

Figure 1A

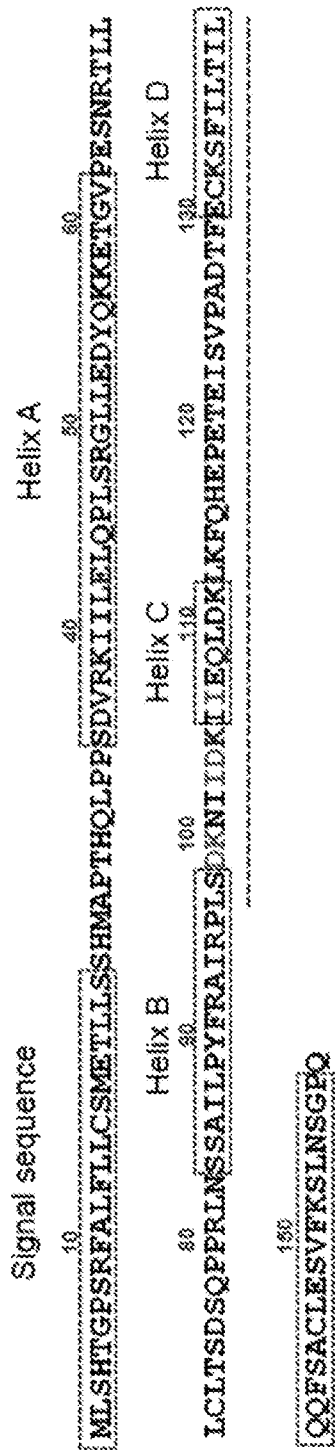


Figure 1B

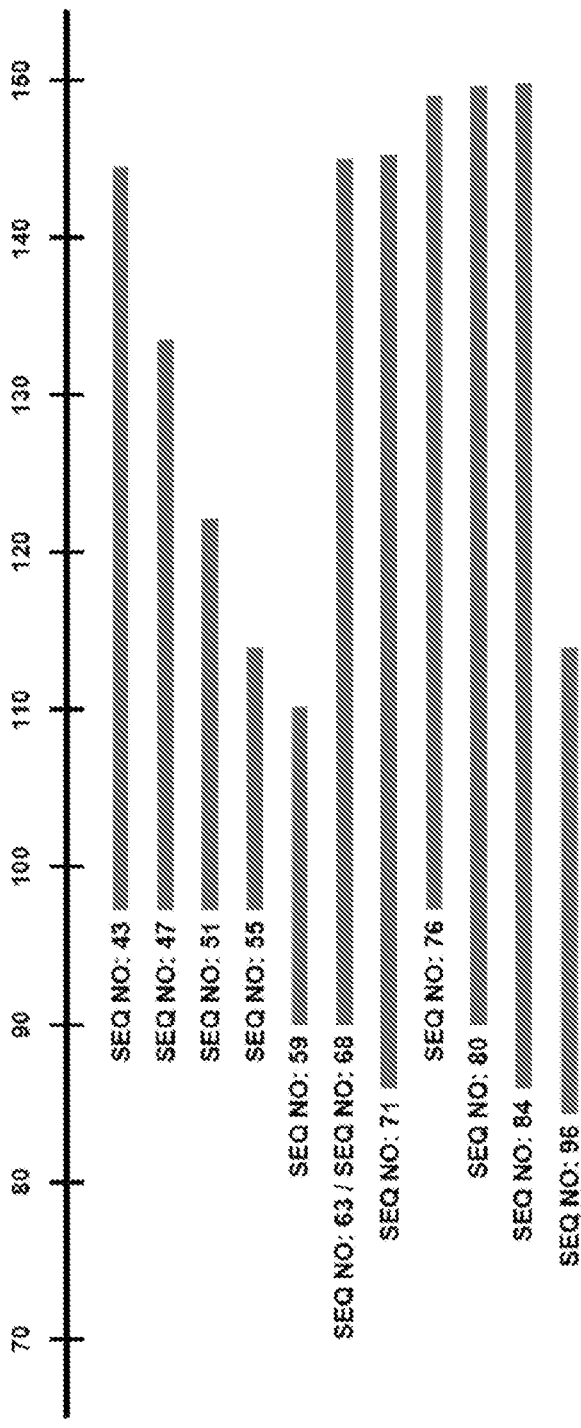


