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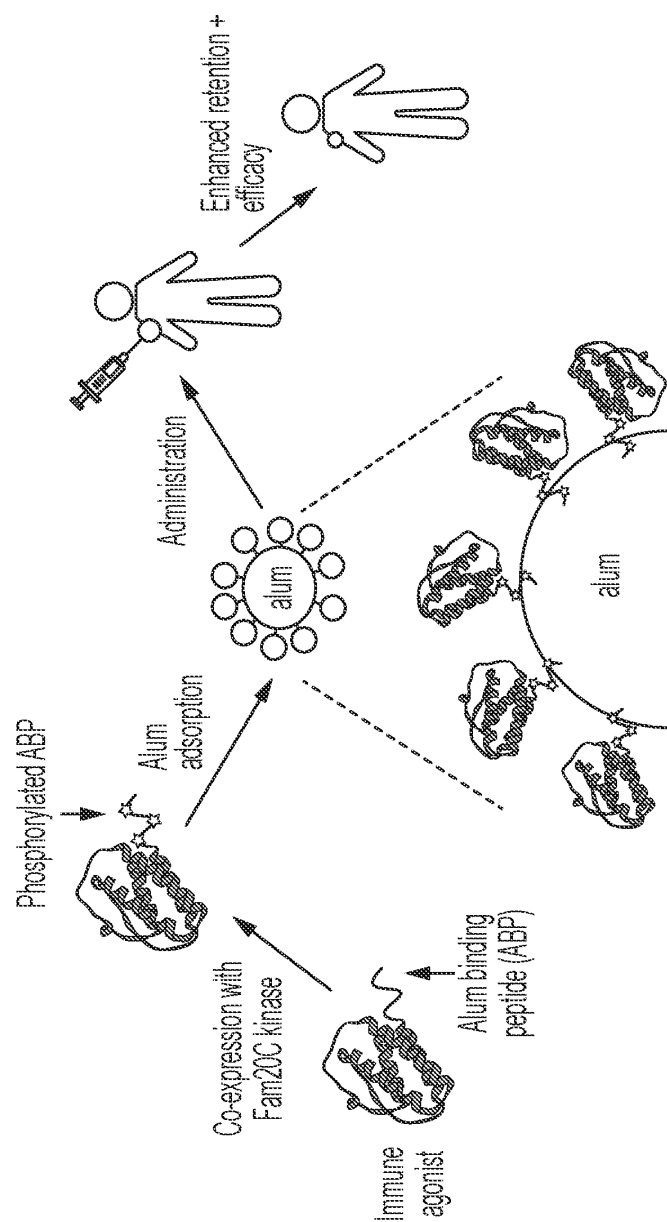


FIG. 1

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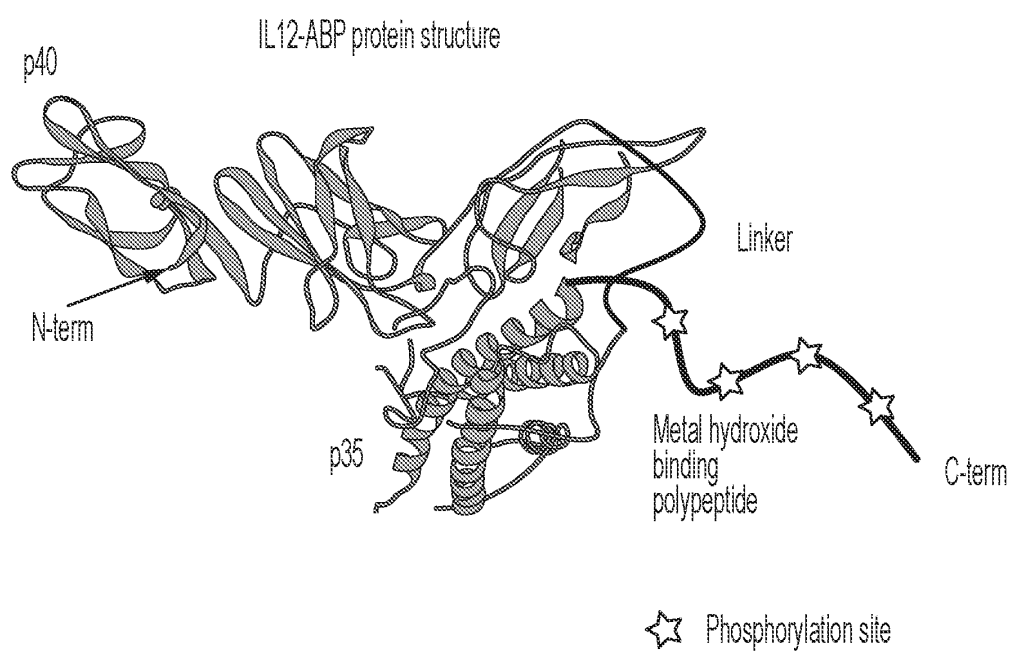


FIG. 2

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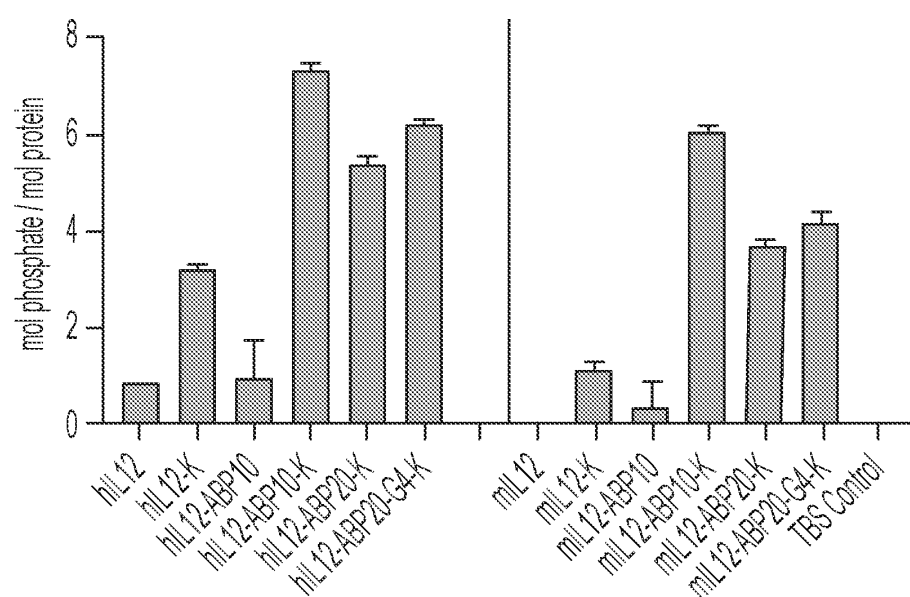


FIG. 3A

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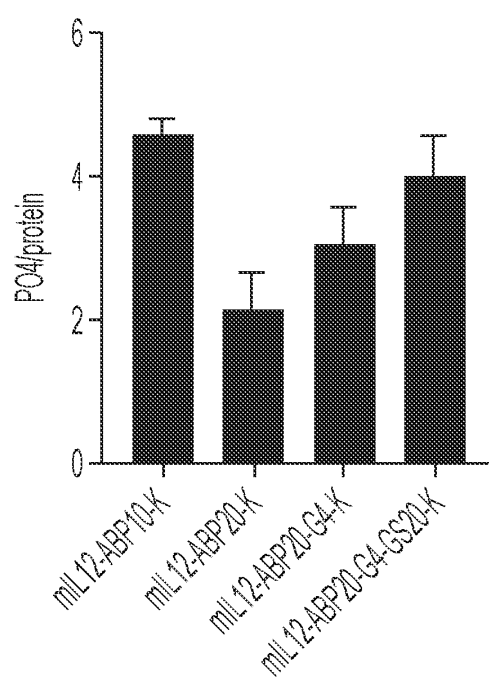


FIG. 3B

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Name	Sequence	Tag
ABP10	GGGGSFQSEEQGGGSGGSEEGGMESEESNGGSGGSEEGGGGS (SEQ ID NO: 90)	HHHHHH (SEQ ID NO: 98)
ABP20	GGGSGGGGSEEESEEESEEGGGGS (SEQ ID NO: 119)	HHHHHH (SEQ ID NO: 98)
ABP20-G4	GGGSGGGGSEEGGGGSEEGGGSEEGGGSEEGGGGS (SEQ ID NO: 82)	HHHHHH (SEQ ID NO: 98)
ABP20-G4-GS20	GGGSGGGGSGGGSGGGSEEGGGSEEGGGSEEGGGSEEGGGGS (SEQ ID NO: 120)	HHHHHH (SEQ ID NO: 98)

FIG. 3C

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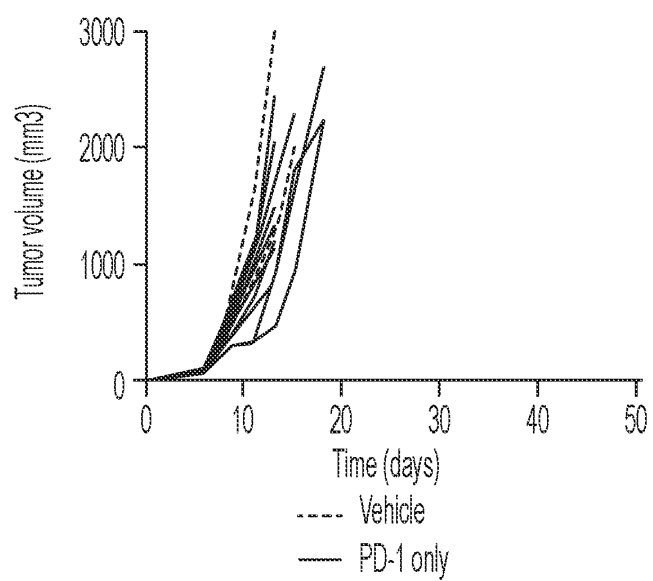


FIG. 4A

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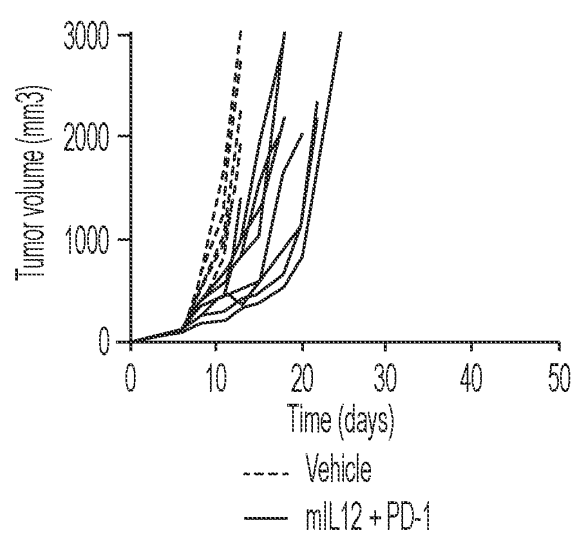


FIG. 4B

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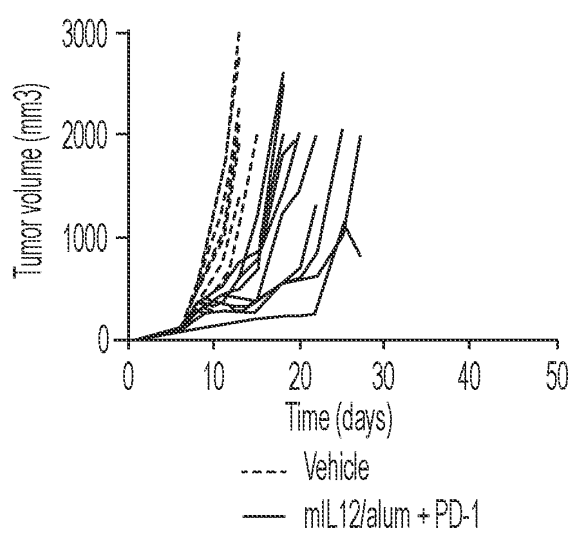


