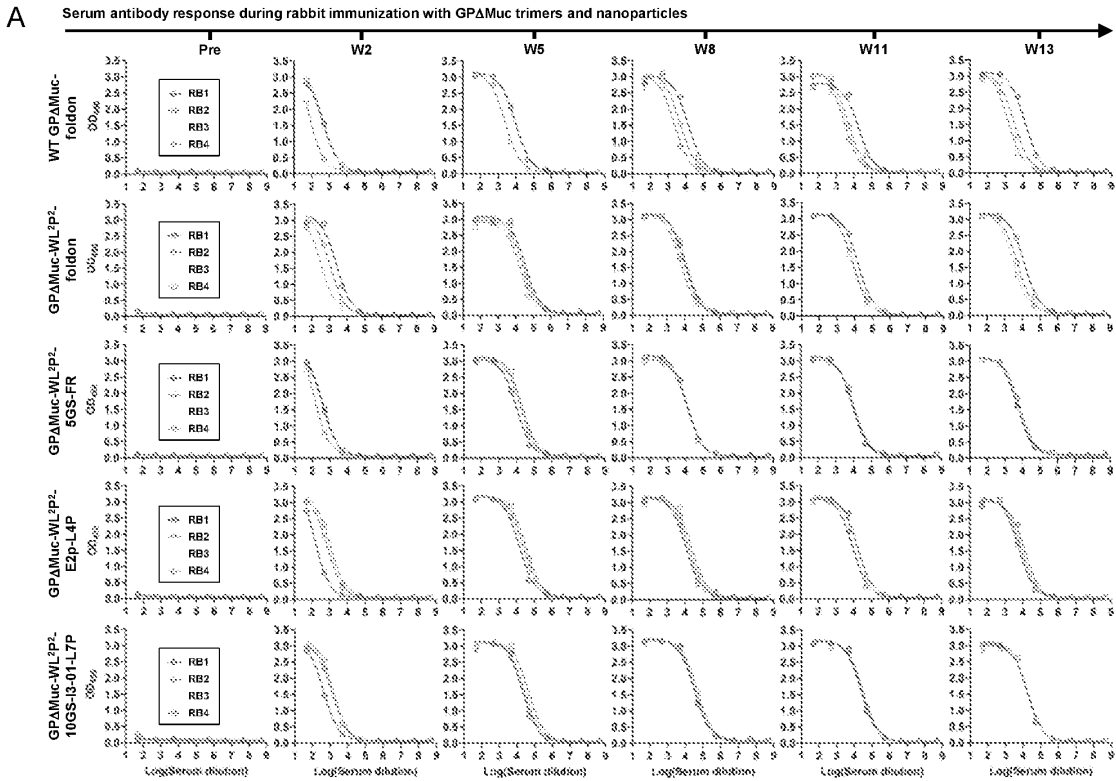


FIG. 6



B

EC₅₀ titers (fold of dilution) of rabbit sera binding to EBOV GP trimers^a

	W2		W5		W8		W11		W13	
	WT GPΔMuc- foldon	GPΔMuc- WL2P2- foldon	WT GPΔMuc- foldon	GPΔMuc- WL2P2- foldon	WT GPΔMuc- foldon	GPΔMuc- WL2P2- foldon	WT GPΔMuc- foldon	GPΔMuc- WL2P2- foldon	WT GPΔMuc- foldon	GPΔMuc- WL2P2- foldon
M1	464.2	2428	9404	35115	13868	10110	18135	16116	12777	13338
M2	455.9	1044	8904	26144	4647	12073	4446	8694	3143	5177
M3	701.1	378	8943	13273	12652	8363	9807	6517	6681	3586
M4	56.68	336.2	2392	18008	2220	6092	2663	6901	1443	3424

^a The EC₅₀ values were calculated from the besting fitting in GraphPad Prism 8.4.3.

EC₅₀ titers (fold of dilution) of mouse sera binding to EBOV WT GPΔMuc-presenting nanoparticles ^a

