

Luka Sequence Alignment

SEQ_ID NO:1	---	HKDSQDQNKKEHVDK	SKSQQKDKRNVTNK	DKNSTAPDD	ICKNGK	IKRTETVYDEK	NI	57	CC8
SEQ_ID NO:2	---	ANKDSQDQTKKEHVDK	QAQKDKRNVDK	DKNTGPD	DDICKNGK	VTKRTVSEYDEK	NI	58	CC45
SEQ_ID NO:27	NSANKDSQDQTKKEHVDK	QAQKDKRNVDK	DKNTGPD	DDICKNGK	VTKRTVSEYDEK	NI	60	HMEREF0772	044(TCH60)
SEQ_ID NO:36	NSANKDSQDQTKKEHVDK	QAQKDKRNVDK	DKNTGPD	DDICKNGK	VTKRTVSEYDEK	NI	60	SAR2108	(MRS2A252)
SEQ_ID NO:34	NSANKDSQDQTKKEHVDK	QAQKDKRNVDK	DKNTGPD	DDICKNGK	VTKRTVSEYDEK	NI	60	SALG_02329	(A9635)
SEQ_ID NO:35	NSANKDSQDQTKKEHVDK	QAQKDKRNVDK	DKNTGPD	DDICKNGK	VTKRTVSEYDEK	NI	60	SAPIG2061	(ST398)
SEQ_ID NO:37	NSANKDSQDQTKKEHVDK	QAQKDKRNVDK	DKNTGPD	DDICKNGK	VTKRTVSEYDEK	NI	60	SALG_01930	(DI39)
SEQ_ID NO:26	NSAHKDSQDQNKKEHVDK	SKSQQKDKRNVTNK	DKNSTAPDD	ICKNGK	IKRTETVYDEK	NI	60	NEWMAN	
SEQ_ID NO:32	NSAHKDSQDQNKKEHVDK	SKSQQKDKRNVTNK	DKNSTVPPD	ICKNGK	IKRTETVYDEK	NI	60	SAB1876C	(RP122)
SEQ_ID NO:38	NSAHKDSQDQNKKEHVDK	SKSQQKDKRNVTNK	DKNSTVPPD	ICKNGK	IKRTETVYDEK	NI	60	SAV2005	(M350)
SEQ_ID NO:31	NSAHKDSQDQNKKEHVDK	SKSQQKDKRNVTNK	DKNSTVPPD	ICKNGK	IKRTETVYDEK	NI	60	SAB1813	(N315)
SEQ_ID NO:33	NSAHKDSQDQNKKEHVDK	SKSQQKDKRNVTNK	DKNSTAPDD	ICKNGK	IKRTETVYDEK	NI	60	SACOL2006	
SEQ_ID NO:29	NSAHKDSQDQNKKEHVDK	SKSQQKDKRNVTNK	DKNSTVPPD	ICKNGK	IKRTETVYDEK	NI	60	USA300	(TCH959)
SEQ_ID NO:28	NSAHKDSQDQNKKEHVDK	SKSQQKDKRNVTNK	DKNSTVPPD	ICKNGK	IKRTETVYDEK	NI	60	TCH130	
SEQ_ID NO:30	NSAHKDSQDQNKKEHVDK	SKSQQKDKRNVTNK	DKNSTVPPD	ICKNGK	IKRTETVYDEK	NI	60	MW1942	(MM2)
SEQ_ID NO:25	NSAHKDSQDQNKKEHVDK	SKSQQKDKRNVTNK	DKNSTXPPD	ICKNGK	IKRTETVYDEK	NI	60	Majority	
SEQ_ID NO:1	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	117		
SEQ_ID NO:2	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	118		
SEQ_ID NO:27	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	120		
SEQ_ID NO:36	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	120		
SEQ_ID NO:34	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	120		
SEQ_ID NO:35	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	120		
SEQ_ID NO:37	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	120		
SEQ_ID NO:26	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	120		
SEQ_ID NO:32	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	120		
SEQ_ID NO:38	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	120		
SEQ_ID NO:31	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	120		
SEQ_ID NO:33	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	120		
SEQ_ID NO:29	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	120		
SEQ_ID NO:28	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	120		
SEQ_ID NO:30	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	120		
SEQ_ID NO:25	LQNLQFDFIDDP	TYDKNVLLVVKQGS	IHSNLIK	FESHKEE	KNNSWLKYPSEYHVD	FQVKRN	120		

FIG. 1

Luka Sequence Alignment (Cont.)

SEQ_ID_NO:1	RKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	177
SEQ_ID_NO:2	PKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	178
SEQ_ID_NO:27	PKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	180
SEQ_ID_NO:36	PKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	180
SEQ_ID_NO:34	PKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	180
SEQ_ID_NO:35	PKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	180
SEQ_ID_NO:37	RKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	180
SEQ_ID_NO:26	RKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	179
SEQ_ID_NO:32	RKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	180
SEQ_ID_NO:38	RKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	180
SEQ_ID_NO:31	RKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	180
SEQ_ID_NO:33	RKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	180
SEQ_ID_NO:29	PKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	179
SEQ_ID_NO:28	RKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	180
SEQ_ID_NO:30	PKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	180
	*****	*****	*****	*****	
SEQ_ID_NO:25	RKTEILDQLPKNKISTAKVDS	PFSSYSSGCKFDSTKG	IGRTSSNSYSKTI	SYNQNYDTIA	180
		140/141	149	156	
SEQ_ID_NO:1	SGKNNNNHHVHWS	VIANDLKYGGVEKNRND	ELFYRNTRIATVEN	PELSFASKYRYPALVR	237
SEQ_ID_NO:2	SGKNNNNHHVHWS	VIANDLKYGNEIKNRND	ELFYRNTRIATVEN	PELSFASKYRYPALVR	238
SEQ_ID_NO:27	SGKNNNNHHVHWS	VIANDLKYGNEIKNRND	ELFYRNTRIATVEN	PELSFASKYRYPALVR	240
SEQ_ID_NO:36	SGKNNNNHHVHWS	VIANDLKYGNEIKNRND	ELFYRNTRIATVEN	PELSFASKYRYPALVR	240
SEQ_ID_NO:34	SGKNNNNHHVHWS	VIANDLKYGNEIKNRND	ELFYRNTRIATVEN	PELSFASKYRYPALVR	240
SEQ_ID_NO:35	SGKNNNNHHVHWS	VIANDLKYGVEKNRND	DFLYRNTRIATVEN	PELSFASKYRYPALVR	240
SEQ_ID_NO:37	SGKNNNNHHVHWS	VIANDLKYGGVEKNRND	ELFYRTTRIATVEN	PELSFASKYRYPALVR	240
SEQ_ID_NO:26	SGKNNNNHHVHWS	VIANDLKYGGVEKNRND	ELFYRNTRIATVEN	PELSFASKYRYPALVR	239
SEQ_ID_NO:32	IGKNNNNHHVHWS	VIANDLKYGGVEKNRND	ELFYRNTRIATVEN	PELSFASKYRYPALVR	240
SEQ_ID_NO:38	SGKNNNNHHVHWS	VIANDLKYGGVEKNRND	ELFYRNTRIATVEN	PELSFASKYRYPALVR	240
SEQ_ID_NO:31	SGKNNNNHHVHWS	VIANDLKYGGVEKNRND	ELFYRNTRIATVEN	PELSFASKYRYPALVR	240
SEQ_ID_NO:33	SGKNNNNHHVHWS	VIANDLKYGGVEKNRND	ELFYRNTRIATVEN	PELSFASKYRYPALVR	240
SEQ_ID_NO:29	SGKNNNNHHVHWS	VIANDLKYGGVEKNRND	ELFYRNTRIATVEN	PELSFASKYRYPALVR	239
SEQ_ID_NO:28	SGKNNNNHHVHWS	VIANDLKYGGVEKNRND	ELFYRNTRIATVEN	PELSFASKYRYPALVR	240
SEQ_ID_NO:30	SGKNNNNHHVHWS	VIANDLKYGGVEKNRND	ELFYRNTRIATVEN	PELSFASKYRYPALVR	240
	*****	*****	*****	*****	
SEQ_ID_NO:25	SGKNNNNHHVHWS	VIANDLKYGGVEKNRND	ELFYRNTRIATVEN	PELSFASKYRYPALVR	240
				193	

FIG. 1 (Cont.)

LukB Sequence Alignment

SEQ_ID_NO:15	KINSEIKQVSEKKNLDGDTKMYTRTATTSDSQKNITQSQLOFNFLTEPNYDKETVFIAKAGT	60	CC8
SEQ_ID_NO:16	EIKSKIITVSEKKNLDGDTKMYTRTATTSDEKKISQSQLOFNFLTEPNYDKETVFIAKAGT	60	CC45
SEQ_ID_NO:40	EIKSKIITVSEKKNLDGDTKMYTRTATTSDEKKISQSQLOFNFLTEPNYDKETVFIAKAGT	60	A9635
SEQ_ID_NO:43	EIKSKIITVSEKKNLDGDTKMYTRTATTSDEKKISQSQLOFNFLTEPNYDKETVFIAKAGT	60	E1410
SEQ_ID_NO:45	EIKSKIITVSEKKNLDGDTKMYTRTATTSDEKKISQSQLOFNFLTEPNYDKETVFIAKAGT	60	M5A252
SEQ_ID_NO:42	KINSEIKQVSEKKNLDGDTKMYTRTATTSDSQKNITQSQLOFNFLTEPNYDKETVFIAKAGT	60	D139
SEQ_ID_NO:46	KINSEIKAVSEKKNLDGDTKMYTRTATTSDSQKNITQSQLOFNFLTEPNYDKETVFIAKAGT	60	MU.50
SEQ_ID_NO:44	KINSEIKQVSEKKNLDGDTKMYTRTATTSDSQKNITQSQLOFNFLTEPNYDKETVFIAKAGT	60	JKD6008
SEQ_ID_NO:41	-----DKETVFIAKAGT	12	COL
SEQ_ID_NO:115	KINSEIKQVSEKKNLDGDTKMYTRTATTSDSQKNITQSQLOFNFLTEPNYDKETVFIAKAGT	60	USA300 FPR3757
SEQ_ID_NO:116	KINSEIKQVSEKKNLDGDTKMYTRTATTSDSQKNITQSQLOFNFLTEPNYDKETVFIAKAGT	60	NEWMAN
SEQ_ID_NO:98	KINSEIKAVSEKKNLDGDTKMYTRTATTSDSQKNITQSQLOFNFLTEPNYDKETVFIAKAGT	60	RF122
SEQ_ID_NO:47	KINSEIKAVSEKKNLDGDTKMYTRTATTSDSQKNITQSQLOFNFLTEPNYDKETVFIAKAGT	60	MW2
SEQ_ID_NO:99	KINSEIKQVSEKKNLDGDTKMYTRTATTSDSQKNITQSQLOFNFLTEPNYDKETVFIAKAGT	60	TCH130