Figure 2

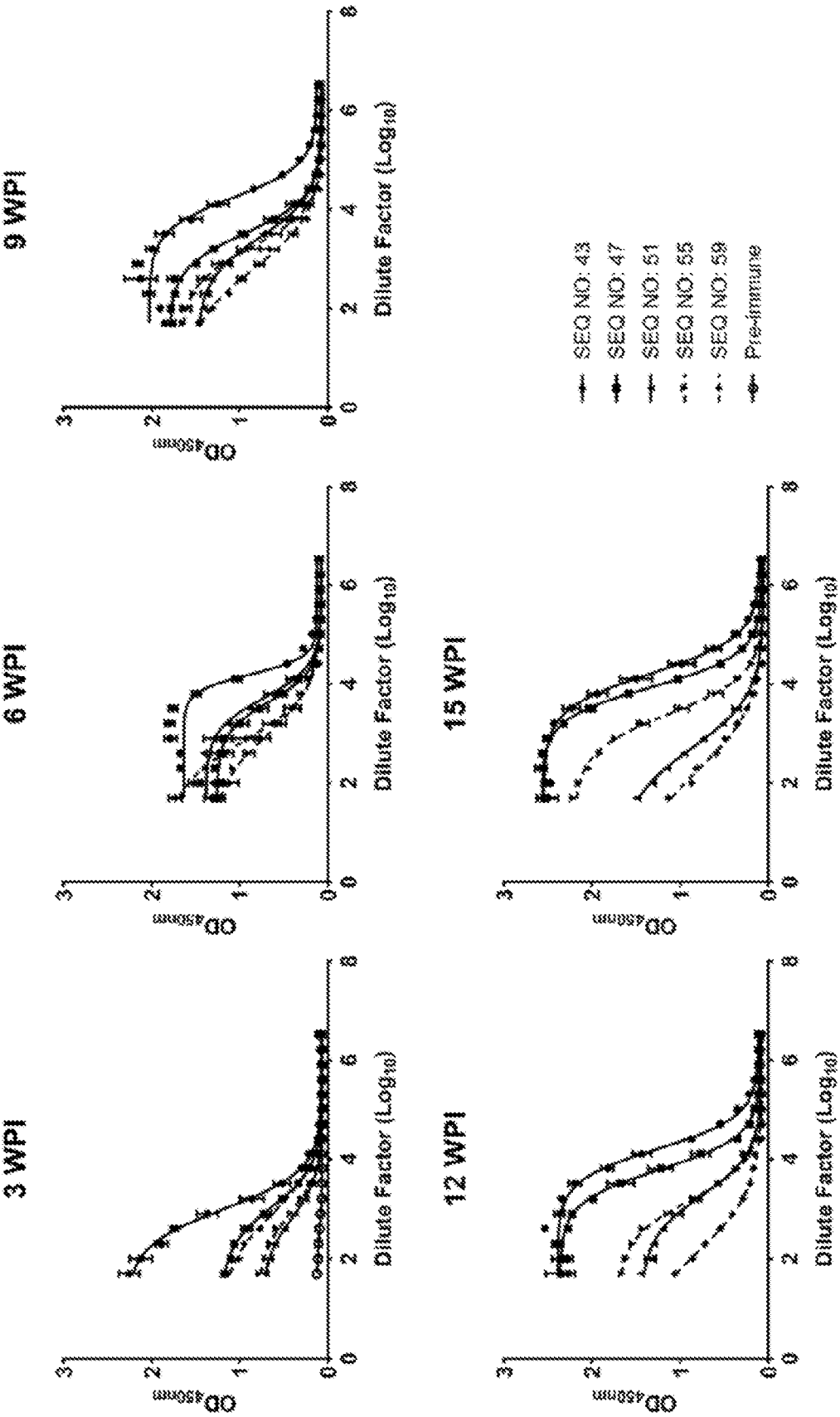


Figure 3A