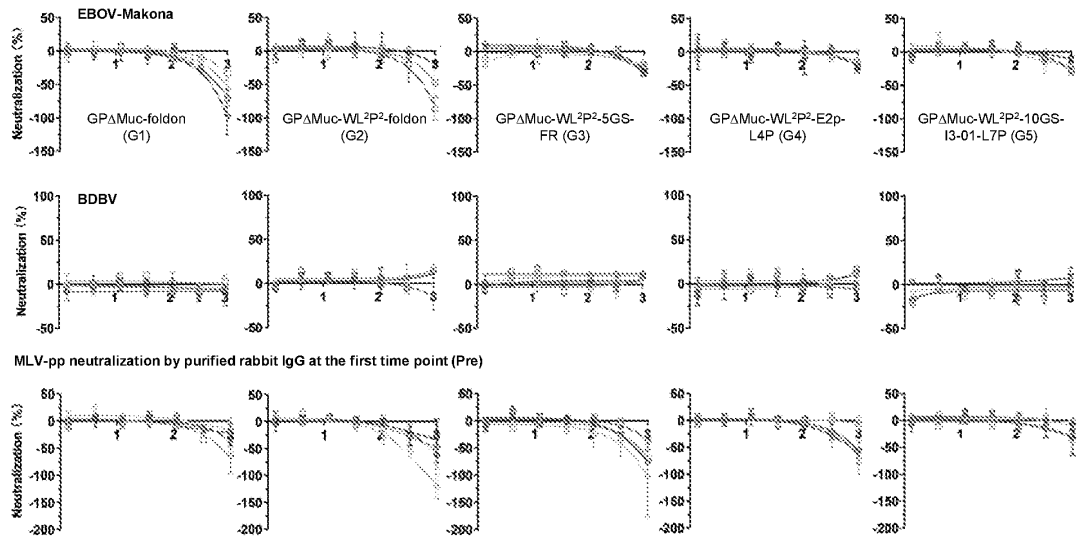
	W2		W5		W8		W11		W13			
	WT GPΔMuc- 5GS-FR	WT GPΔMuc- E2p-L4P	WT GPΔMuc- 10GS-I3- 01-L7P	WT GPΔMuc- 5GS-FR	WT GPΔMuc- E2p-L4P	WT GPΔMuc- 10GS-I3- 01-L7P	WT GPΔMuc- 5GS-FR	WT GPΔMuc- E2p-L4P	WT GPΔMuc- 10GS-I3- 01-L7P	WT GPΔMuc- 5GS-FR	WT GPΔMuc- E2p-L4P	WT GPΔMuc- 10GS-I3- 01-L7P
M1	392.7	133.3	404.2	9406	14736	21261	12961	11405	32895	9041	8972	26363
M2	116.9	734.7	1207	20093	23950	44607	12927	15609	45311	8893	16560	31073
M3	120	201.1	1774	18894	19727	41440	12770	12457	47664	8644	9954	28526
M4	368.2	1126	1382	16116	34695	27116	13140	22771	32291	10558	16803	25205

	W13		WT GPΔMuc- 10GS-I3- 01-L7P
	WT GPΔMuc- 5GS-FR	WT GPΔMuc- E2p-L4P	
M1	5272	5795	16907
M2	6817	12387	18398
M3	4146	4889	16645
M4	5047	8066	18753

The EC₅₀ values were calculated from the besting fitting in GraphPad Prism 8.4.3.

FIG. 6-cont.

C Ebolavirus-pp neutralization by purified rabbit IgG at the 1st time point (Pre)



D Ebolavirus-pp neutralization by purified rabbit IgG at the 2nd time point (w2)