SEQ_ID_NO:39	KINSEIKQVSEKKNLDGDTKMYTRTATTSDSQKNITQSQLOFNFLTEPNYDKETVFIAKAGT	60	
	45	53	
SEQ_ID_NO:15	IGSGLRLDPNGYWNSTLRWPGSYSVSIQNVDDNN-NTNVDFAPKNQDE	119	
SEQ_ID_NO:16	IGSGLKILNPNNGYWNSTLRWPGSYSVSIQNVDDNNSTNVDFAPKNQDE	120	
SEQ_ID_NO:40	IGSGLKILNPNNGYWNSTLRWPGSYSVSIQNVDDNNSTNVDFAPKNQDE	120	
SEQ_ID_NO:43	IGSGLKILNPNNGYWNSTLRWPGSYSVSIQNVDDNNSTNVDFAPKNQDE	120	
SEQ_ID_NO:45	IGSGLKILNPNNGYWNSTLRWPGSYSVSIQNVDDNNSTNVDFAPKNQDE	120	
SEQ_ID_NO:42	IGSGLRLDPNGYWNSTLRWPGSYSVSIQNVDDNN-NTNVDFAPKNQDE	119	
SEQ_ID_NO:46	IGSGLRLDPNGYWNSTLRWPGSYSVSIQNVDDNN-NTNVDFAPKNQDE	119	
SEQ_ID_NO:44	IGSGLRLDPNGYWNSTLRWPGSYSVSIQNVDDNN-NTNVDFAPKNQDE	119	
SEQ_ID_NO:41	IGSGLRLDPNGYWNSTLRWPGSYSVSIQNVDDNN-NTNVDFAPKNQDE	71	
SEQ_ID_NO:115	IGSGLRLDPNGYWNSTLRWPGSYSVSIQNVDDNN-NTNVDFAPKNQDE	119	
SEQ_ID_NO:116	IGSGLRLDPNGYWNSTLRWPGSYSVSIQNVDDNN-NTNVDFAPKNQDE	119	
SEQ_ID_NO:98	IGSGLRLDPNGYWNSTLRWPGSYSVSIQNVDDNN-NTNVDFAPKNQDE	119	
SEQ_ID_NO:47	IGSGLRLDPNGYWNSTLRWPGSYSVSIQNVDDNN-NTNVDFAPKNQDE	119	
SEQ_ID_NO:99	IGSGLRLDPNGYWNSTLRWPGSYSVSIQNVDDNN-NTNVDFAPKNQDE	119	

SEQ_ID_NO:39	IGSGLRLDPNGYWNSTLRWPGSYSVSIQNVDDNN-NTNVDFAPKNQDE	119	
	109		

FIG. 2

LukB Sequence Alignment (Cont.)

SEQ_ID_NO:15	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	179
SEQ_ID_NO:16	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	180
SEQ_ID_NO:40	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	180
SEQ_ID_NO:43	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	180
SEQ_ID_NO:45	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	180
SEQ_ID_NO:42	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	179
SEQ_ID_NO:46	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	179
SEQ_ID_NO:44	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	179
SEQ_ID_NO:41	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	131
SEQ_ID_NO:115	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	179
SEQ_ID_NO:116	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	179
SEQ_ID_NO:98	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	179
SEQ_ID_NO:47	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	179
SEQ_ID_NO:99	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	179
	*****:***:*****	
SEQ_ID_NO:39	KTGGDFSINRGGLTGNITKESNYSETISYQQPSYRTLLDQSTSHKGVGWKVEAHLINNMG	179
	121	154
SEQ_ID_NO:15	HDHTRQLTNDSDNRTKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	239
SEQ_ID_NO:16	HDHTRQLTNDSDNRVKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	240
SEQ_ID_NO:40	HDHTRQLTNDSDNRVKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	240
SEQ_ID_NO:43	HDHTRQLTNDSDNRVKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	240
SEQ_ID_NO:45	HDHTRQLTNDSDNRVKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	240
SEQ_ID_NO:42	HDHTRQLTNDSDNRVKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	239
SEQ_ID_NO:46	HDHTRQLTNDSDNRVKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	239
SEQ_ID_NO:44	HDHTRQLTNDSDNRVKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	239
SEQ_ID_NO:41	HDHTRQLTNDSDNRVKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	191
SEQ_ID_NO:115	HDHTRQLTNDSDNRVKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	239
SEQ_ID_NO:116	HDHTRQLTNDSDNRVKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	239
SEQ_ID_NO:98	HDHTRQLTNDSDNRVKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	239
SEQ_ID_NO:47	HDHTRQLTNDSDNRVKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	239
SEQ_ID_NO:99	HDHTRQLTNDSDNRVKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	239
	*****:*****	
SEQ_ID_NO:39	HDHTRQLTNDSDNRVKSEIFSLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDK	239

FIG. 2 (Cont.)

SEQ ID NO: 39 KDKGKSQFVVHYKRSMDEFKIDWNRHGFWGSNGENHVDKKEKLSALYFVDWKTNNVKF 299

FIG. 2 (Cont.)