FIG. 4C

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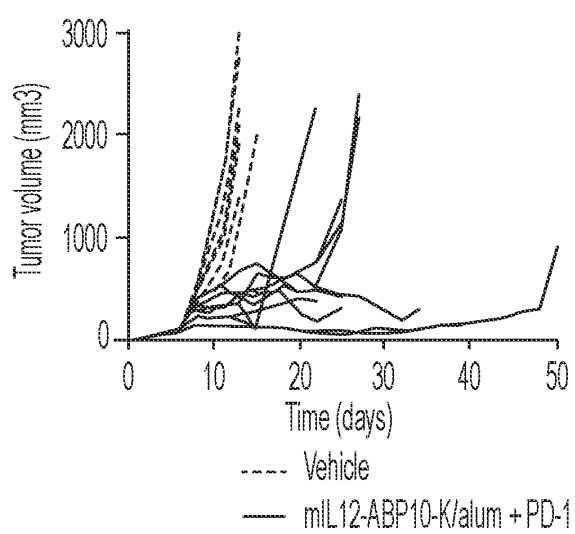


FIG. 4D

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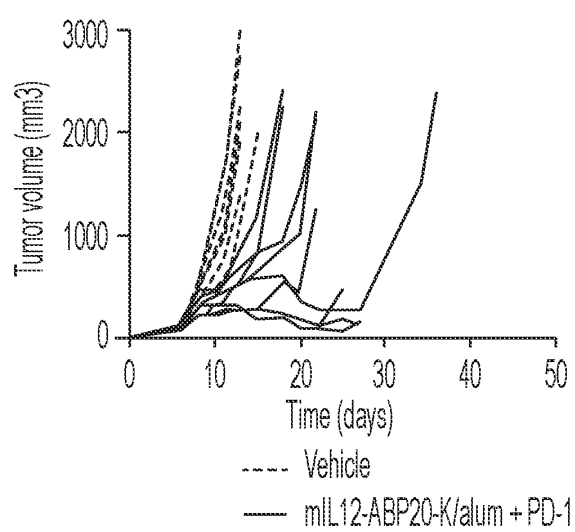


FIG. 4E

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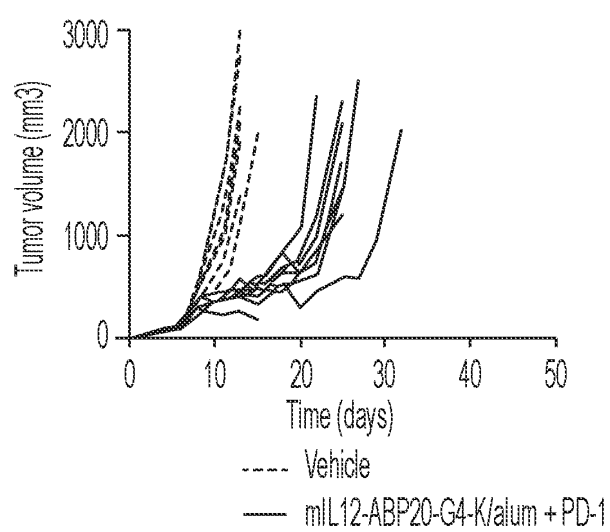


FIG. 4F

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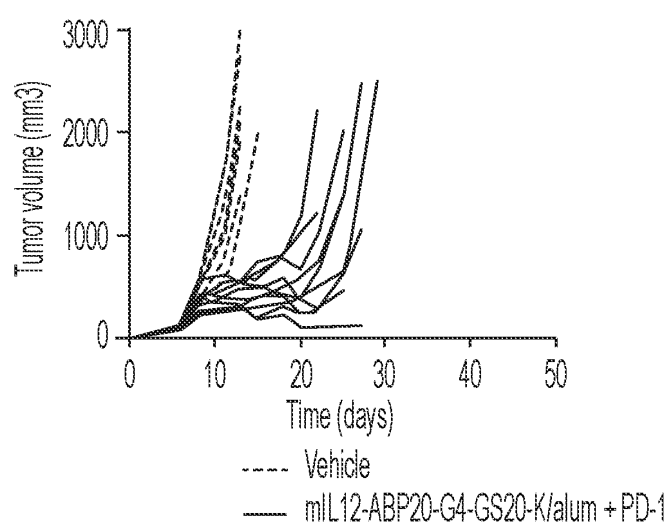


FIG. 4G

Name	Sequence	Tag
ABP20-G4	GGGSGGGSEEGGGSEEGGGSEEGGGSEEGGGGS (SEQ ID NO: 82)	HHHHHH (SEQ ID NO: 98)
ABP20-G4-6x	GGGSGGGSEEGGGSEEGGGSEEGGGSEEGGGSEEGGGGS (SEQ ID NO: 83)	HHHHHH (SEQ ID NO: 98)
ABP20-G4-8x	GGGSGGGSEEGGGSEEGGGSEEGGGSEEGGGSEEGGGSEEGGGGS (SEQ ID NO: 84)	HHHHHH (SEQ ID NO: 98)
ABP20-6x	GGGSGGGSEEGGGSEEGGGSEEGGGSEEGGGGS (SEQ ID NO: 85)	HHHHHH (SEQ ID NO: 98)
ABP20-8x	GGGSGGGSEEGGGSEEGGGSEEGGGSEEGGGGS(SEQ ID NO: 86)	HHHHHH (SEQ ID NO: 98)
ABP20-G4-SEEE	GGGSGGGSEEGGGSEEGGGSEEGGGSEEGGGGS (SEQ ID NO: 87)	HHHHHH (SEQ ID NO: 98)
ABP20-G4-SEEA	GGGSGGGSEEGAGGSEAGGSEAGGSEAGGGS (SEQ ID NO: 88)	HHHHHH (SEQ ID NO: 98)
ABP20-G4-SEEQ	GGGSGGGSEEQGGSEEQGGSEEQGGSEEQGGGS (SEQ ID NO: 89)	HHHHHH (SEQ ID NO: 98)
ABP10	GGGSGTQSEEQGGSGGSEEGGMESEENGGSGGSEEGGGGS (SEQ ID NO: 90)	HHHHHH (SEQ ID NO: 98)
ABP10-GS	GGGSGGSEEGGGSGGSEEGGGSEEGGGSGGSEEGGGG (SEQ ID NO: 91)	HHHHHH (SEQ ID NO: 98)
ABP10-GE	GGGEGGSEEGGGEGGSEEGGGSEEGGGEGGSEEGGGG (SEQ ID NO: 92)	HHHHHH (SEQ ID NO: 98)
ABP20-G8-GS	GGGEGGGSEEGGGSGGGSSEEGGGSGGGSSEEGGGG (SEQ ID NO: 93)	HHHHHH (SEQ ID NO: 98)
ABP20-G8-GE	GGGEGGGSEEGGGEGGGSEEGGGEGGGSEEGGGEGGGG (SEQ ID NO: 94)	HHHHHH (SEQ ID NO: 98)
ABP20-G4-GE	GGGEGGGSEEGGGSEEGGGSEEGGGSEEGGGG (SEQ ID NO: 95)	HHHHHH (SEQ ID NO: 98)
ABP20-G4-6x-GE	GGGEGGGSEEGGGSEEGGGSEEGGGSEEGGGSEEGGGG (SEQ ID NO: 96)	HHHHHH (SEQ ID NO: 98)
ABP20-G4-8x-GE	GGGEGGGSEEGGGSEEGGGSEEGGGSEEGGGSEEGGGSEEGGGG (SEQ ID NO: 97)	HHHHHH (SEQ ID NO: 98)

FIG. 5

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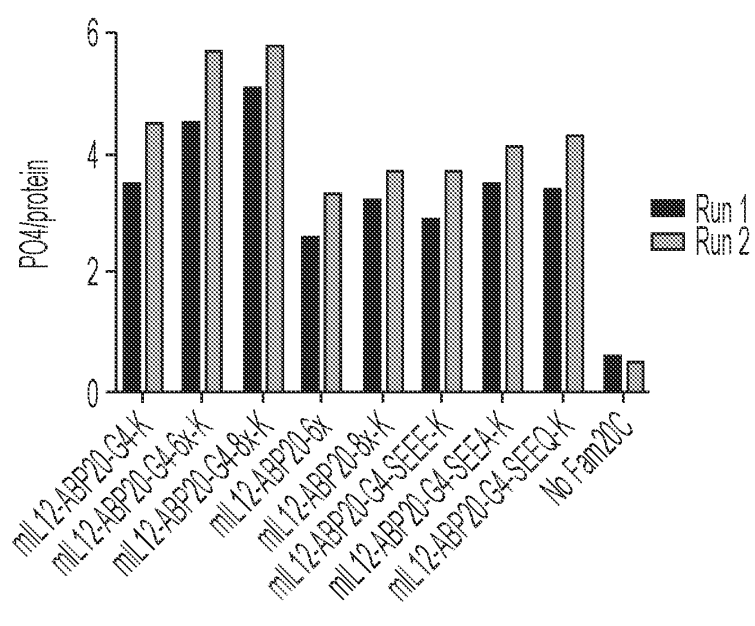


FIG. 6A

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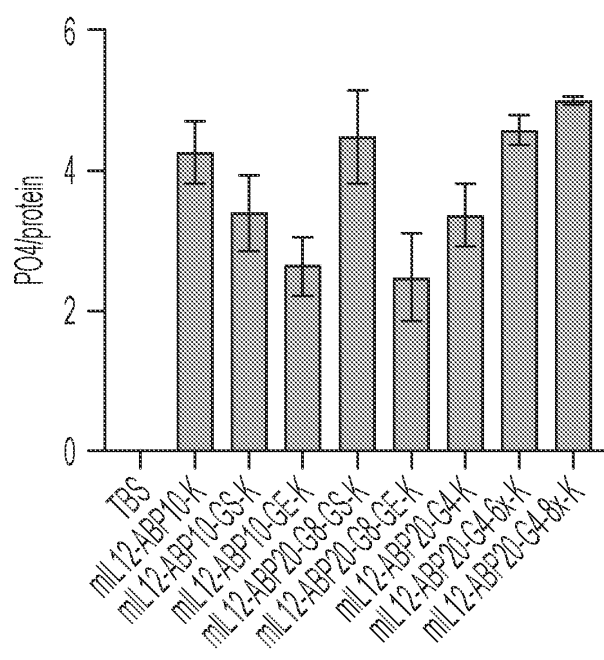