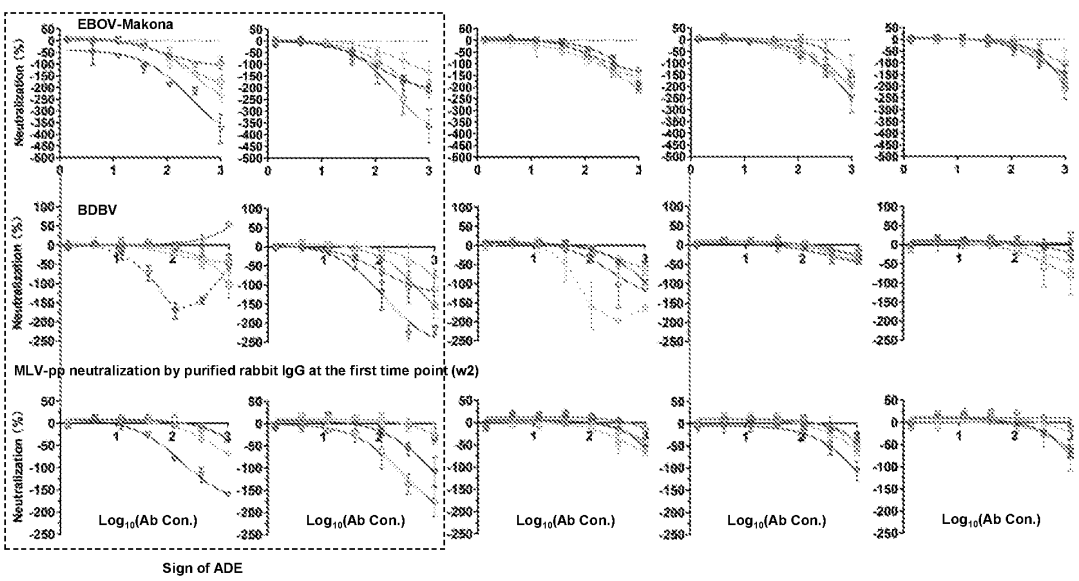
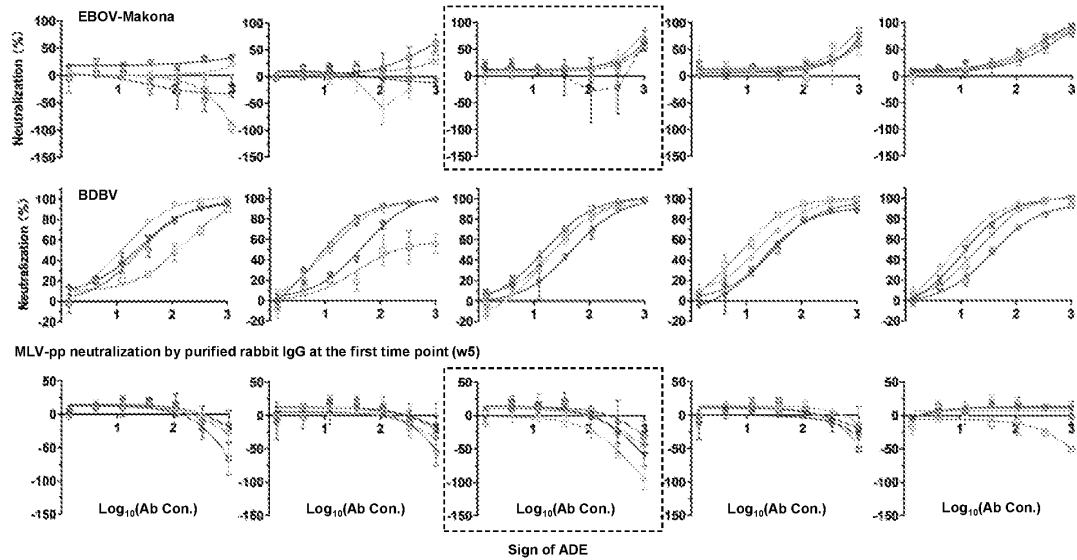
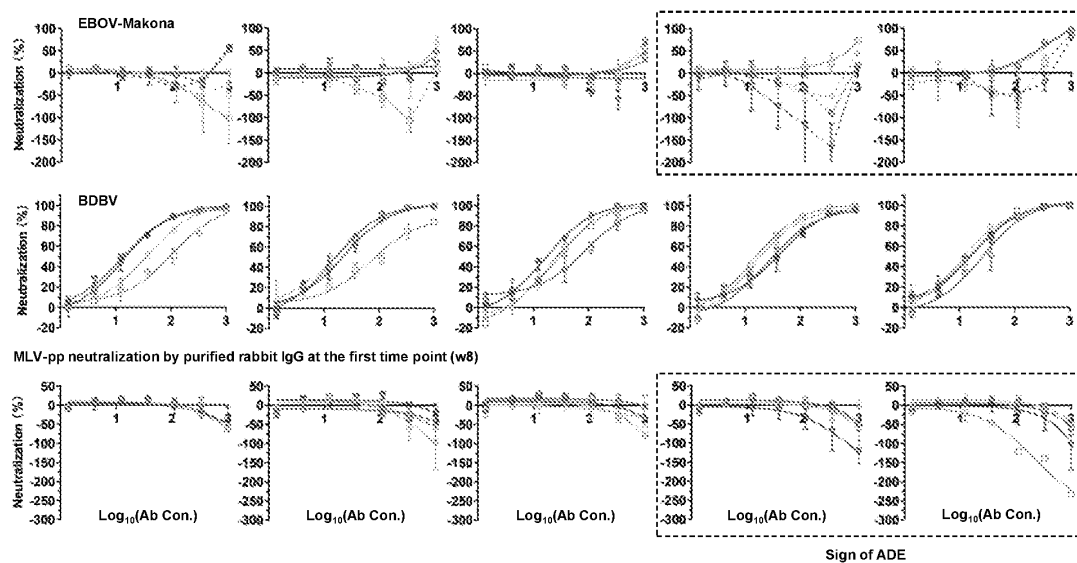


FIG. 6-cont.