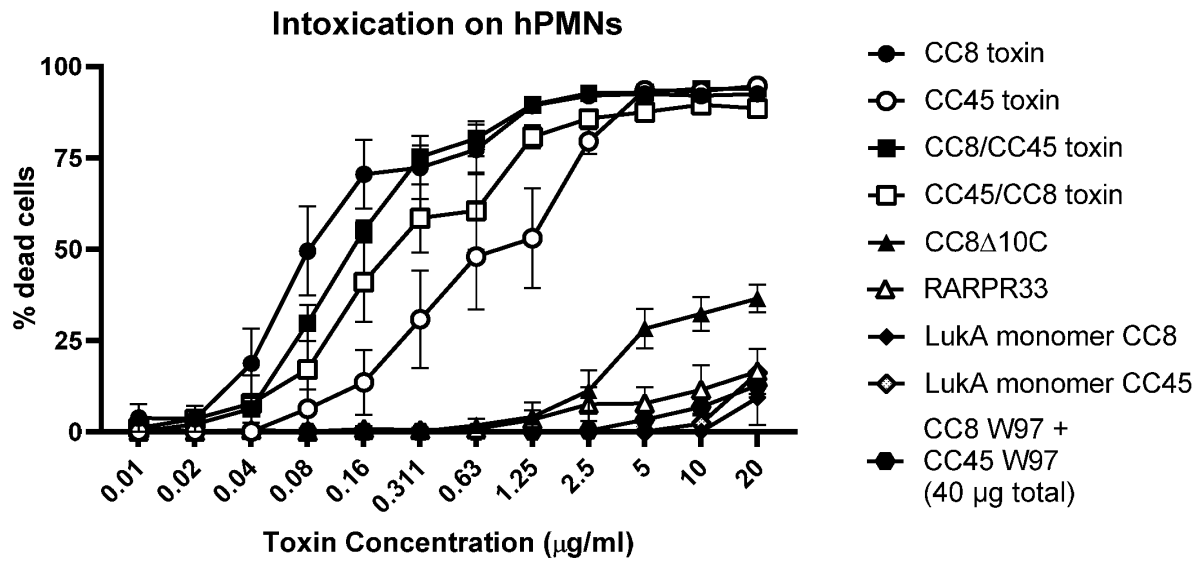


FIG. 3

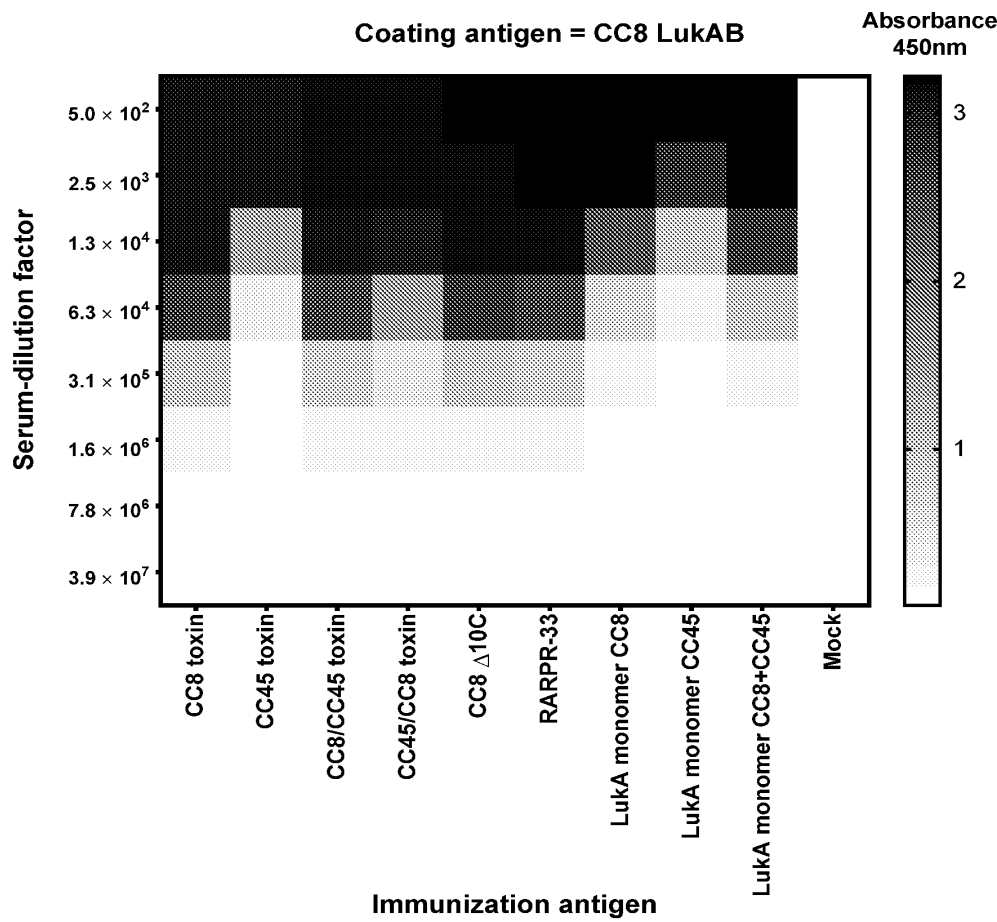


FIG. 4A

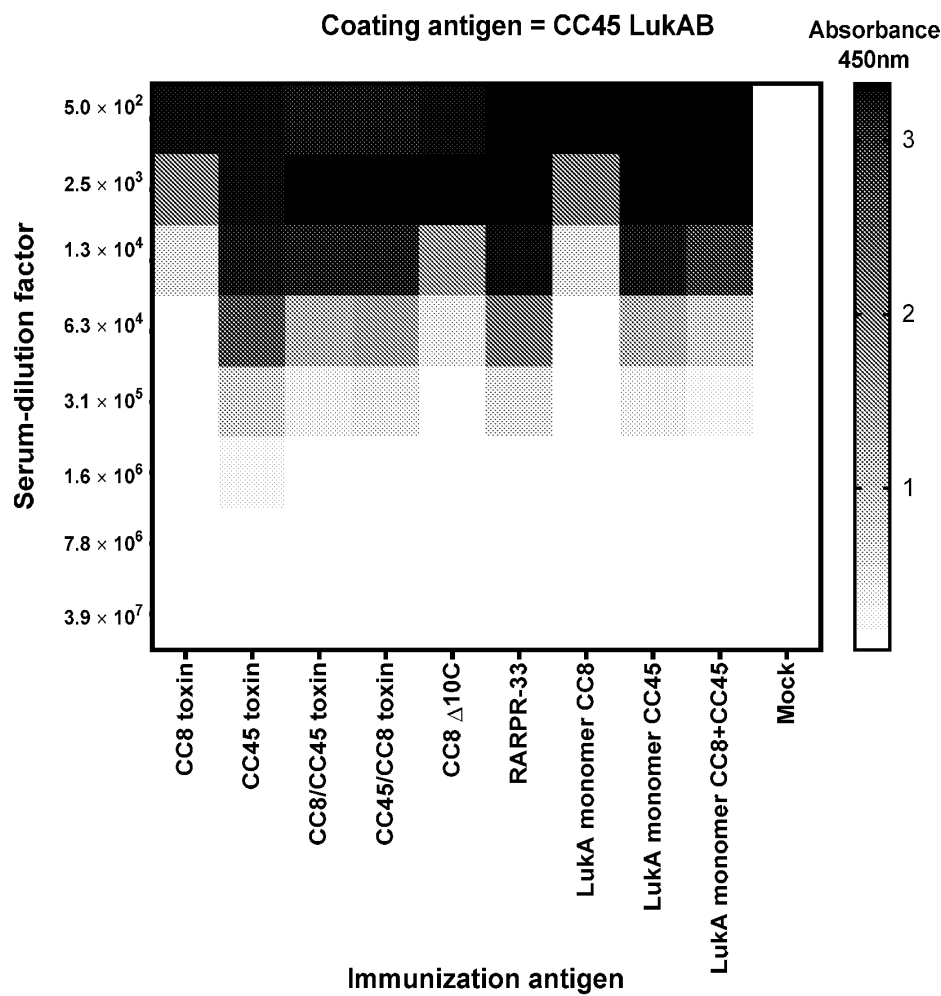


FIG. 4B

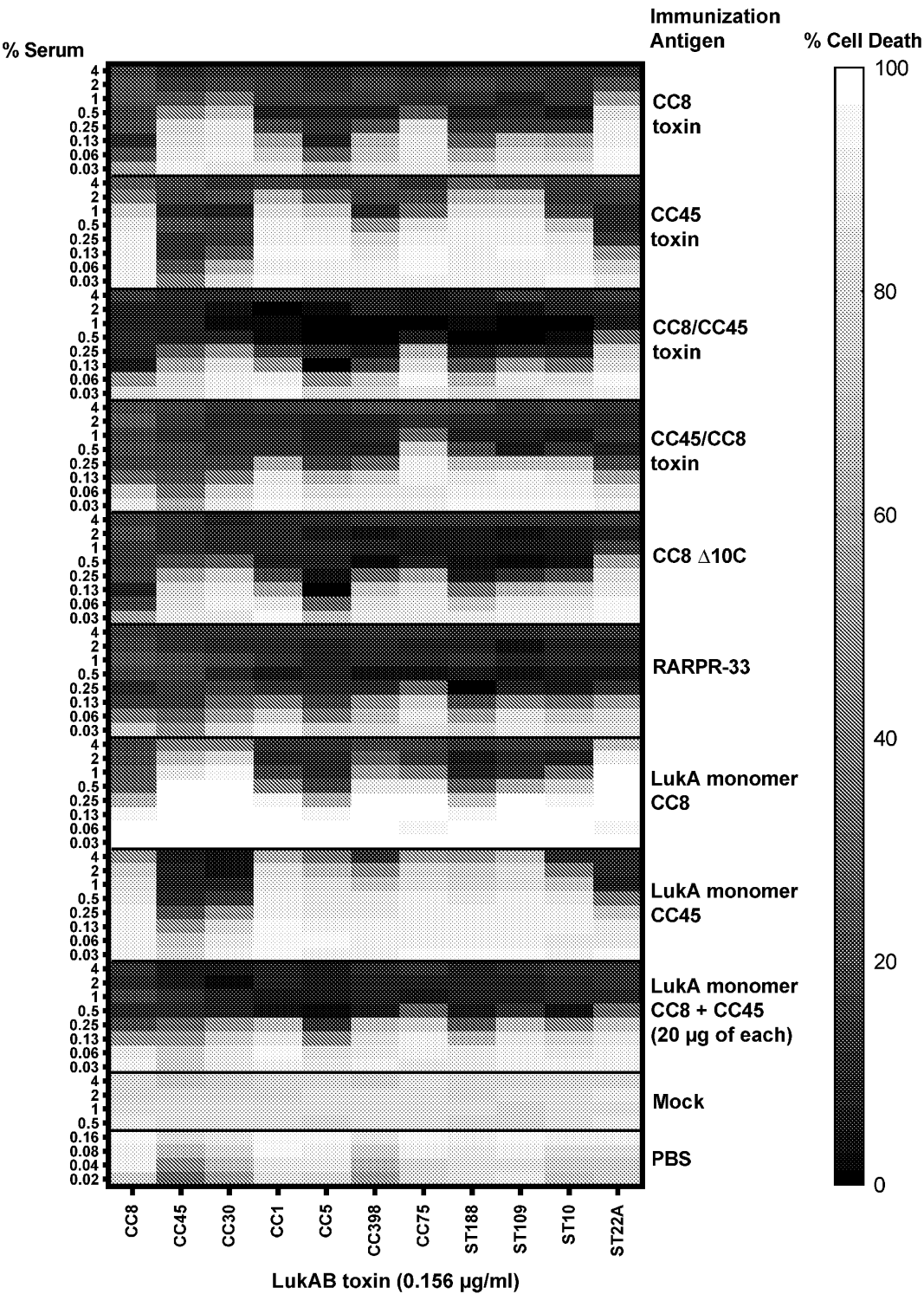


FIG. 5

Neutralization Assay: % Dead Human PMNs (Intoxication with LD ₅₀ of LukAB variants + 2% serum from immunized mice); n = 4 donors													
LukAB Immunization													
Antigen	CC8	CC30	CC45	CC1	CC5	CC398	CC75	ST188	ST109	ST10	ST22A		
CC8	8.86	15.09	11.91	2.07	3.14	2.35	3.34	3.11	2.57	2.45	33.02		
CC45	79.65	1.50	1.25	81.08	80.10	50.46	67.85	81.92	75.50	38.83	2.60		
CC8/CC45	4.11	1.46	0.00	0.38	0.00	0.96	1.73	0.00	0.00	0.00	0.76		
CC45/CC8	8.80	1.84	1.41	0.13	0.22	0.54	0.54	2.94	0.95	0.99	1.73		
CC8 E323A/CC45	2.90	1.37	0.66	1.65	0.23	0.00	4.37	0.06	4.26	0.86	3.91		
CC45 E323A/CC8	7.92	1.38	0.00	0.00	0.56	0.00	9.29	2.91	2.90	2.23	2.86		
CC8 E323A/CC45 B5	37.18	51.31	53.88	40.06	39.43	74.44	49.27	23.54	47.20	66.59	35.82		
CC45 E323A/CC8 B5	19.57	10.70	47.46	54.36	44.74	64.77	71.72	82.49	75.41	49.76	13.32		
RARPR 13	23.49	6.31	3.94	42.93	29.57	1.87	4.58	32.08	16.15	8.42	7.25		
RARPR 15	9.22	4.02	4.35	4.02	6.08	4.60	7.66	7.07	6.82	7.15	8.81		
RARPR 17	56.11	8.90	4.35	58.37	64.23	4.36	5.00	52.92	40.46	7.22	8.88		
RARPR 19	42.11	10.05	10.23	40.04	49.00	9.71	9.49	44.67	17.04	9.39	9.81		
SM1W97	9.59	87.92	89.68	2.63	2.90	22.13	16.21	4.85	6.57	5.60	87.98		
Mock	18.81	81.25	86.35	87.04	83.89	87.03	93.31	90.54	90.08	91.77	91.38		

CC45 B5 and CC8 B5 are LukB deletion variants
 *CC8 LukA W97 monomer expressed in HEK293 cells

Neutralization Assay: % Dead Human PMNs (Intoxication with LD ₅₀ of LukAB variants + 2% serum from immunized mice); n = 4 donors													
LukAB Immunization													
Antigen	CC8	CC30	CC45	CC1	CC5	CC398	CC75	ST188	ST109	ST10	ST22A		
CC8 delta10C	25.46	16.21	17.06	30.25	18.63	27.37	63.25	17.97	22.44	21.63	18.86		
RARPR 30	28.73	18.82	19.72	35.26	19.17	18.00	16.82	27.99	29.64	16.48	19.95		
RARPR 31	20.61	75.41	79.18	13.06	11.23	42.34	47.32	14.23	23.67	11.37	82.02		
RARPR 32	15.76	30.25	30.64	4.69	6.10	6.86	5.11	9.97	5.86	6.17	43.43		
RARPR 33	17.33	8.43	10.14	8.95	12.32	11.81	14.58	12.55	11.55	9.08	10.43		
RARPR 34	15.77	11.63	12.92	10.47	9.79	5.96	7.19	10.11	5.42	9.00	19.28		
CC8 W97	13.75	78.67	79.90	3.78	4.49	35.56	39.36	9.09	10.68	13.01	95.04		
CC45 W97	86.48	26.11	23.68	97.12	88.52	81.79	88.11	85.80	86.48	84.08	40.99		
RARPR 31 + CC45 SW97	20.49	27.41	35.17	49.31	18.69	53.84	69.31	22.93	45.50	36.26	44.91		
Mock	89.05	59.88	69.56	57.67	87.61	58.38	89.26	87.11	50.31	87.72	88.05		

FIG. 6A

Neutralization Assay: % Dead Human PMNs (Intoxication with LD ₅₀ of LukAB variants + 1% serum from immunized mice); n = 4 donors													
LukAB Variant													
Antigen	CC8	CC30	CC45	CC1	CC5	CC398	CC75	ST188	ST109	ST10	ST22A		
CC8	6.31	79.12	78.08	4.08	2.72	2.12	23.47	2.31	1.45	2.06	89.13		
CC45	85.35	8.41	5.43	88.18	86.98	82.07	86.32	82.99	82.13	81.55	1.64		
CC8/CC45	2.95	2.99	2.55	0.00	0.00	0.00	13.65	0.93	0.00	0.00	49.64		
CC45/CC8	12.02	2.54	0.00	68.77	19.76	38.40	30.76	77.31	38.67	48.34	1.02		
CC8 E323A/CC45	4.92	5.40	5.15	3.89	1.29	4.67	44.20	0.03	0.50	1.49	16.39		
CC45 E323A/CC8	14.19	0.00	0.00	65.49	33.06	67.53	82.11	74.44	29.92	59.20	0.00		
CC8 E323A/CC45 B5	48.80	85.26	72.72	88.32	62.49	85.71	84.69	61.54	76.01	81.73	83.04		
CC45 E323A/CC8 B5	56.09	58.06	63.51	86.04	73.53	81.75	87.05	86.17	86.14	80.33	72.51		
RARPR 13	77.93	4.99	3.09	84.41	80.70	12.54	15.60	80.10	71.92	15.54	0.37		
RARPR 15	27.35	2.99	0.67	43.23	50.38	0.93	6.47	33.91	17.17	1.51	1.63		
RARPR 17	87.67	5.78	1.96	86.75	85.31	55.72	46.87	86.40	87.35	46.46	3.17		
RARPR 19	87.88	6.79	3.53	90.10	89.81	36.00	51.36	87.24	82.62	26.12	5.66		
SM1W97	3.48	93.27	89.90	35.96	0.00	73.66	63.47	0.70	6.14	3.20	94.47		
Mock	90.53	94.26	93.47	93.61	93.03	93.21	93.54	91.75	95.00	92.35	98.72		