FIG. 6B

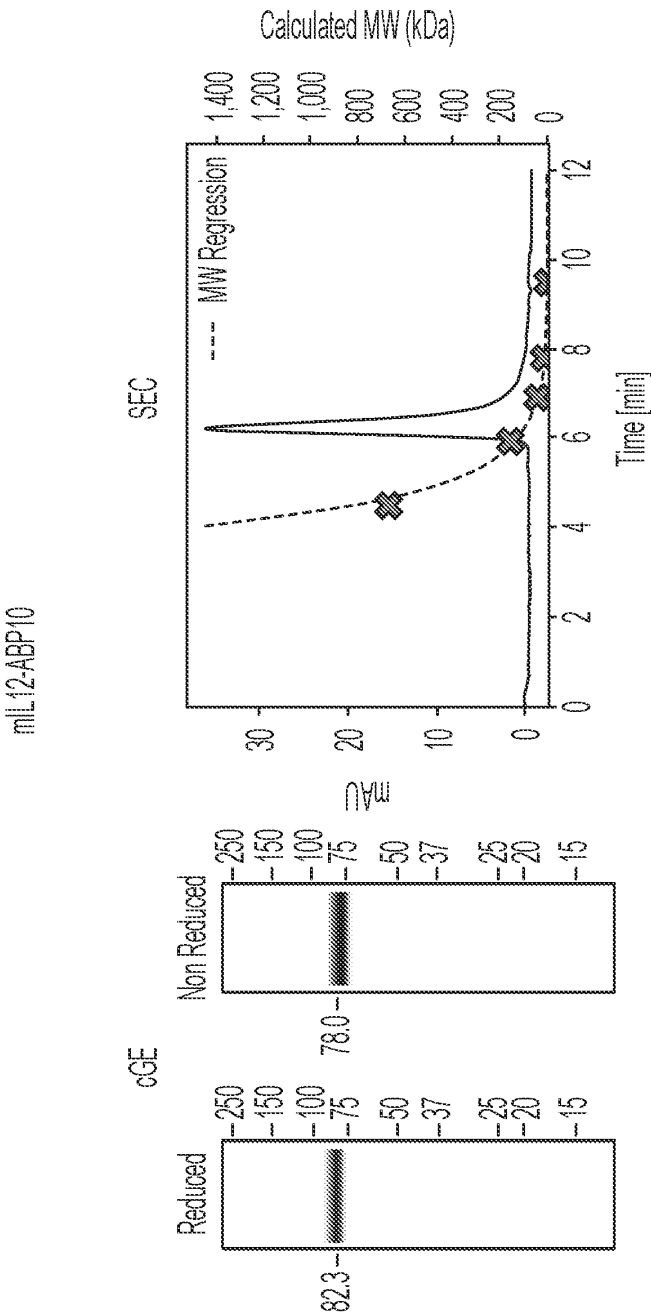


FIG. 7A

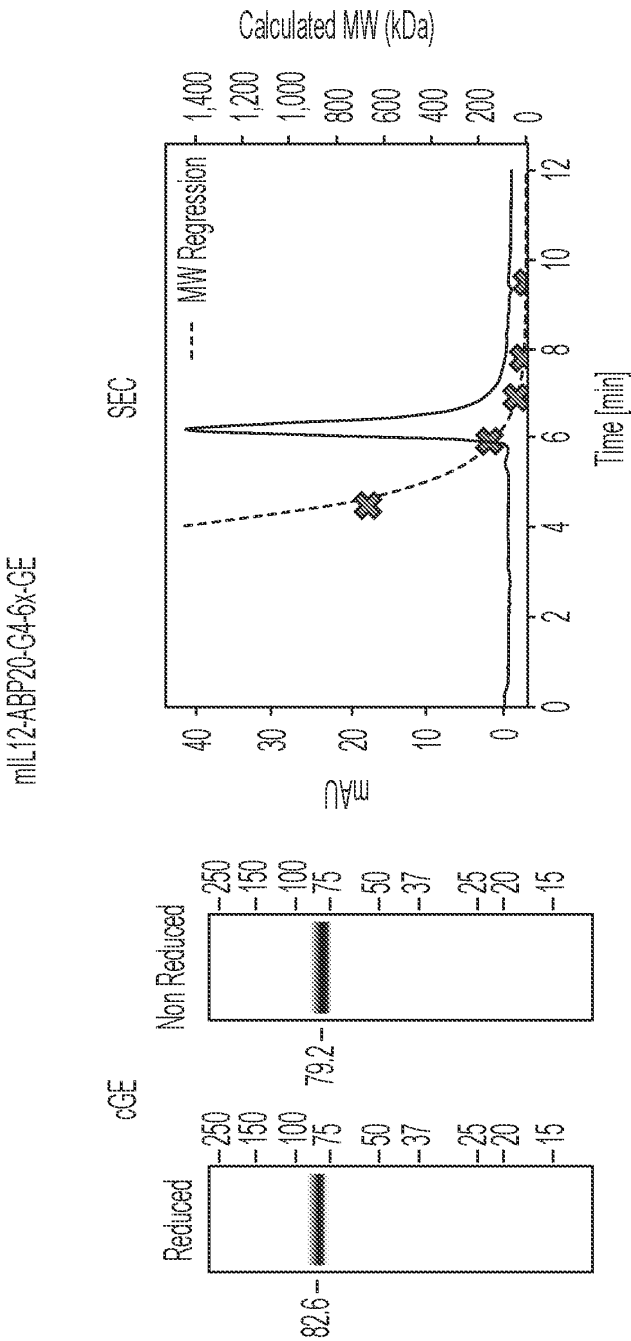


FIG. 7B

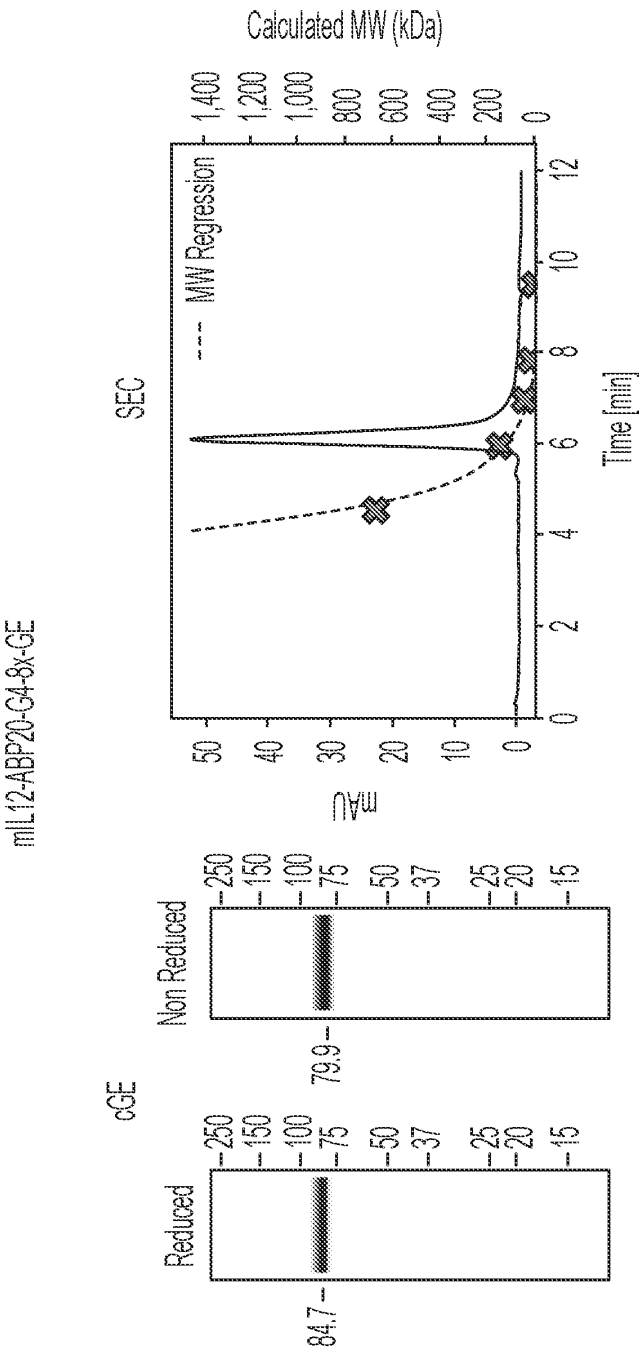


FIG. 7C

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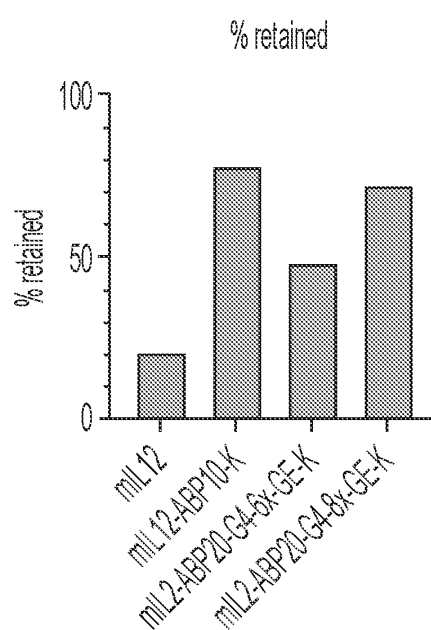