E Ebolavirus-pp neutralization by purified rabbit IgG at the 3rd time point (w5)



F Ebolavirus-pp neutralization by purified rabbit IgG at the 4th time point (w8)



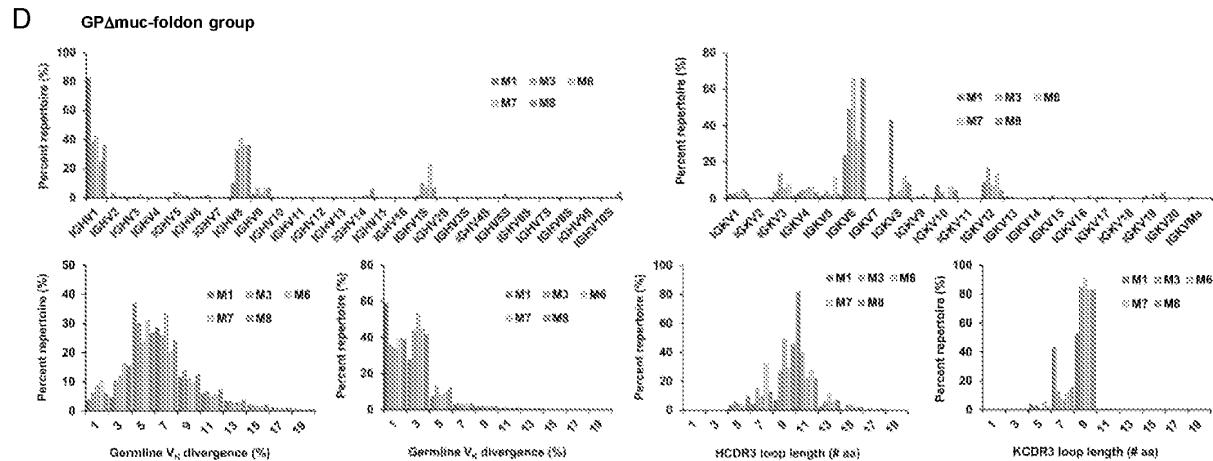
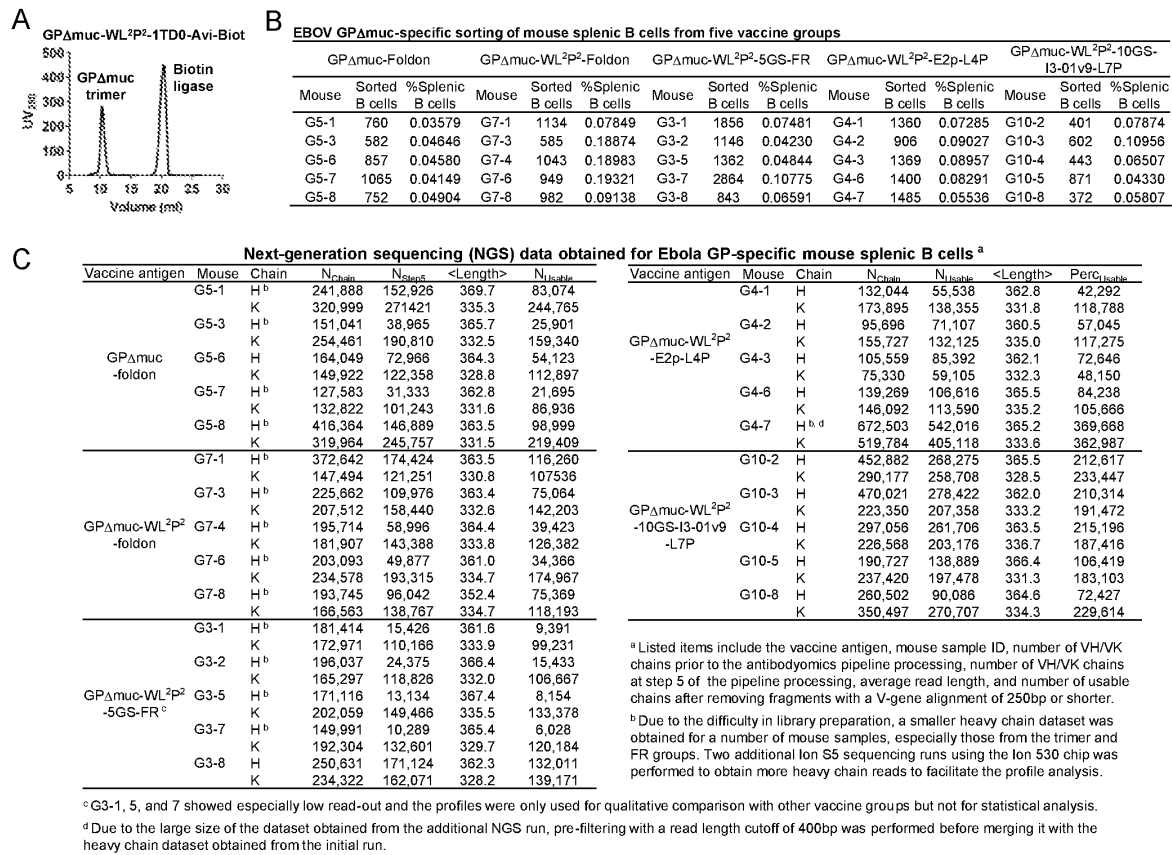


FIG. 7-cont.