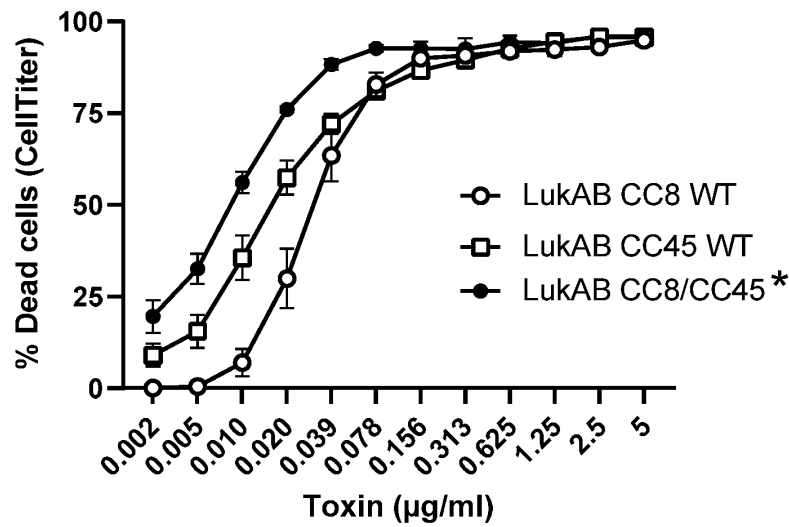
Neutralization Assay: % Dead Human PMNs (Intoxication with LD ₅₀ of LukAB variants + 1% serum from immunized mice); n = 4 donors													
LukAB Variant													
Antigen	CC8	CC30	CC45	CC1	CC5	CC398	CC75	ST188	ST109	ST10	ST22A		
CC8 delta10C	21.27	48.98	34.07	71.43	15.91	59.63	79.96	41.56	68.51	58.94	41.67		
RARPR 30	28.95	16.90	21.26	77.12	35.04	93.77	26.01	61.04	71.73	32.93	14.38		
RARPR 31	21.83	86.11	87.37	64.22	28.40	73.39	75.84	27.79	67.07	33.51	89.58		
RARPR 32	9.35	85.16	67.49	4.22	4.32	2.79	12.24	4.71	2.24	2.80	76.23		
RARPR 33	17.16	15.09	17.73	14.45	8.25	19.25	15.80	5.89	11.21	6.59	34.68		
RARPR 34	22.52	42.51	44.83	6.80	5.30	6.77	15.77	5.37	4.55	6.97	51.43		
CC8 W97	11.18	86.60	87.22	32.08	5.73	62.26	64.70	12.38	36.30	27.36	86.48		
CC45 W97	86.00	49.98	54.36	86.55	86.81	87.97	87.96	86.76	86.29	86.15	63.58		
RARPR 31 + CC45 SW97	37.40	57.23	64.16	55.41	53.18	74.04	81.57	55.68	79.97	67.12	71.72		
Mock	95.48	91.80	91.50	95.81	94.80	91.87	92.48	94.48	94.85	94.51	94.79		

FIG. 6B

Neutralization Assay: % Dead Human PMNs (Intoxication with LD ₅₀ of LukAB variants + 0.5% serum from immunized mice); n = 4 donors													
LukAB Immunization													
Antigen	CC8	CC30	CC45	CC1	CC5	CC398	CC75	ST188	ST109	ST10	ST22A	LukAB Variant	
CC8	4.72	91.30	89.33	14.98	4.66	39.86	84.43	3.02	3.41	1.99	98.83		
CC45	89.11	13.32	9.54	91.34	91.47	87.94	92.77	85.99	87.64	87.15	26.57		
CC8/CC45	4.70	65.59	74.67	62.14	10.51	77.09	84.91	0.29	18.82	37.31	84.31		
CC45/CC8	71.34	72.15	37.01	89.70	80.64	86.07	85.81	88.62	89.05	88.11	70.59		
CC8 E323A/CC45	15.35	49.18	68.28	88.87	26.59	72.20	86.68	17.24	64.65	24.31	83.01		
CC45 E323A/CC8	78.55	51.02	12.91	88.15	85.35	86.12	90.10	86.75	86.46	88.42	37.10		
CC8 E323A/CC45 B5	84.73	92.88	89.97	90.77	89.44	90.97	93.02	86.62	89.11	89.31	91.77		
CC45 E323A/CC8 B5	89.10	88.13	90.30	89.04	90.22	88.34	91.53	90.08	88.93	91.35	91.77		
RARPR 13	92.34	1.45	1.63	91.95	91.88	55.81	62.35	91.87	88.36	80.89	6.74		
RARPR 15	90.27	3.35	0.00	92.63	88.06	58.82	82.81	91.54	89.57	57.13	1.32		
RARPR 17	92.25	1.35	0.48	92.38	91.90	91.11	89.94	92.48	92.80	87.28	1.76		
RARPR 19	92.83	3.62	2.11	90.72	89.79	84.15	87.78	91.37	93.34	85.11	4.16		
SM1W97	18.13	89.96	92.05	90.59	38.57	87.10	89.10	29.16	81.63	61.72	93.22		
Mock	93.93	91.94	90.60	92.04	94.88	93.06	91.54	93.06	91.73	93.38	95.19		

Neutralization Assay: % Dead Human PMNs (Intoxication with LD ₅₀ of LukAB variants + 0.5% serum from immunized mice); n = 4 donors													
LukAB Immunization													
Antigen	CC8	CC30	CC45	CC1	CC5	CC398	CC75	ST188	ST109	ST10	ST22A	LukAB Variant	
CC8 delta10C	19.20	65.77	66.31	86.52	42.23	76.84	85.46	79.13	84.89	76.20	73.28		
RARPR 30	46.84	15.56	14.27	88.08	66.72	68.45	52.63	84.26	88.95	65.90	16.79		
RARPR 31	34.37	87.32	86.47	86.10	59.72	85.14	86.23	67.96	87.03	70.30	87.91		
RARPR 32	9.45	83.44	82.39	11.75	2.85	8.76	50.03	2.16	7.19	4.66	87.02		
RARPR 33	10.98	54.83	51.44	47.75	4.47	51.89	51.85	7.31	43.18	24.47	76.12		
RARPR 34	13.45	72.28	75.09	10.15	5.99	21.47	54.74	4.39	9.09	5.88	84.02		
CC8 W97	72.37	80.37	87.68	18.45	60.44	81.25	52.60	58.74	54.93	78.52	84.32		
CC45 W97	87.00	72.03	74.38	88.00	87.58	90.84	86.58	85.34	86.90	90.92	83.63		
RARPR 31 + CC45 SW97	65.05	79.43	81.49	90.96	84.01	86.00	87.48	83.63	89.68	81.75	85.32		
Mock	93.59	88.06	90.18	94.58	94.00	90.17	93.48	94.27	94.28	94.16	93.91		

FIG. 6C



*LukAB CC8/CC45 tested in 4 donors only

FIG. 7A

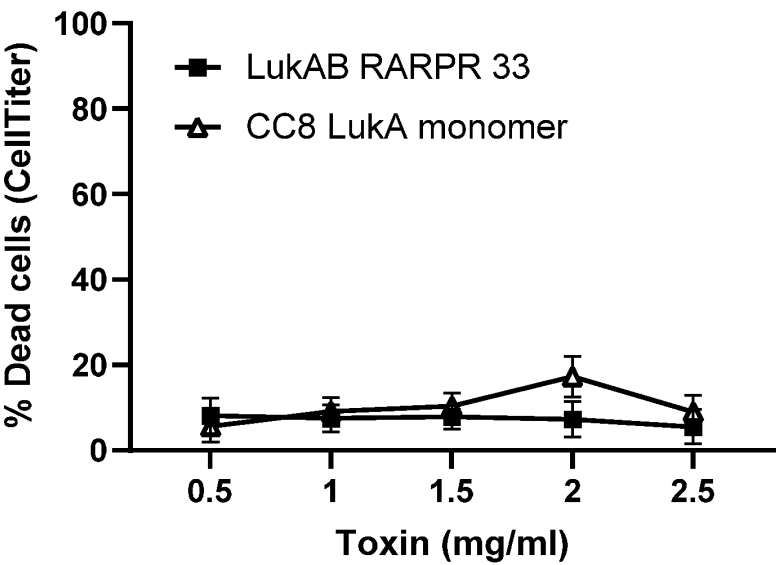
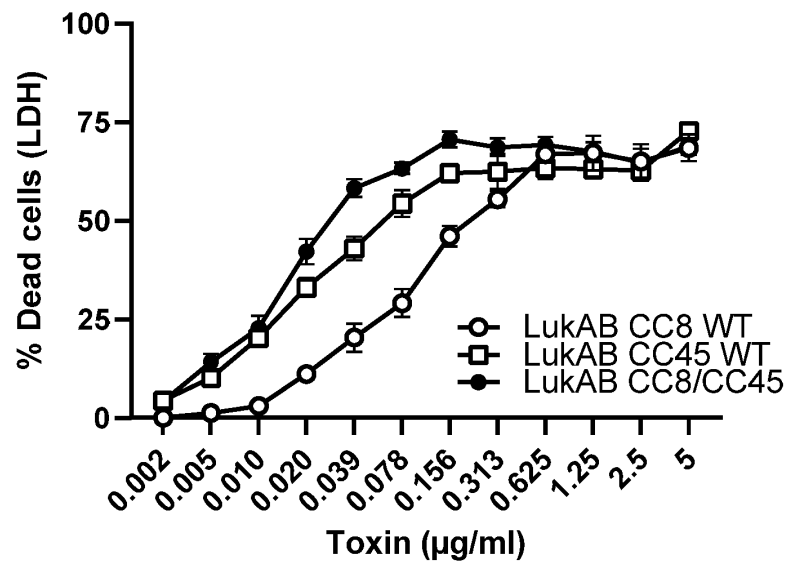
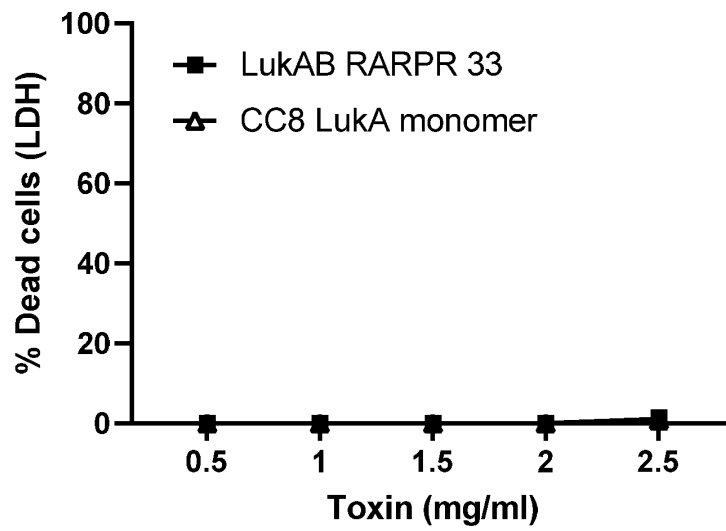