FIG. 8

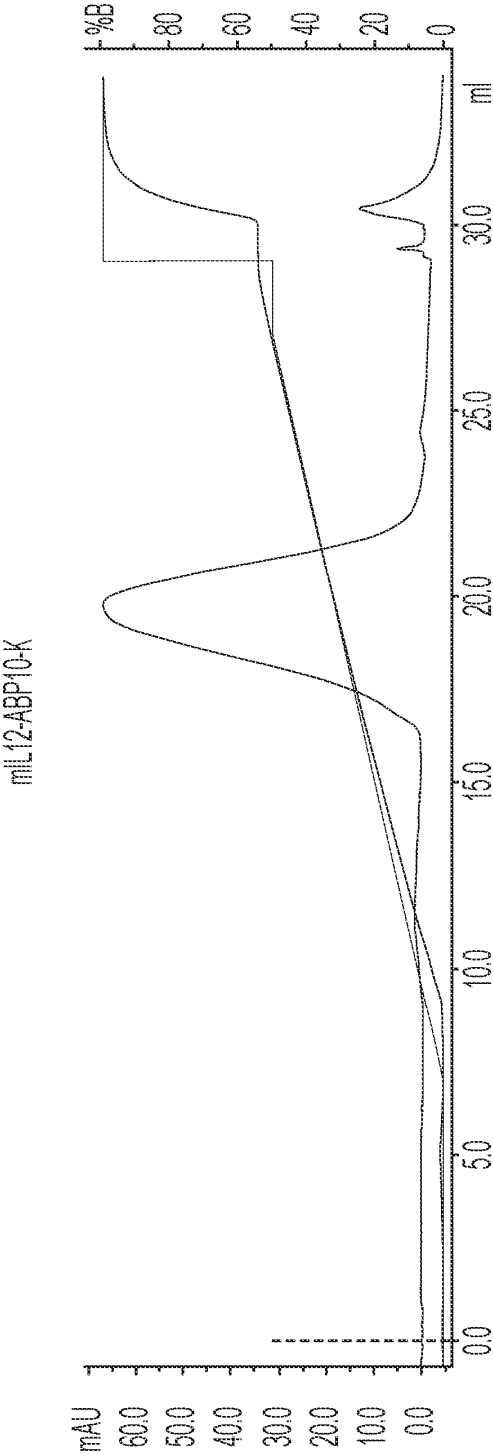


FIG. 9A

mIL12-ABP20-G4-8x-GE-K

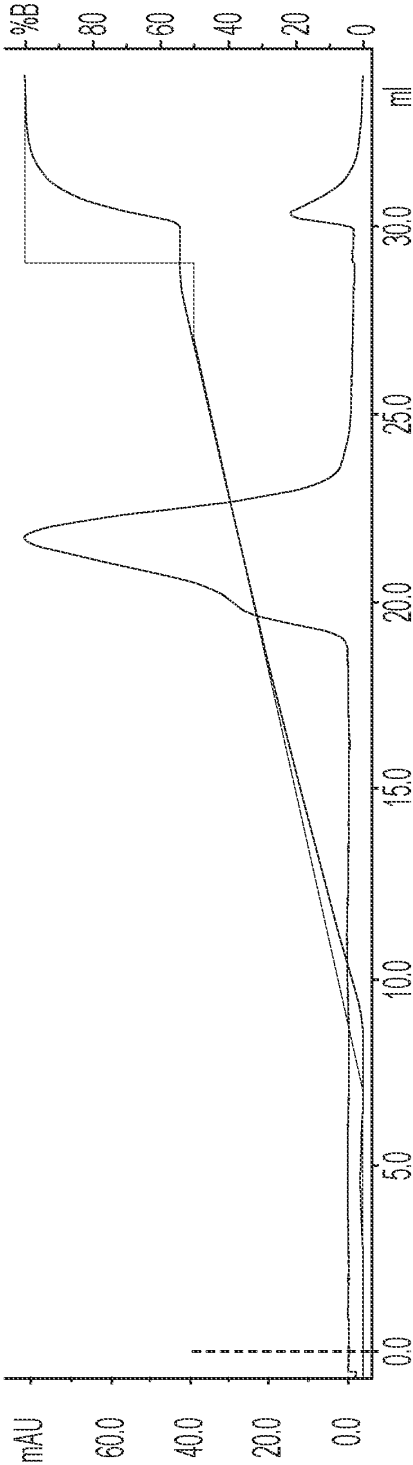


FIG. 9B

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mIL12-ABP10

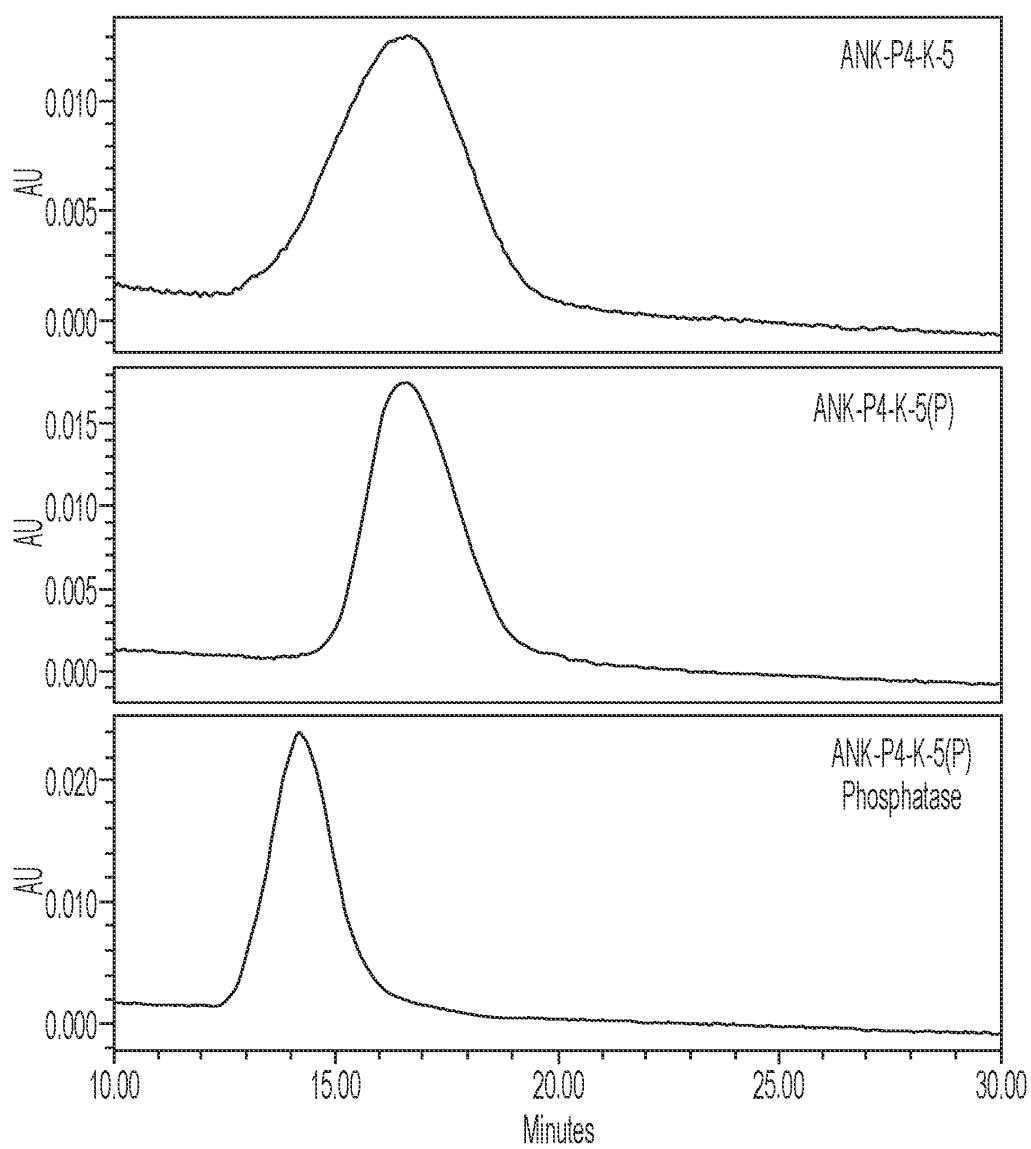


FIG. 10A

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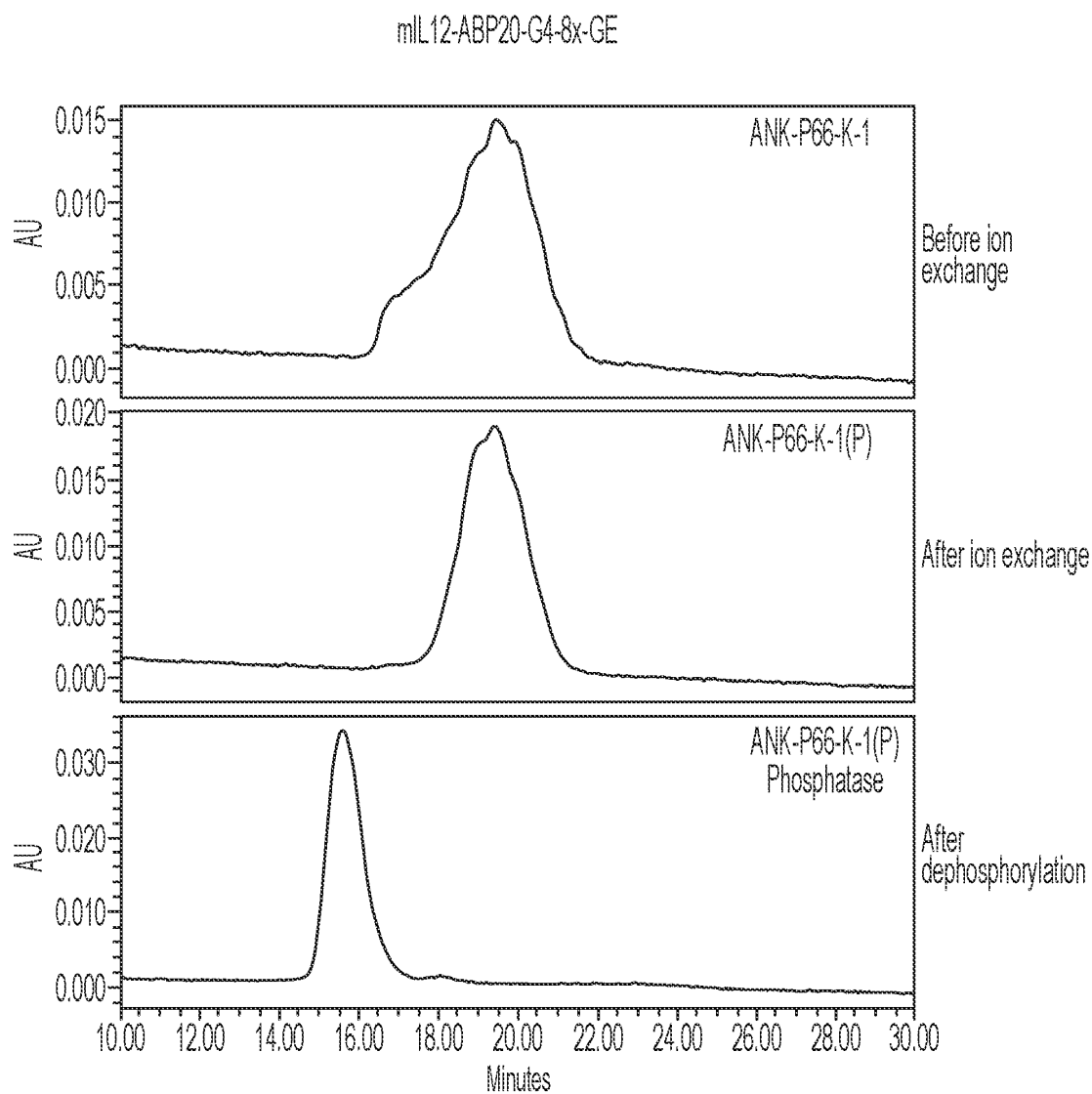


FIG. 10B

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Molecule	Peak elution time		
	Pre-AEX	Post-AEX	Post-AEX + phosphatase
mIL12-ABP10-K	16.7	16.6	14.2
mIL12-ABP20-G4-8x-GE-K	19.5	19.4	15.6

FIG. 10C

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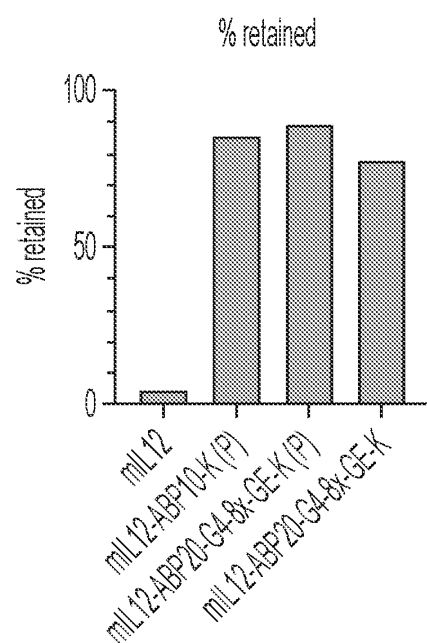


FIG. 11A

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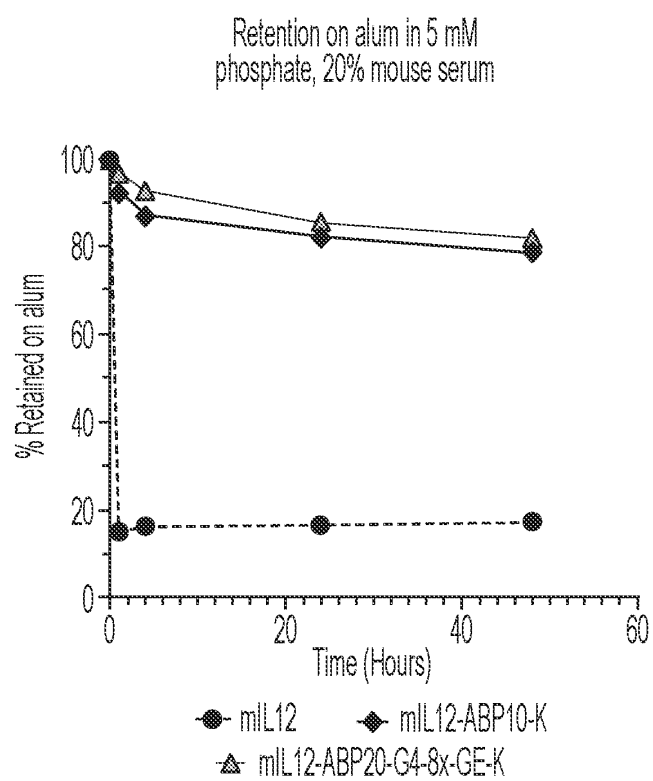