FIG. 7B

**FIG. 7C****FIG. 7D**

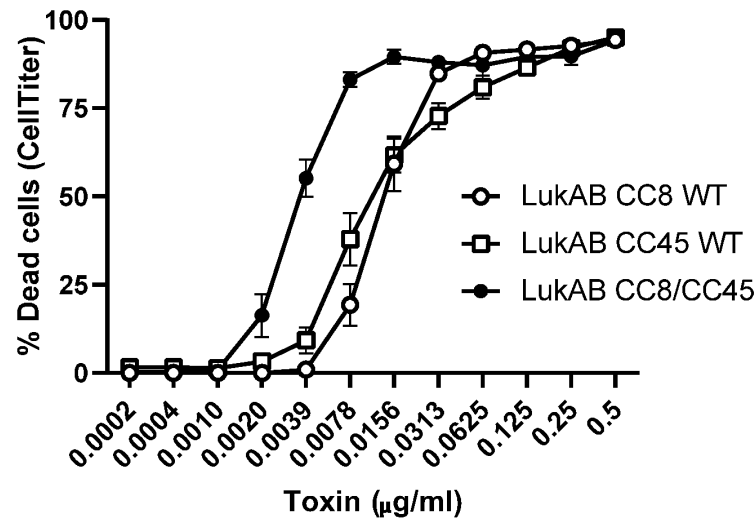


FIG. 8A

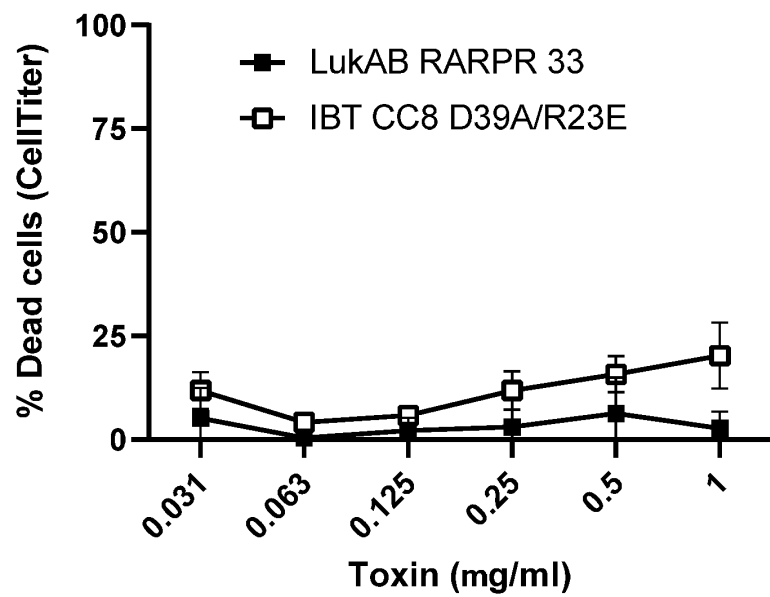


FIG. 8B

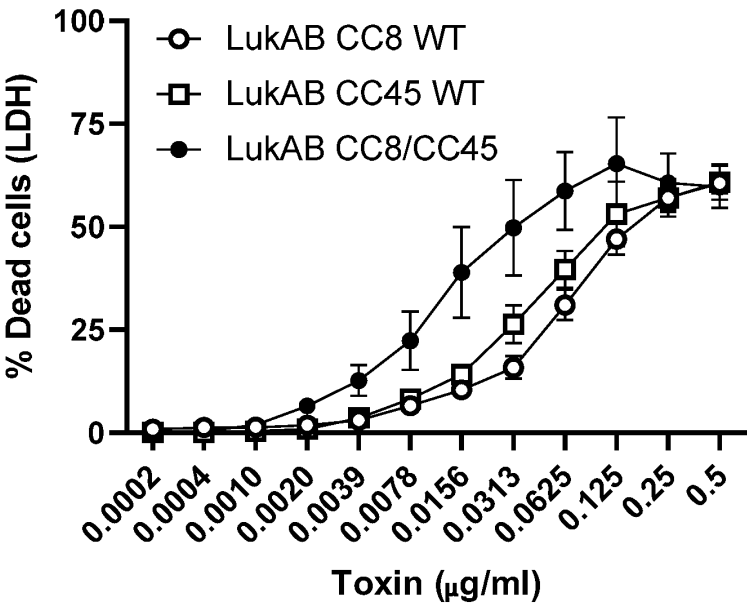


FIG. 8C

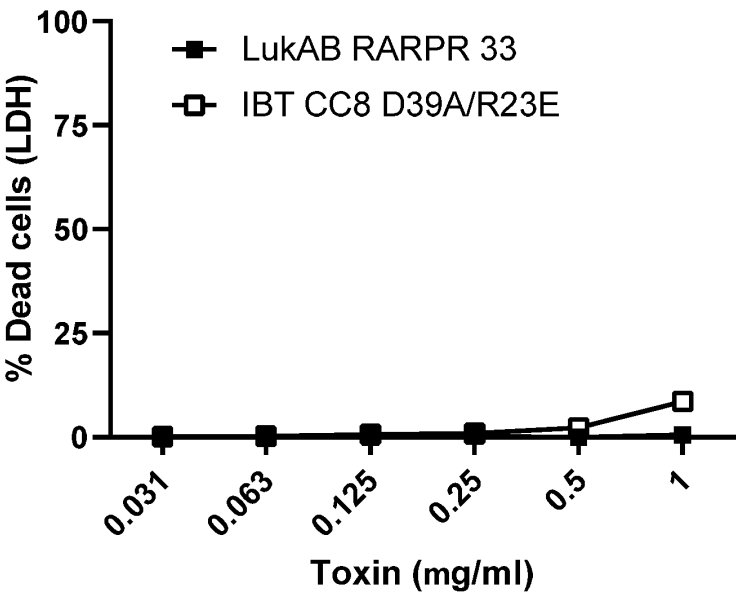


FIG. 8D

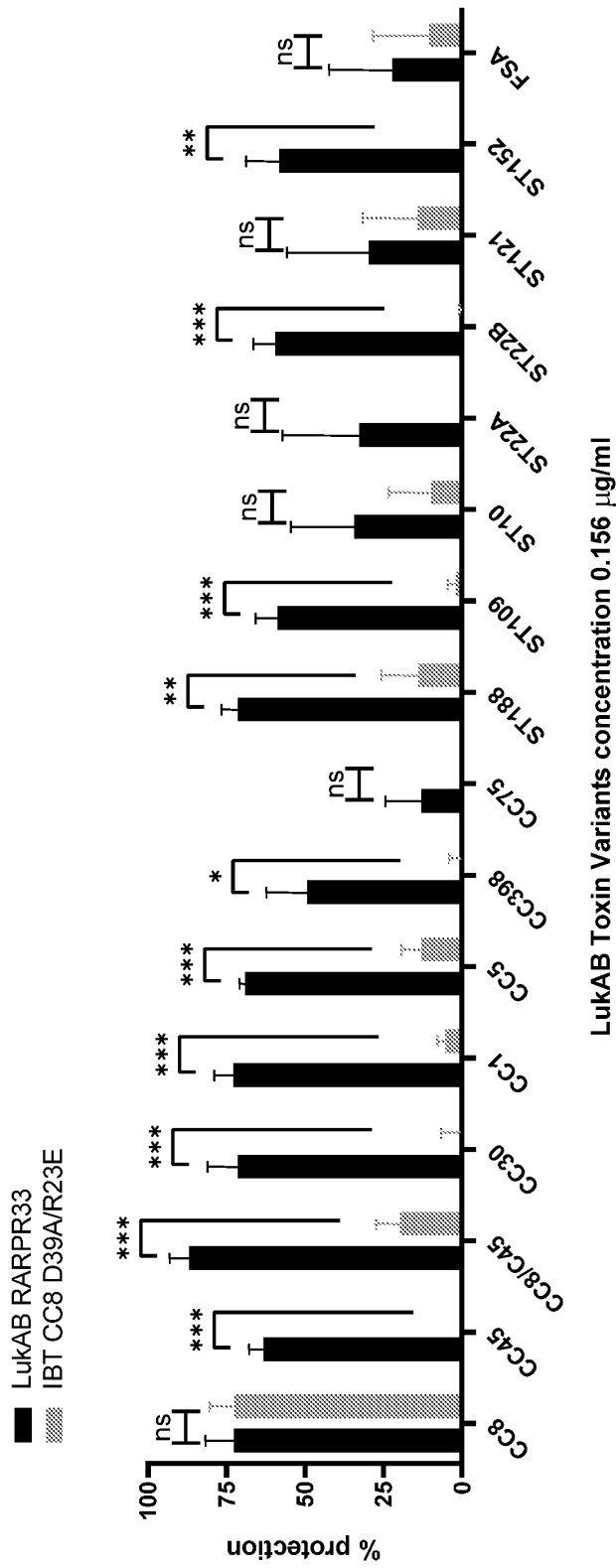


FIG. 9

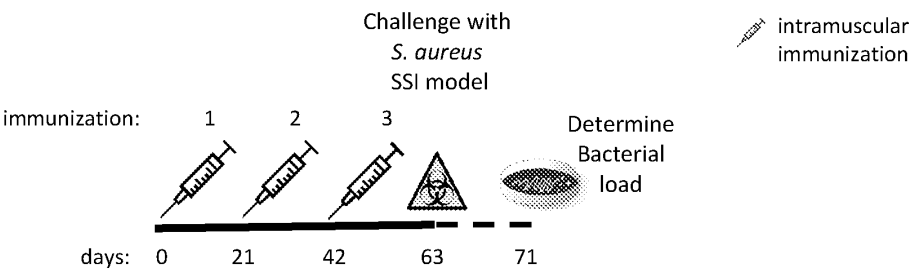


FIG. 10

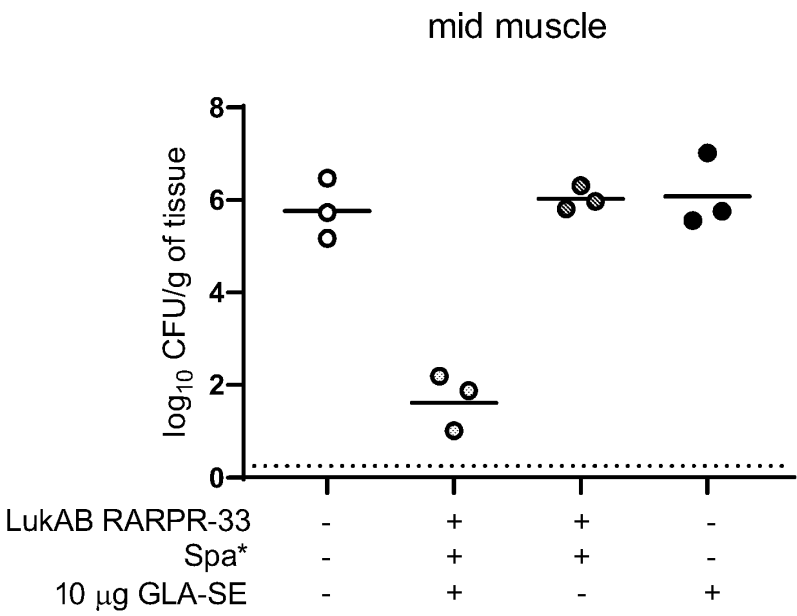


FIG. 11A

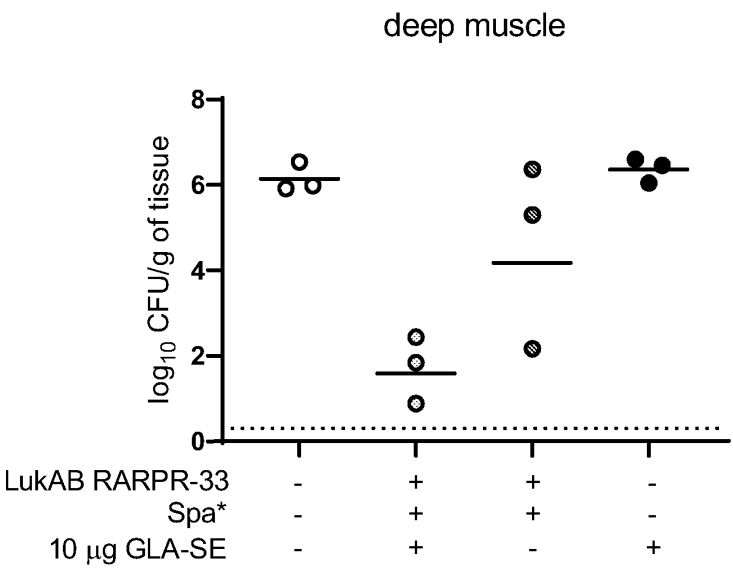
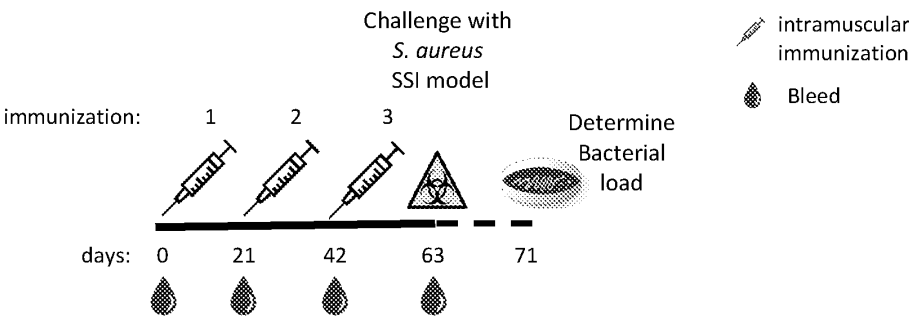
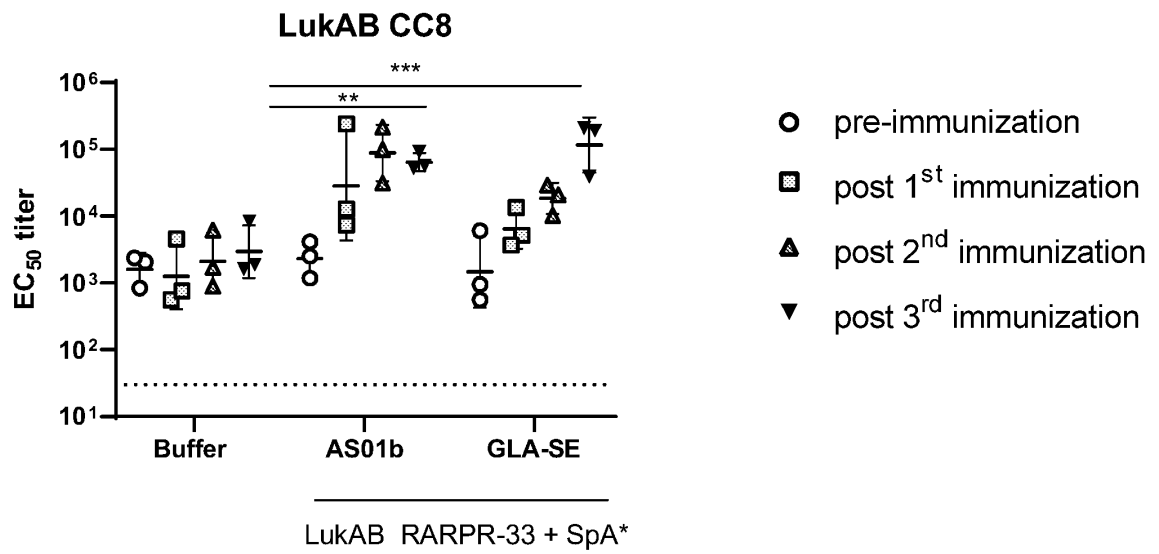
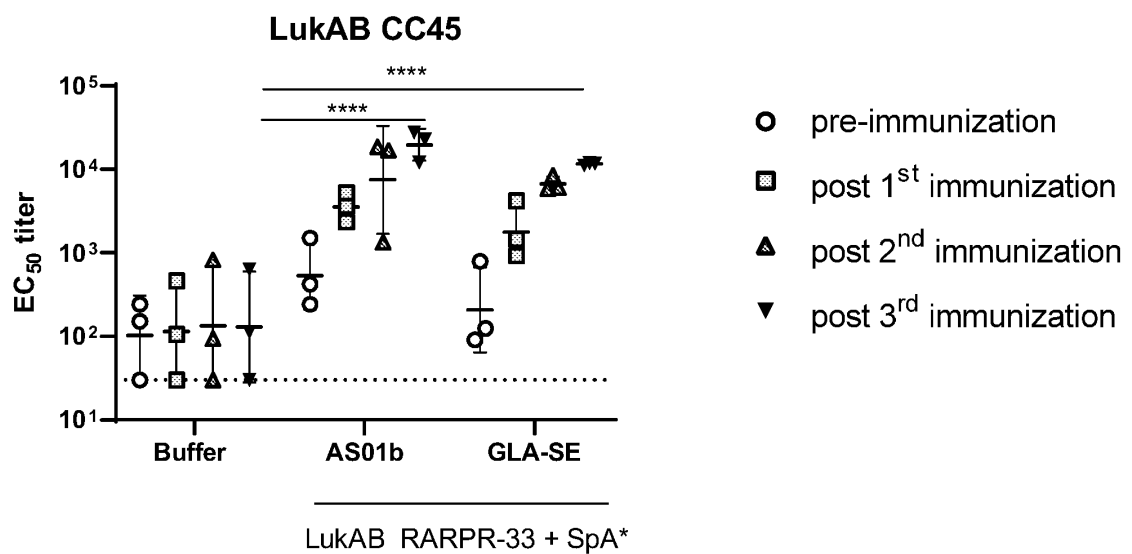


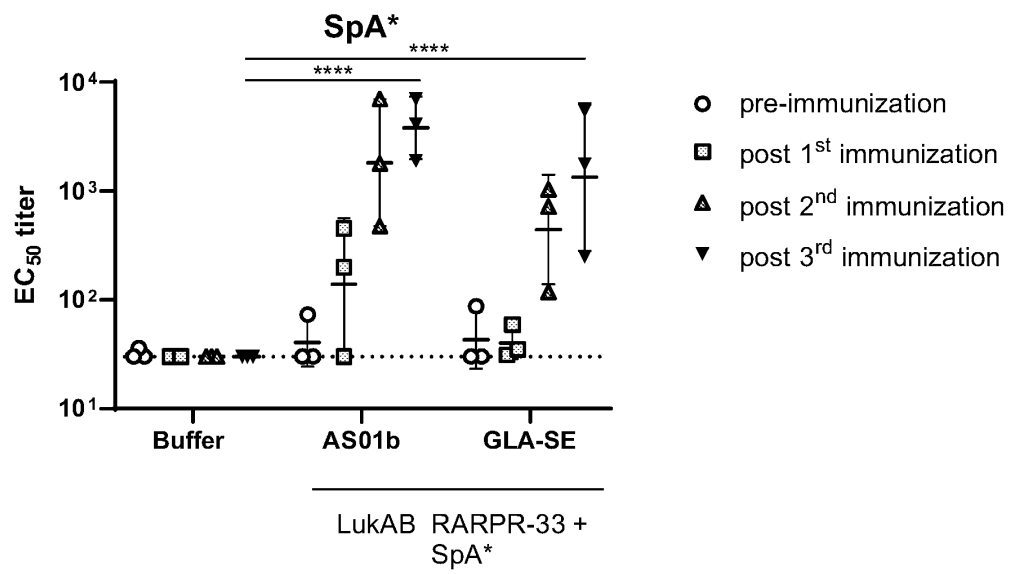
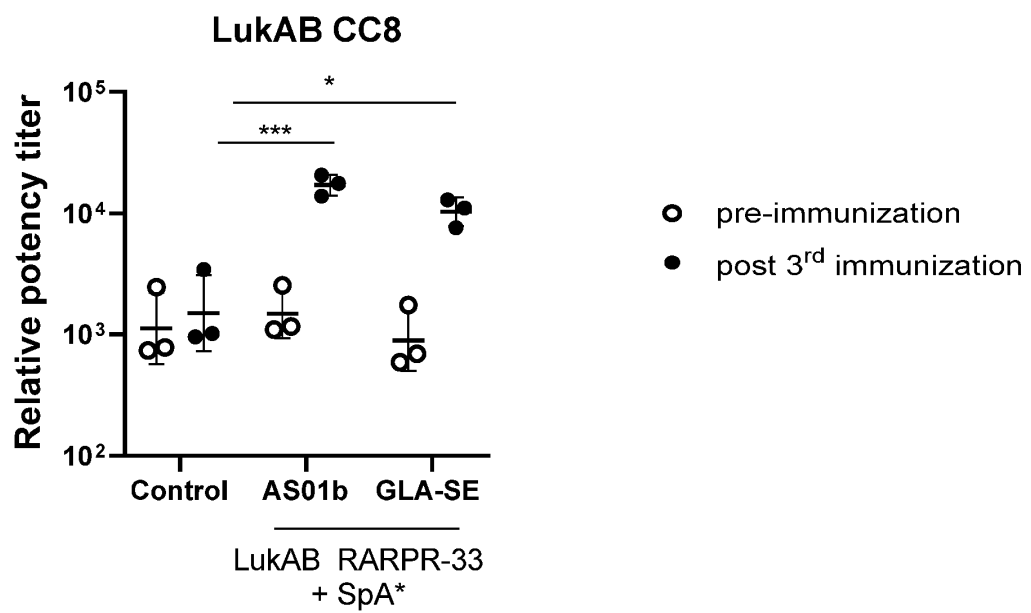
FIG. 11B



Group	Antigen 1	Dose (µg)	Antigen 2	Dose (µg)	Adjuvant	Dose (µg)	Volume (µl)
1. N=3	control	-	-	-	-	-	500
2. N=3	RARPR-33	100	SpA*	100	AS01b (MPL, QS-21)	25/25	500
3. N=3	RARPR-33	100	SpA*	100	GLA-SE (2% SE)	10	500