FIG. 11B

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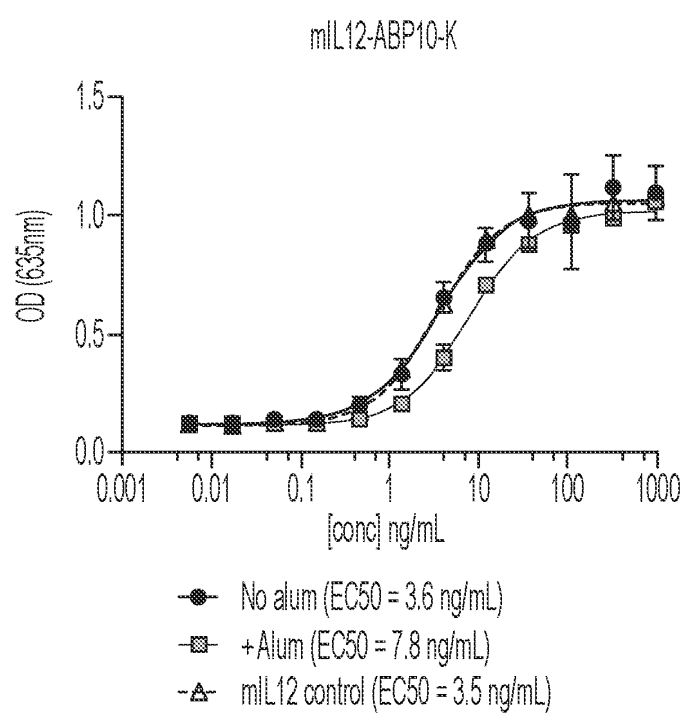


FIG. 12A

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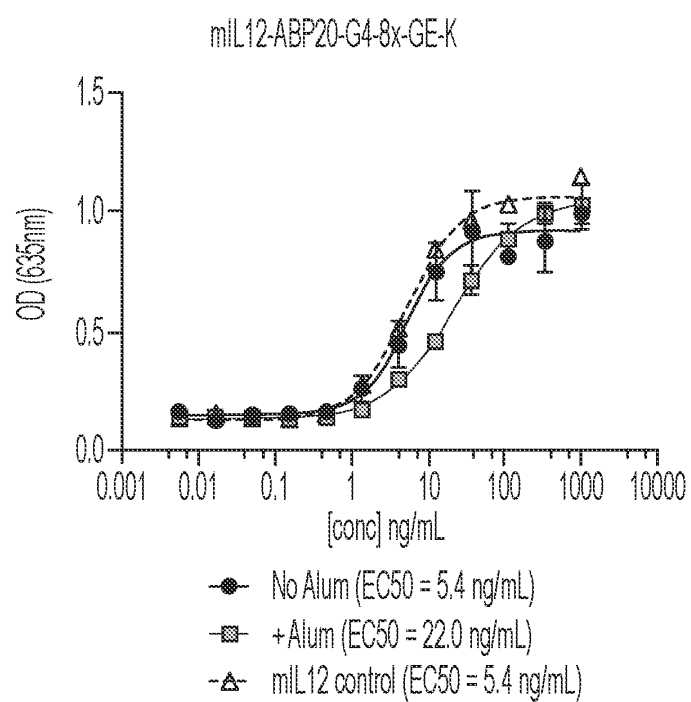


FIG. 12B

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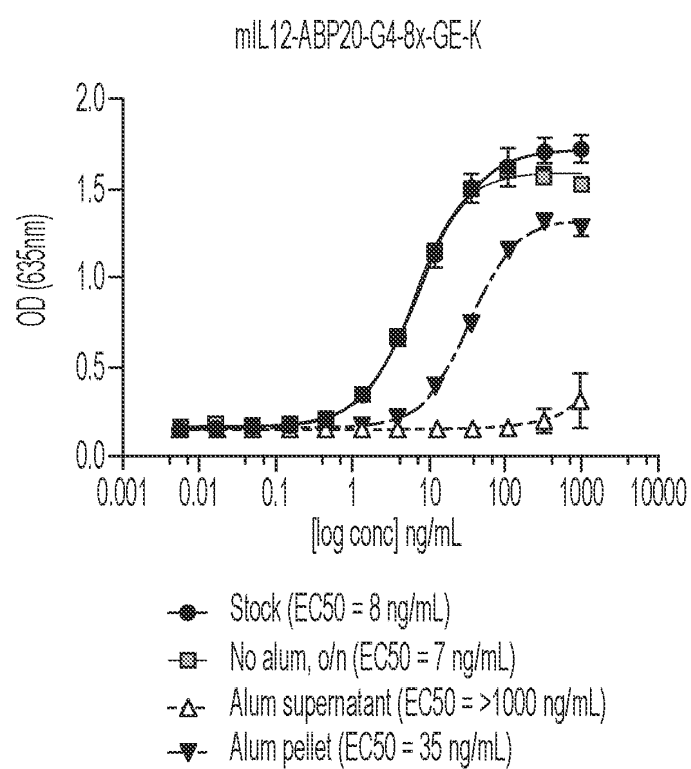


FIG. 13

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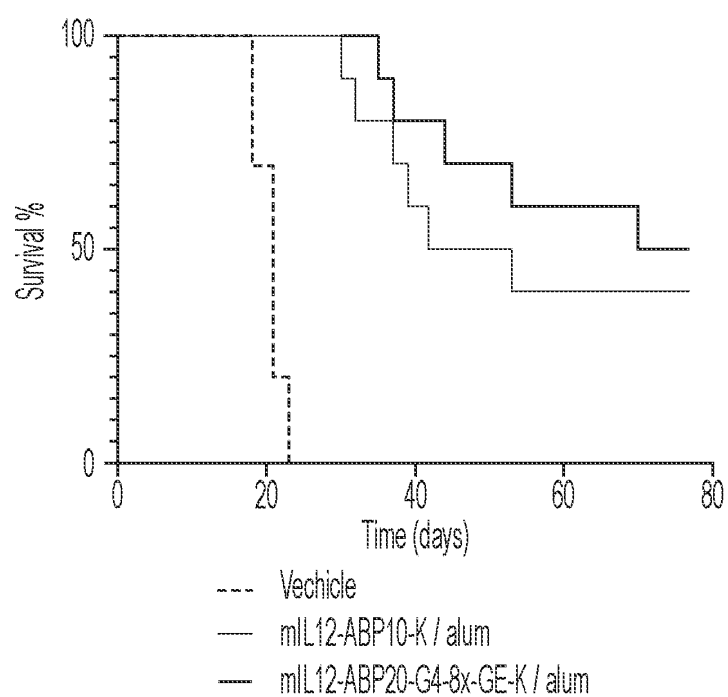


FIG. 14A

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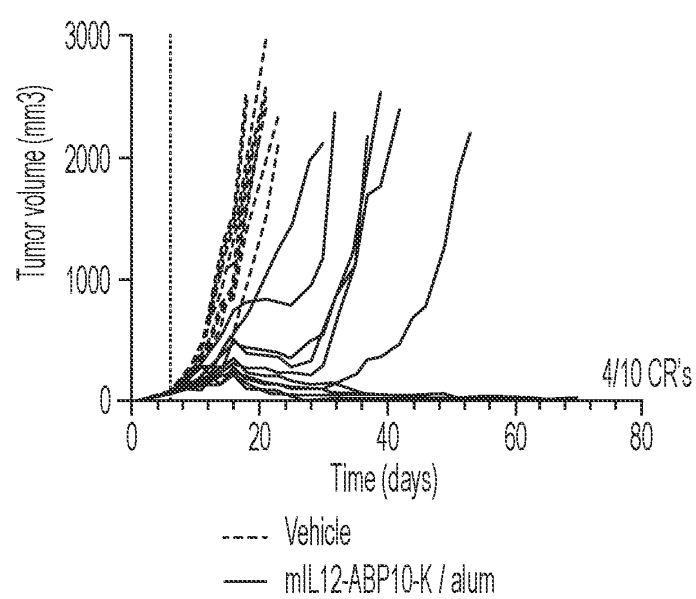


FIG. 14B

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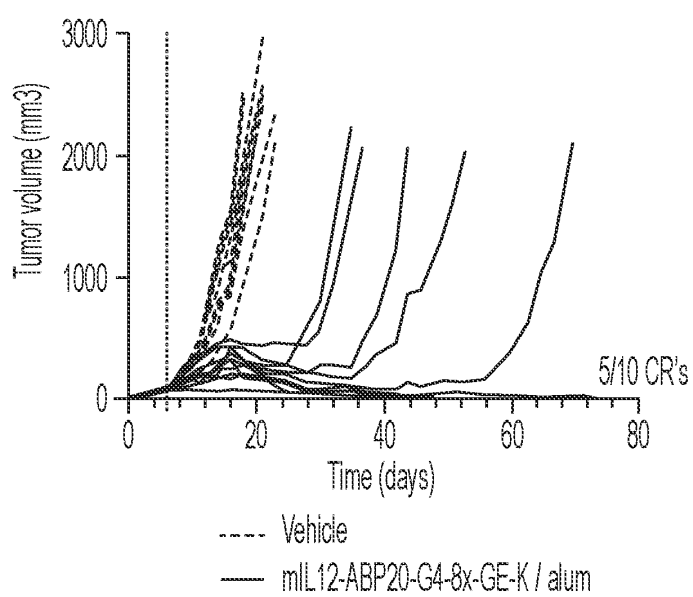


FIG. 14C

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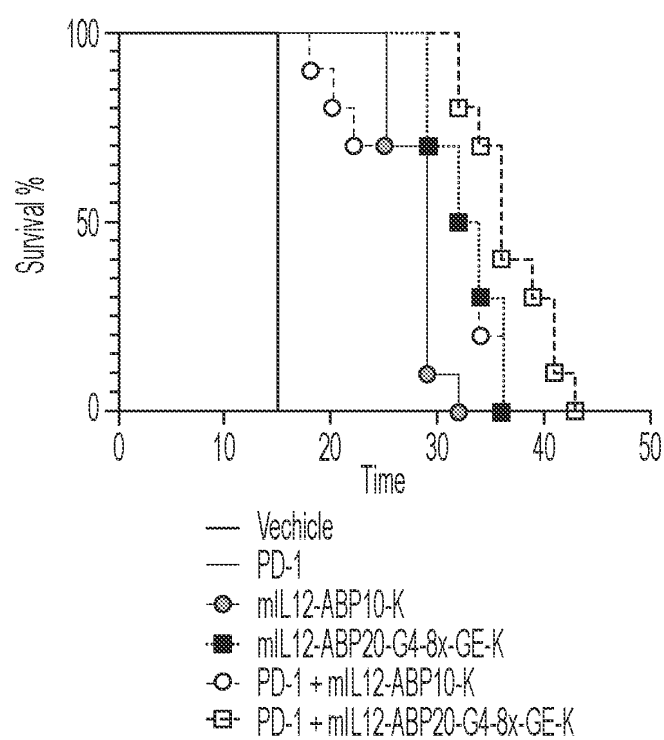


FIG. 15A

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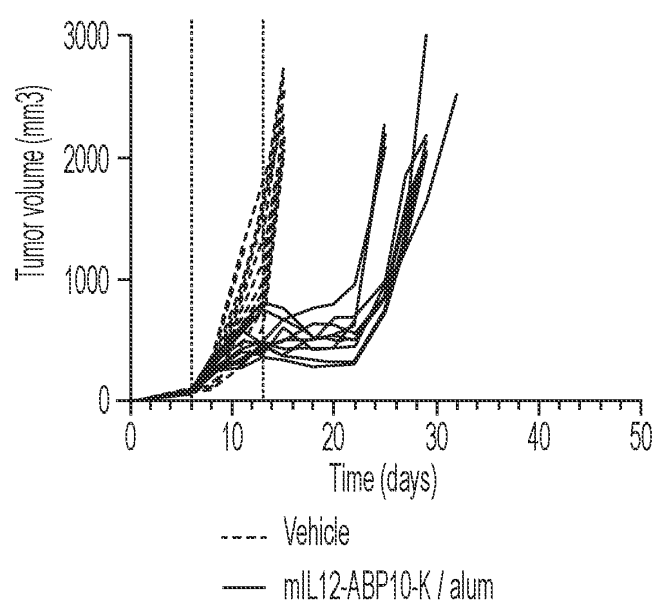