FIG. 12

**FIG. 13A****FIG. 13B**

**FIG. 13C****FIG. 14A**

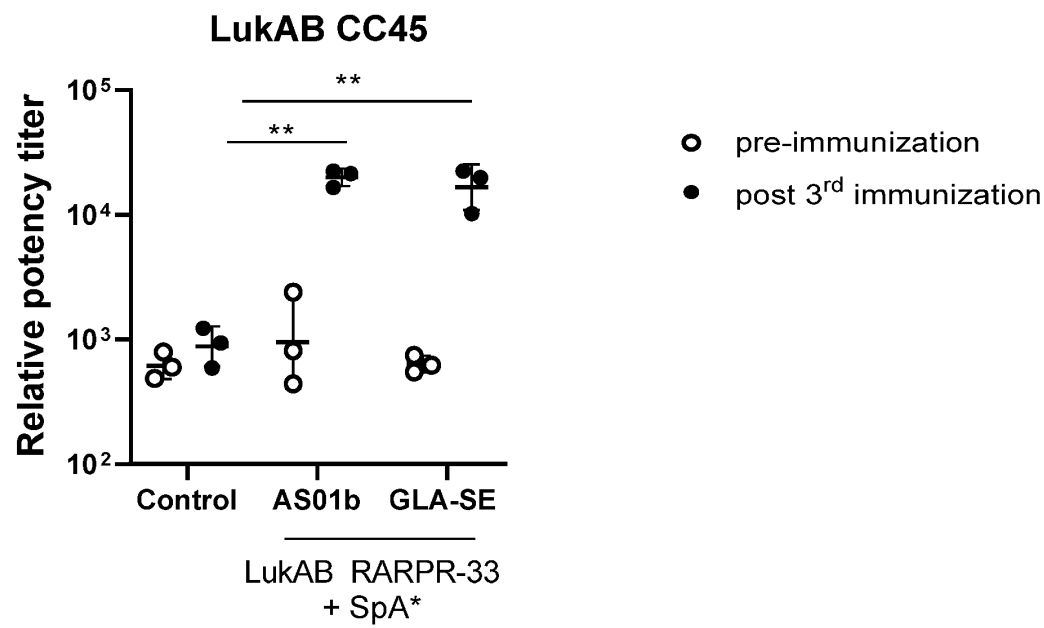


FIG. 14B

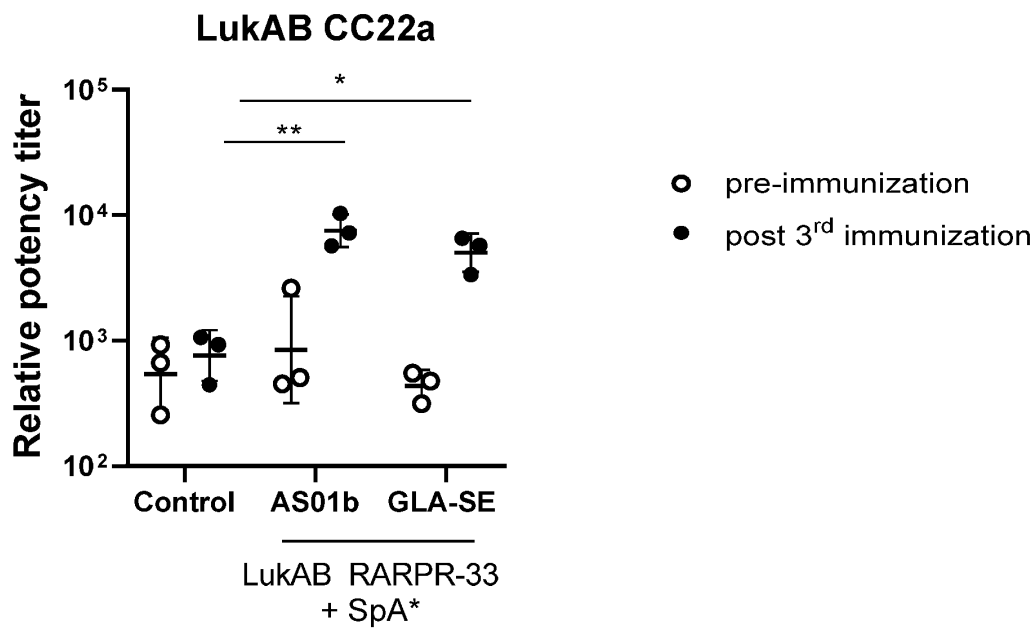
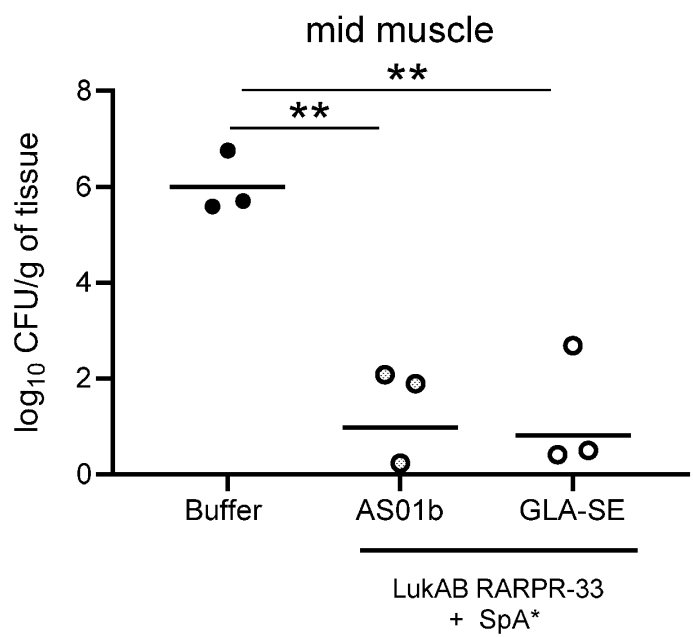
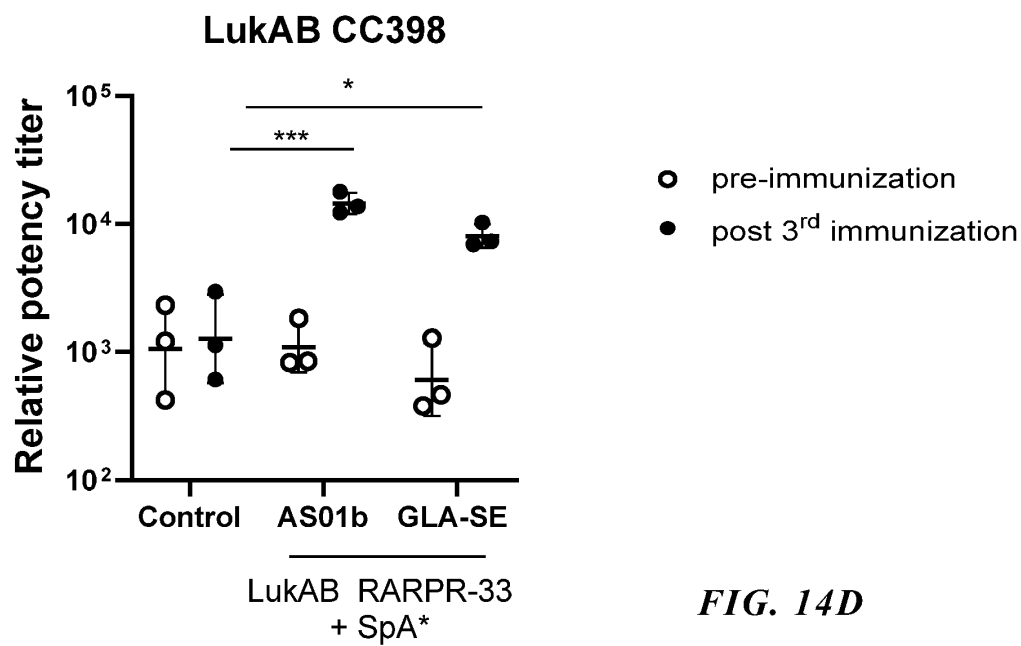


FIG. 14C



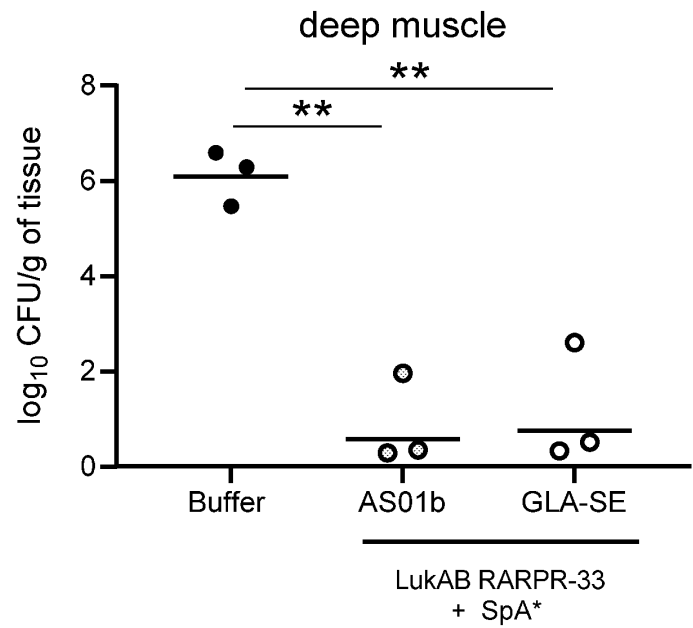


FIG. 15B

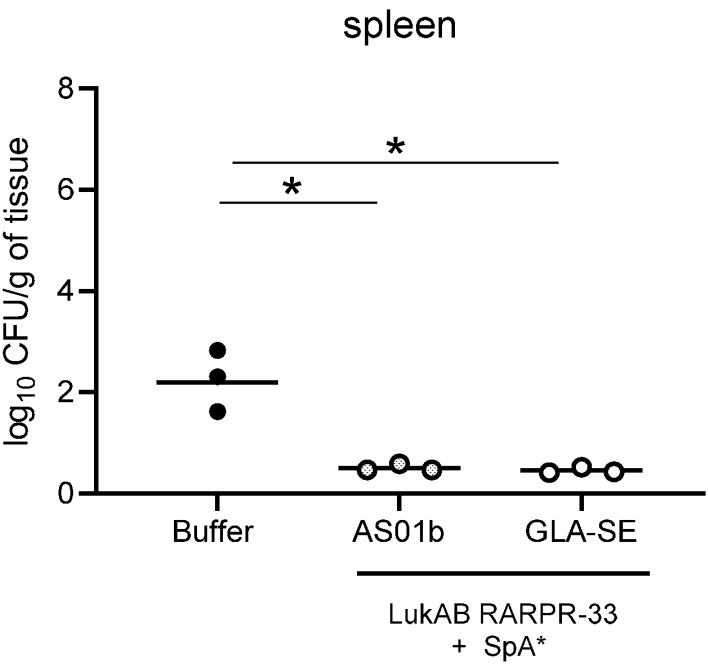
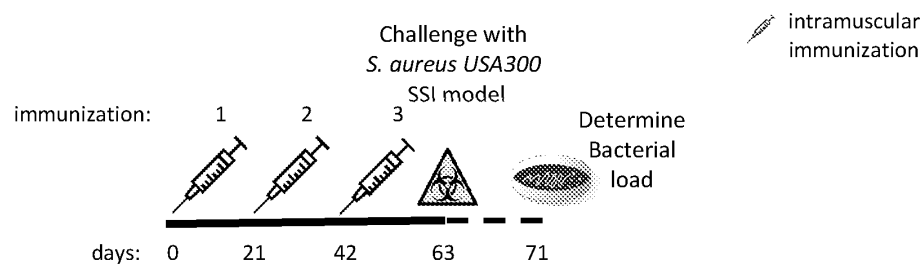
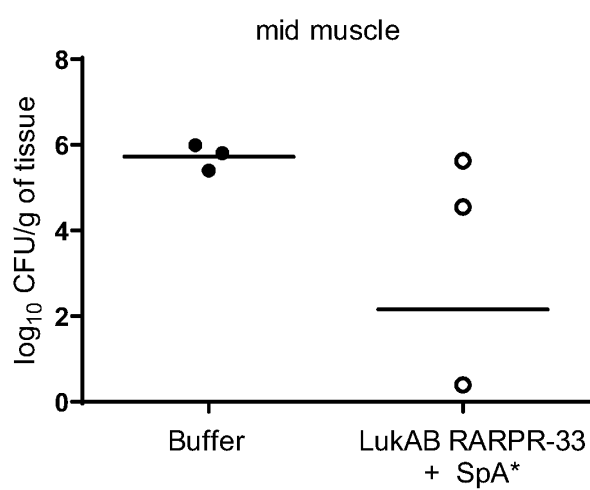


FIG. 15C

**FIG. 16A**

Group	Antigen 1	Dose (μg)	Antigen 2	Dose (μg)
1. N=3	Buffer	-	-	-
2. N=3	LukAB RARPR-33	100	SpA*	100

FIG. 16B**FIG. 16C**

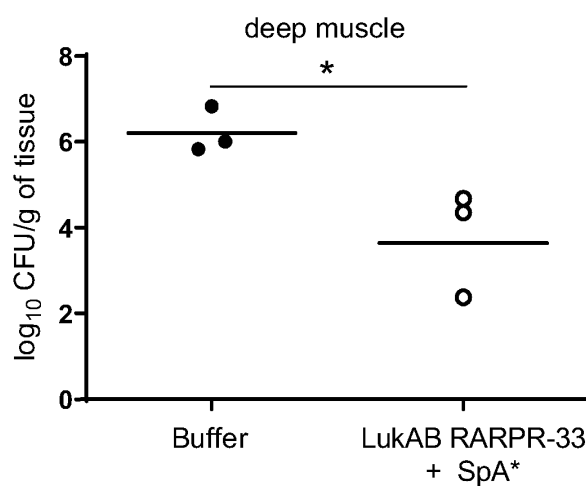


FIG. 16D

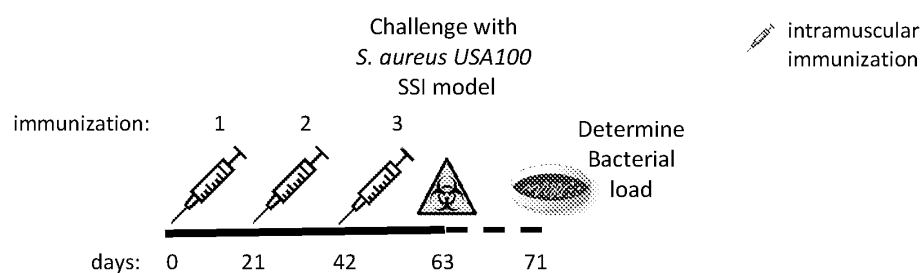


FIG. 17A

Group	Antigen 1	Dose (μ g)	Antigen 2	Dose (μ g)	Adjuvant	Dose (μ g)
1. N=3	Buffer	-	-	-	GLA-SE	10 μ g GLA 2% SE
2. N=3	RARPR-33	100	Spa*	100	GLA-SE	10 μ g GLA 2% SE

FIG. 17B

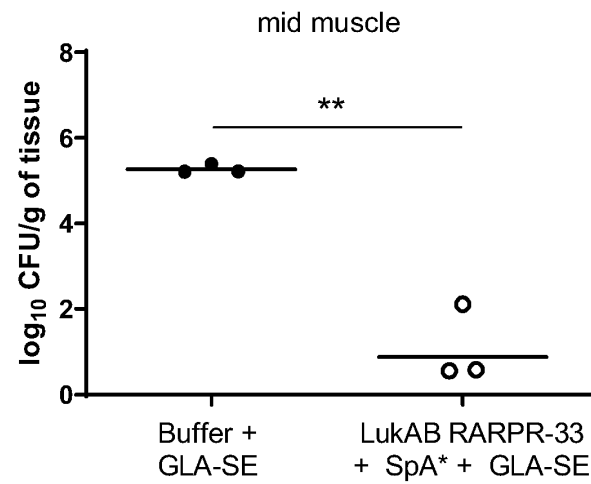


FIG. 17C

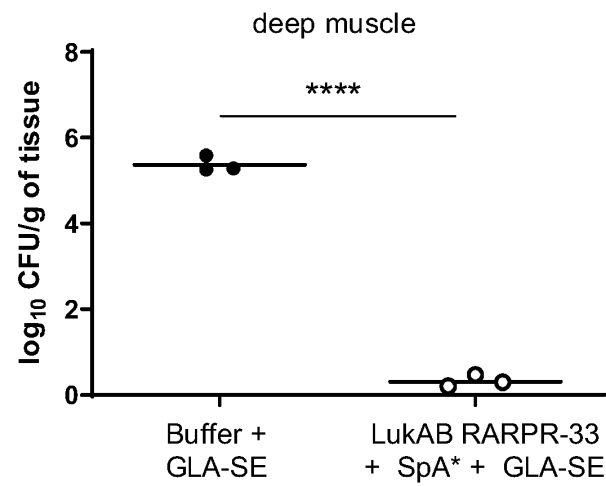
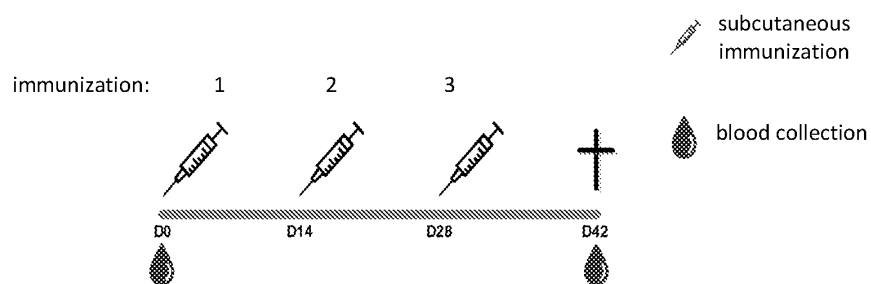
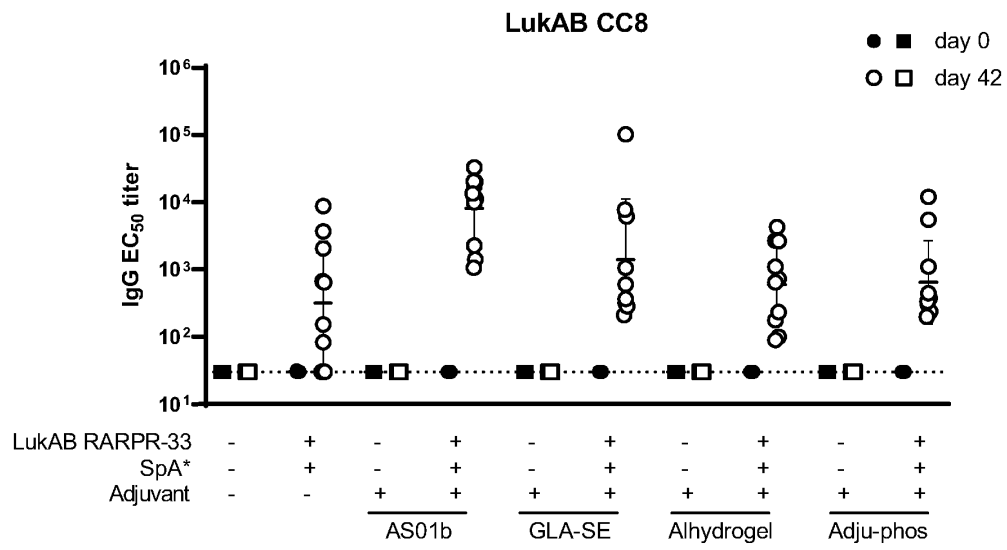
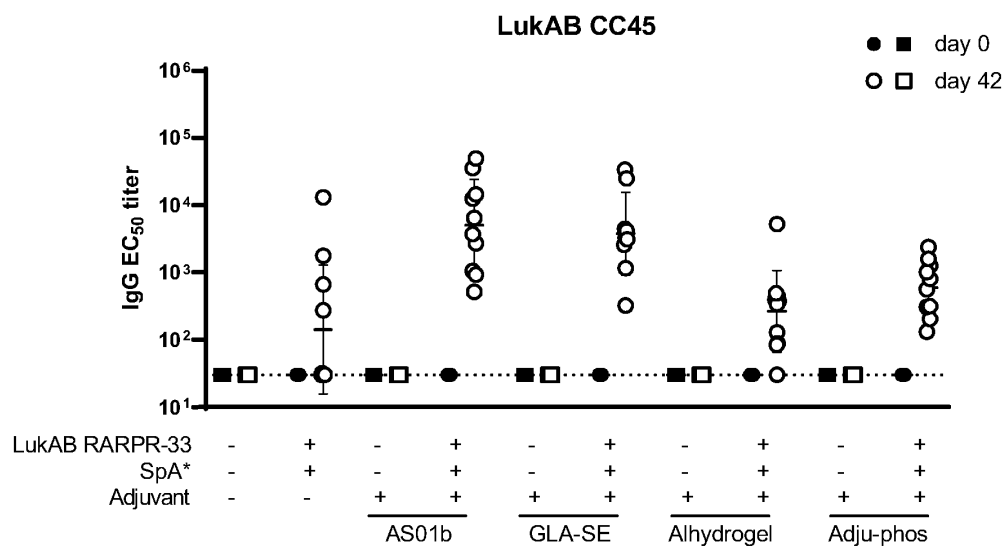


FIG. 17D

**FIG. 18A**

Group	Antigen 1	Dose (μg)	Antigen 2	Dose (μg)	Adjuvant	Dose or volume	# Animals
1.	LukAB His-RARPR-33	5	SpA*	5	AS01b	5 μg MPL, 5 μg QS-21	10
2.	LukAB His-RARPR-33	5	SpA*	5	GLA-SE	1 μg GLA (2%SE)	9
3.	LukAB His-RARPR-33	5	SpA*	5	Alhydrogel	50 μl	10
4.	LukAB His-RARPR-33	5	SpA*	5	Adju-Phos	50 μl	10
5.	LukAB His-RARPR-33	5	SpA*	5	-	-	10
6.	Buffer	-	-	-	AS01b	5 μg MPL, 5 μg QS-21	5
7.	Buffer	-	-	-	GLA-SE	1 μg GLA (2%SE)	5
8.	Buffer	-	-	-	Alhydrogel	50 μl	5
9.	Buffer	-	-	-	Adju-Phos	50 μl	5
10.	Buffer	-	-	-	-	-	5

FIG. 18B

**FIG. 18C****FIG. 18D**

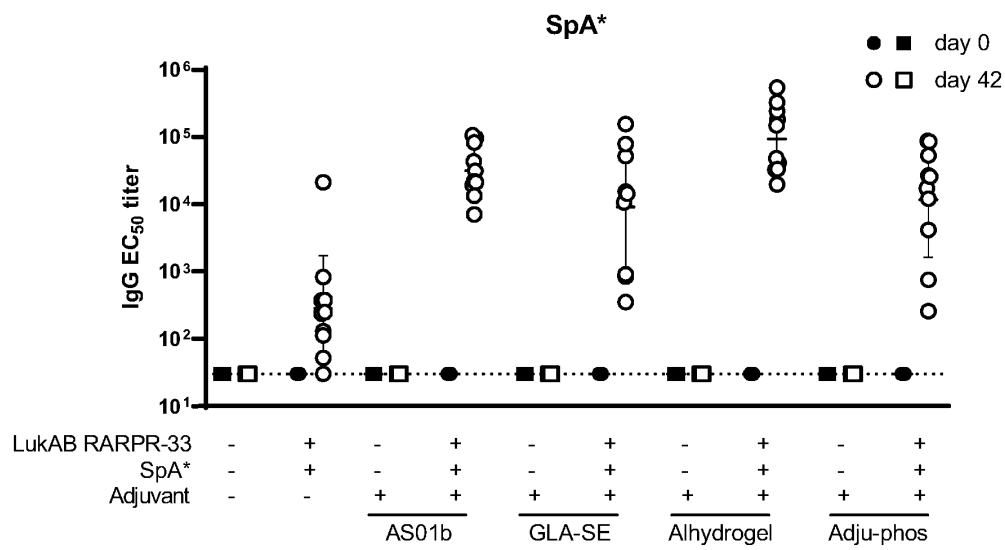


FIG. 18E

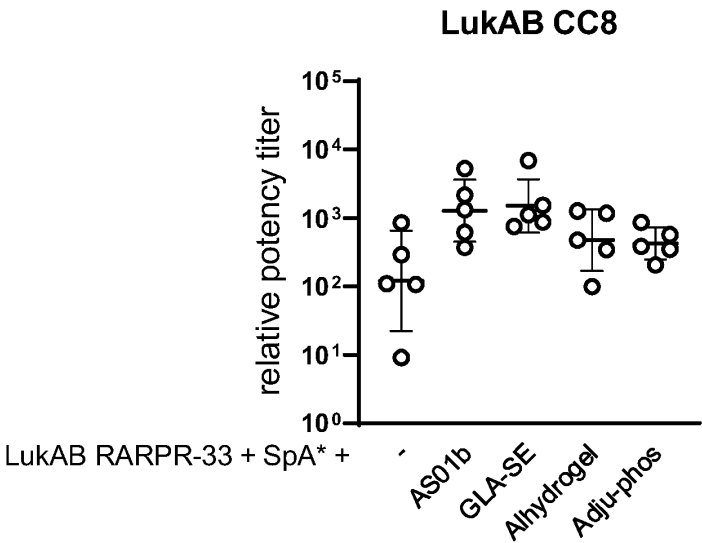


FIG. 19A

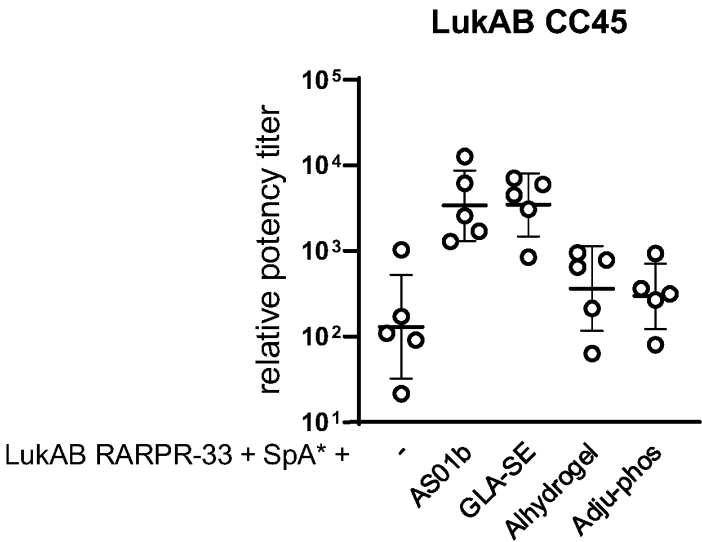


FIG. 19B