FIG. 15B

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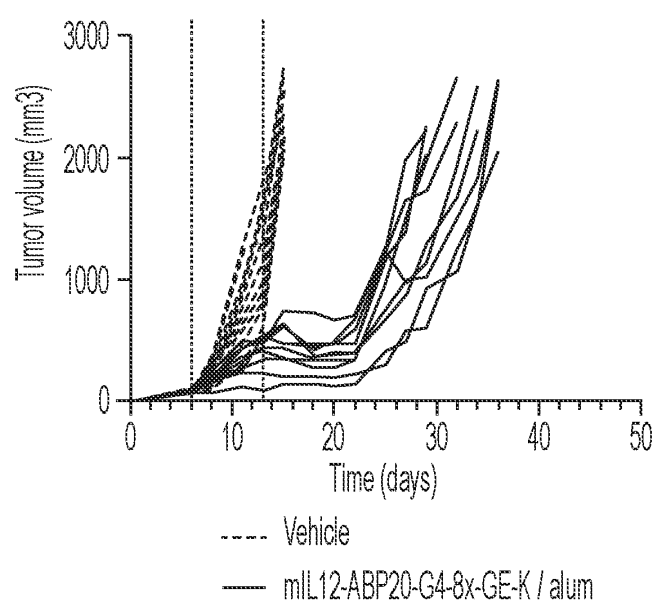


FIG. 15C

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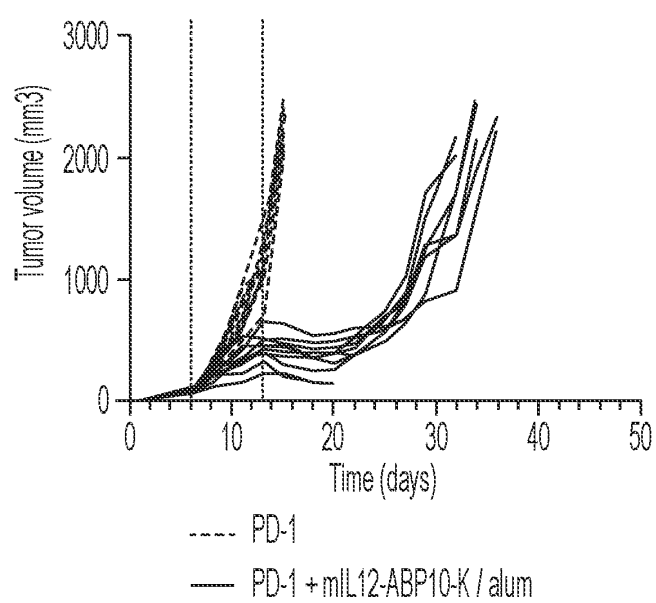


FIG. 15D

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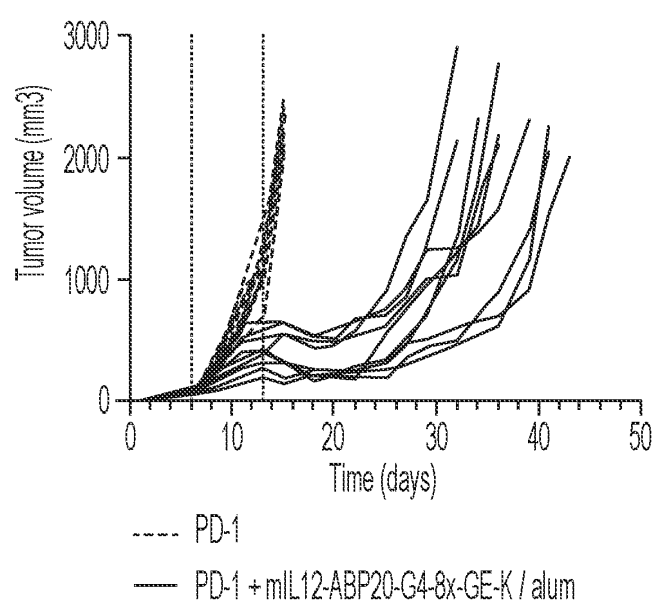


FIG. 15E

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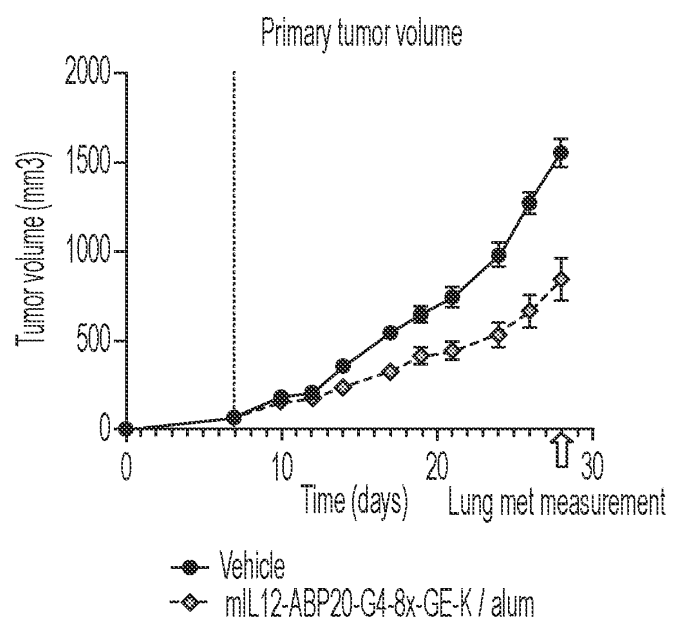


FIG. 16A

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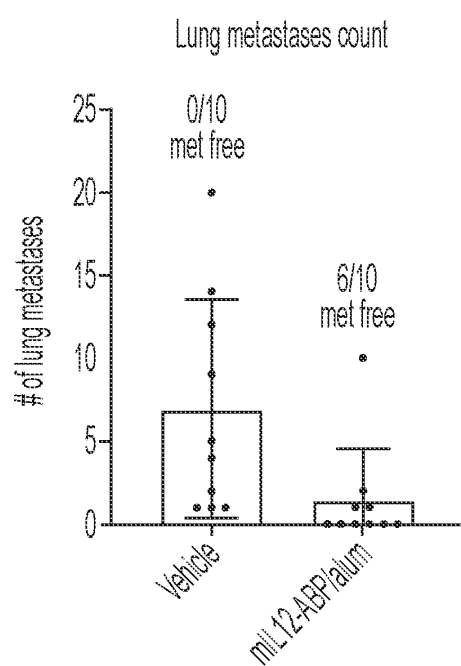


FIG. 16B

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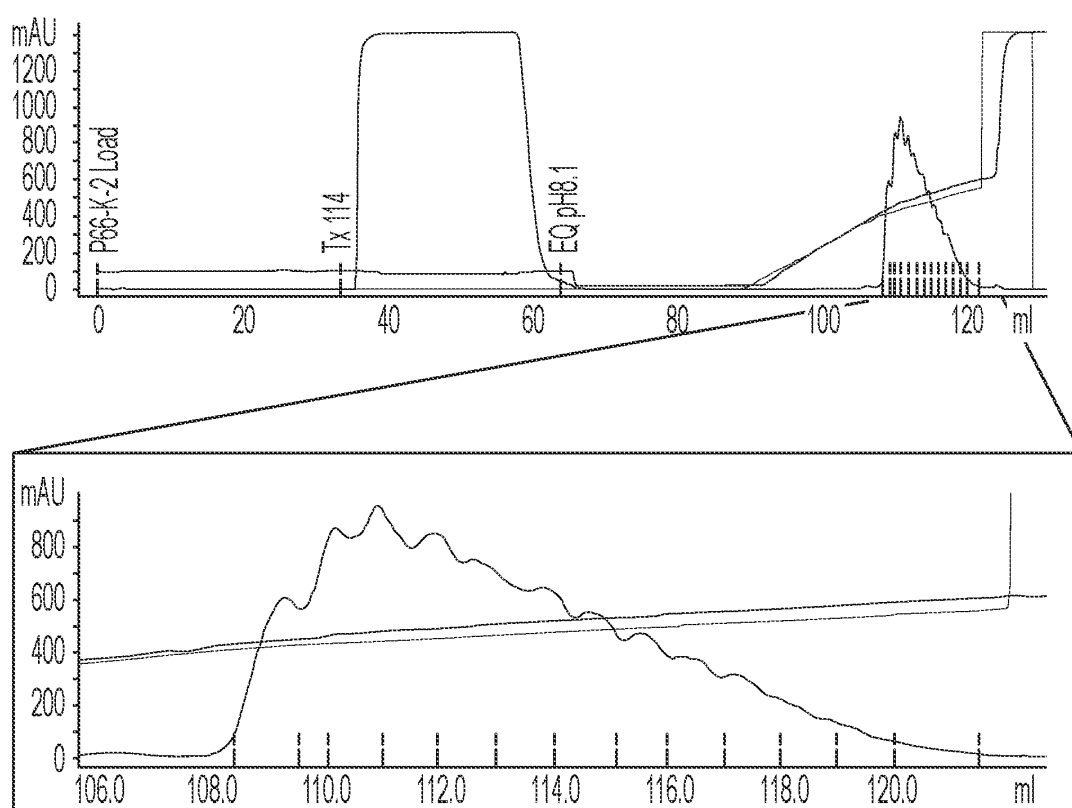


FIG. 17A

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Fraction	% of pool	PO4/protein
No Fam20C control		0.6
110		2.4
111		3.7
112	24	4.6
113	20	5.8
114	17	6.2
115	14	6.3
116	11	6.4
117	9	6.9
POOL (112-118)		5.7

FIG. 17B

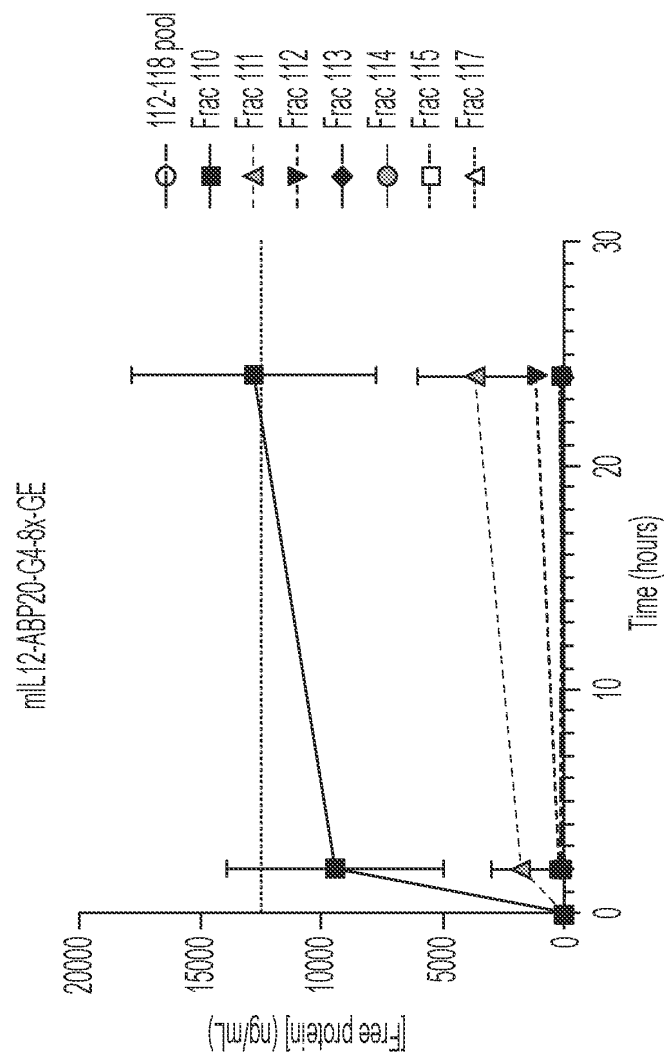
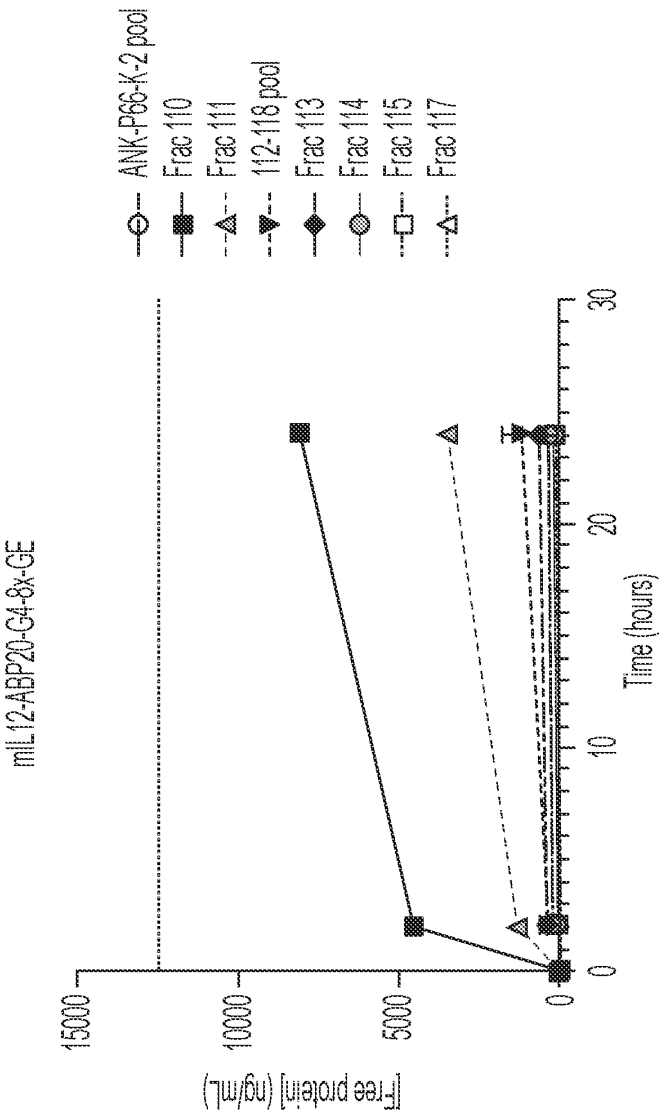


FIG. 18A



Dashed line represents 12,500 ng/mL theoretical concentration of free protein if all protein elutes off alum

FIG. 18B

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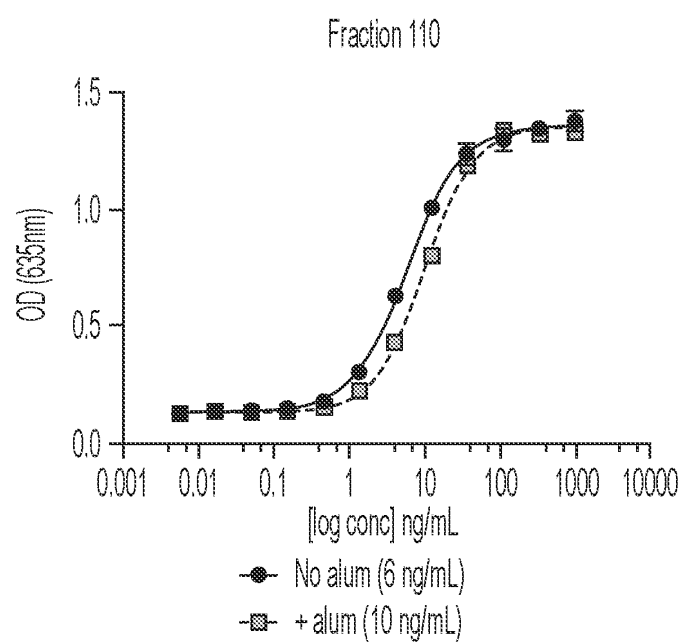


FIG. 19A

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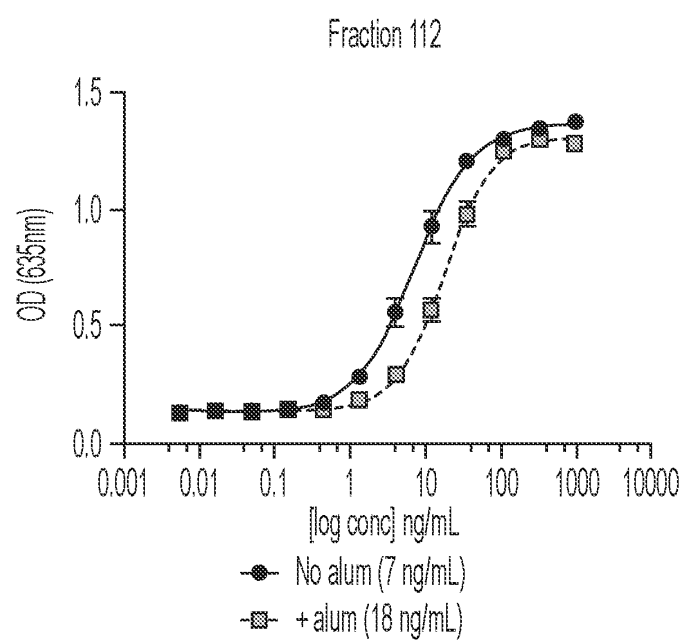


FIG. 19B

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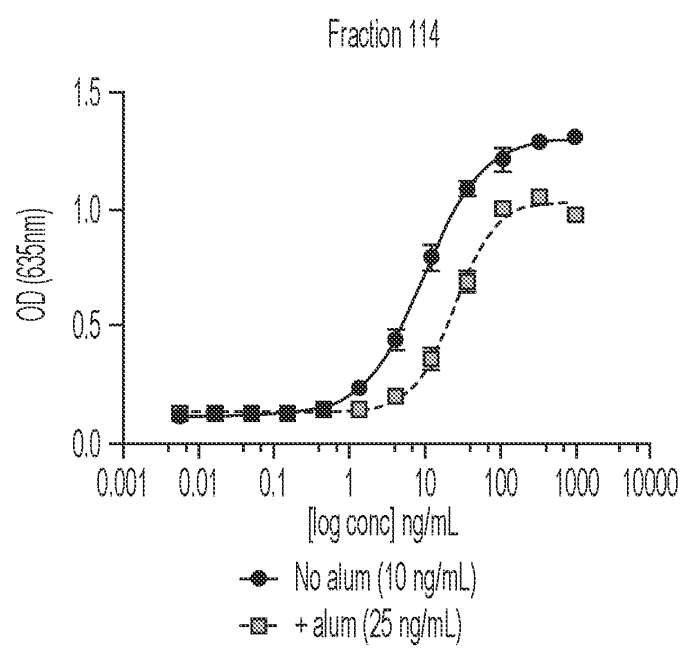


FIG. 19C

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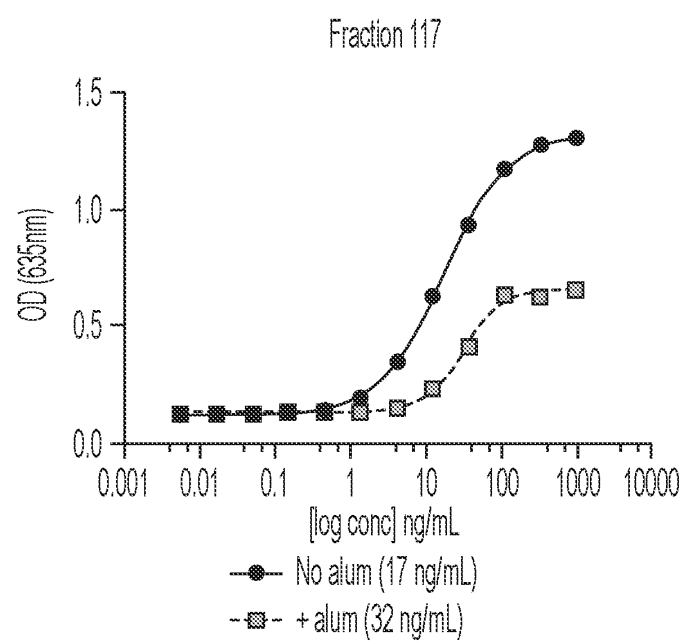


FIG. 19D

Fraction	% of pool	PO4/protein (mean)	Alum retention			HEK-Blue-IL12		
			% Retained - Run 1	% Retained - Run 2		EC50 - No alum	EC50 w/ alum	% max signal
110		2.4	11	50		6	10	100
111		3.7	78	81				
112	24	4.6	95	95		7	18	100
113	20	5.8	99	96				
114	17	6.2	100	99		10	25	79
115	14	6.3	100	99				
116	11	6.4						
117	9	6.9	100	100		17	32	50

FIG. 20

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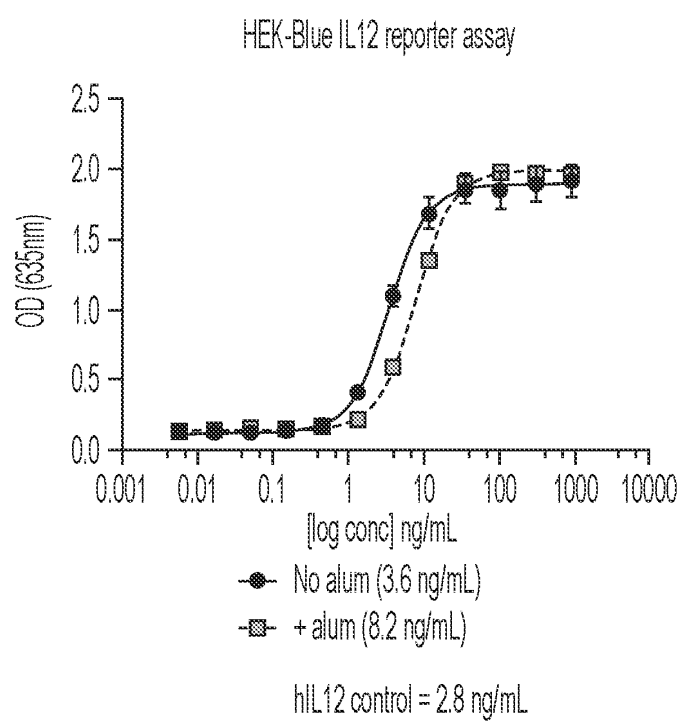


FIG. 21A

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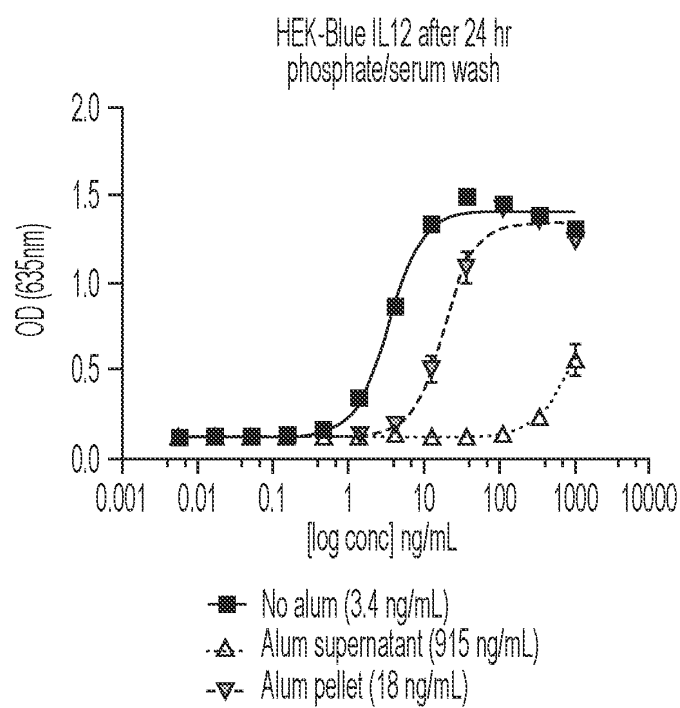


FIG. 21B

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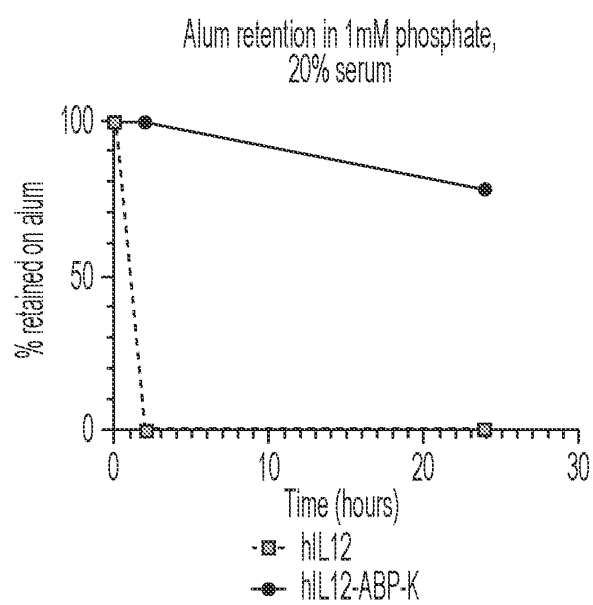


FIG. 21C

HEK-Blue-IL12		Alum retention	
EC50 - No alum	EC50 w/ alum	% Retained - 24 hours	
3.5	5	70	
3.6	6.4	91	
3.4	8.6	99	
3.4	14	99	

Fraction	Conc (mg/mL)	PO4/protein
645	7.4	5.8
650	13.9	5.8
655	12.7	6.3
660	10	8.4
665	4.8	8.8

FIG. 22

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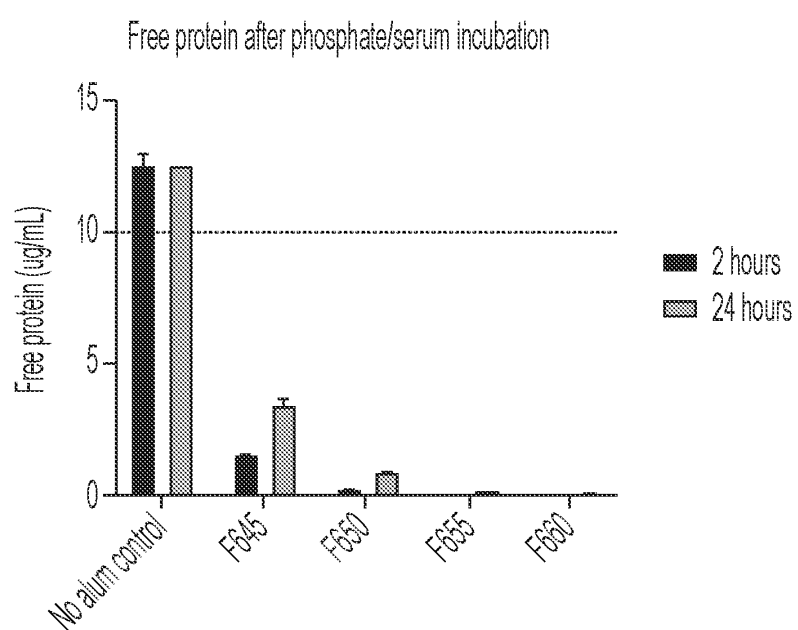


FIG. 23

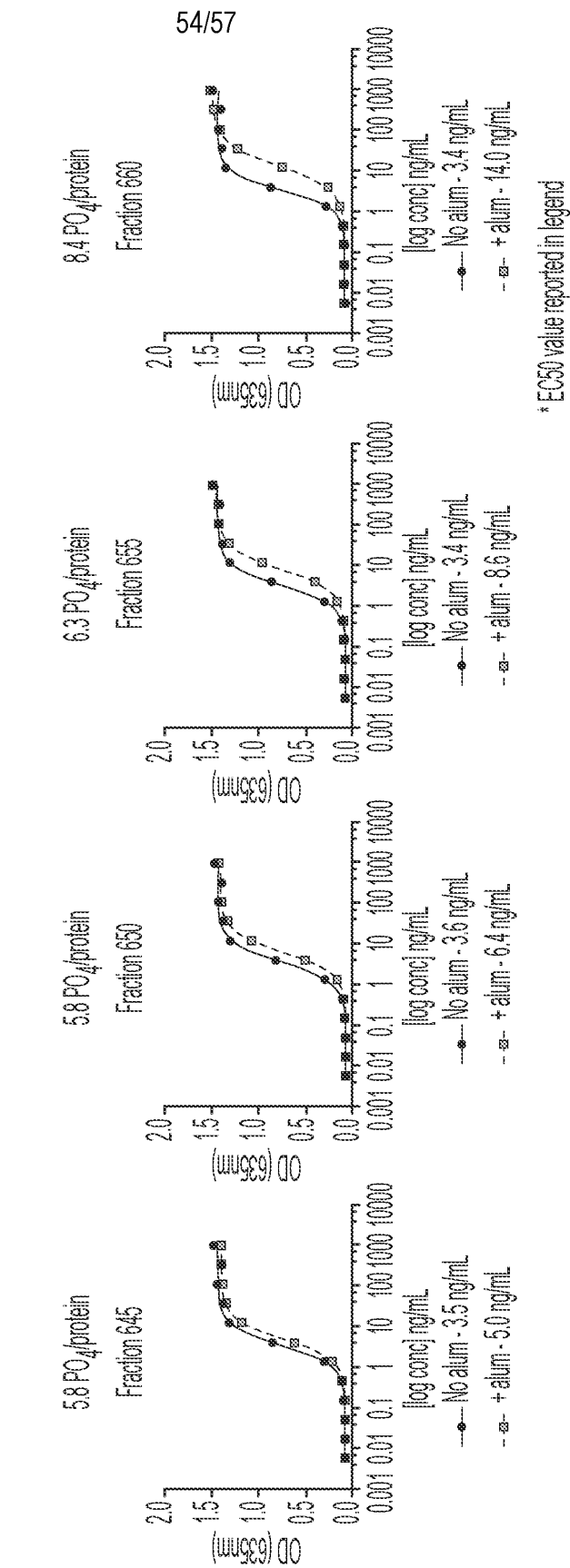


FIG. 24

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Q-HP elution fraction	PO4/protein (malachite green)	% retained on alum at 24 hours	HEK-Blue-IL12 EC50 (ng/mL)	
			No alum	+ alum
f90	0.4			
f91	2.0	28		
f92	4.5	65		
f93	5.5	97	2.5	6.5
f93.5	6.5	99		
f94	6.8	100		9.4
f94.5	8.3	100		9.0
f95	9.4	100	3.0	14.4
f96	10.3	100		16.5
f97	10.8	100	3.9	30.1
f98	12.2			
f99	11.3			

FIG. 25

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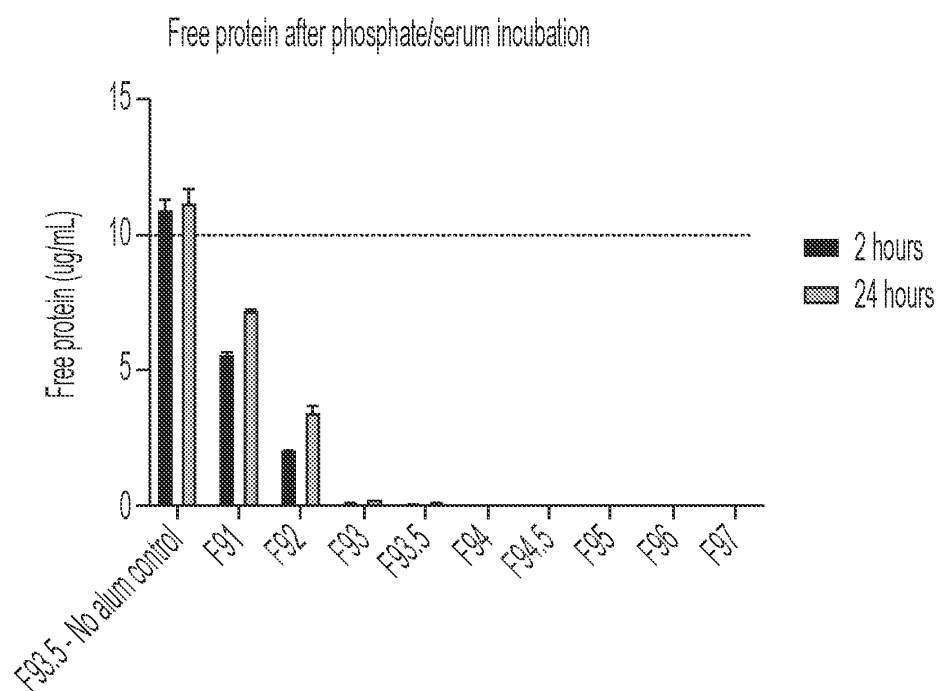


FIG. 26

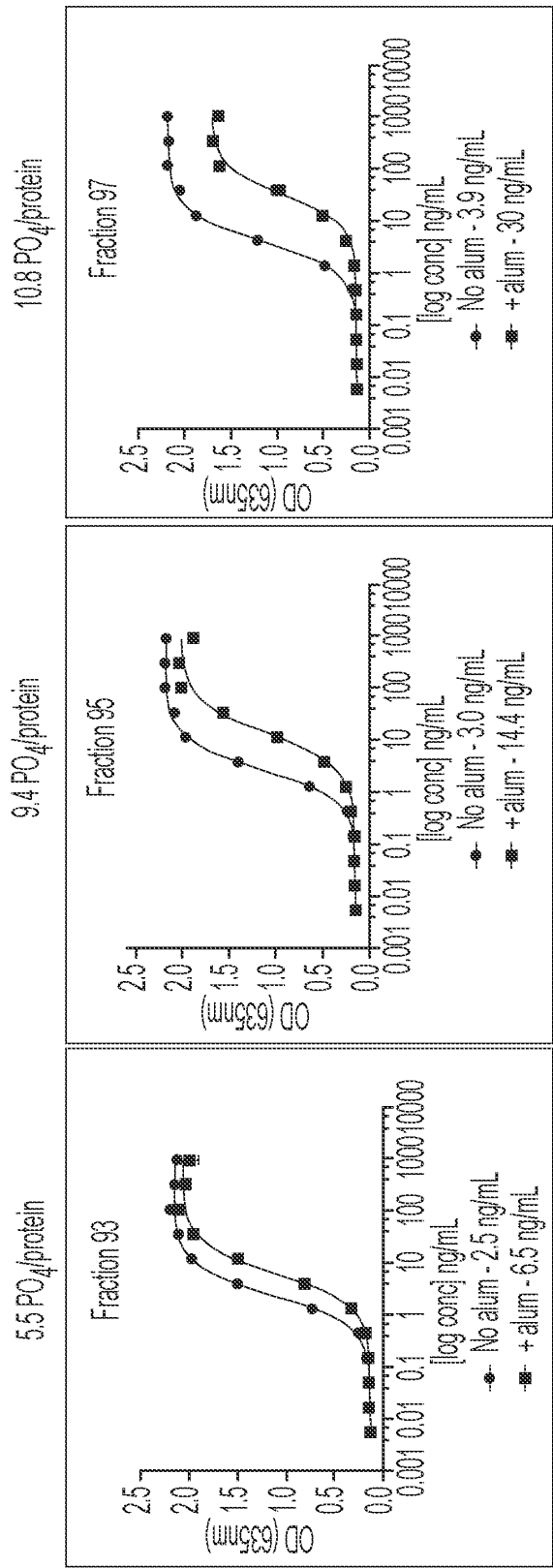


FIG. 27