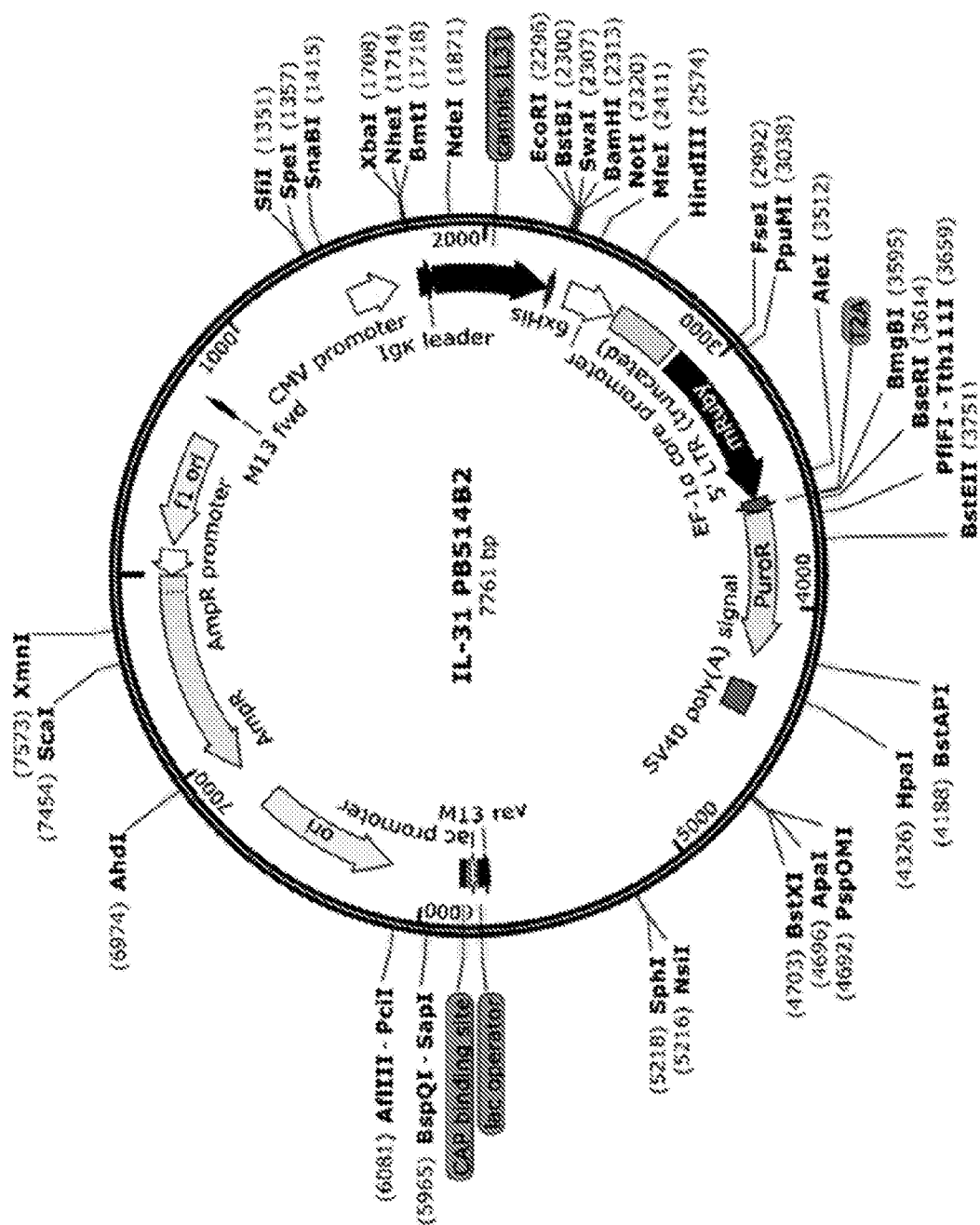


Figure 3B

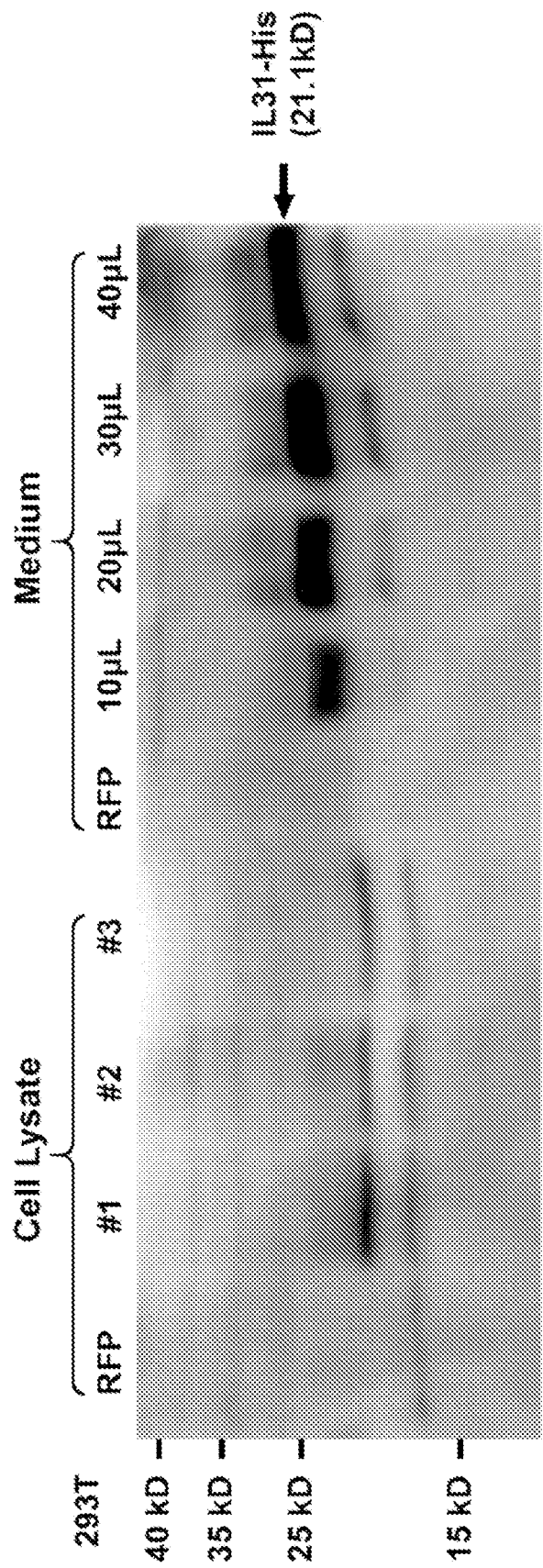


Figure 3C

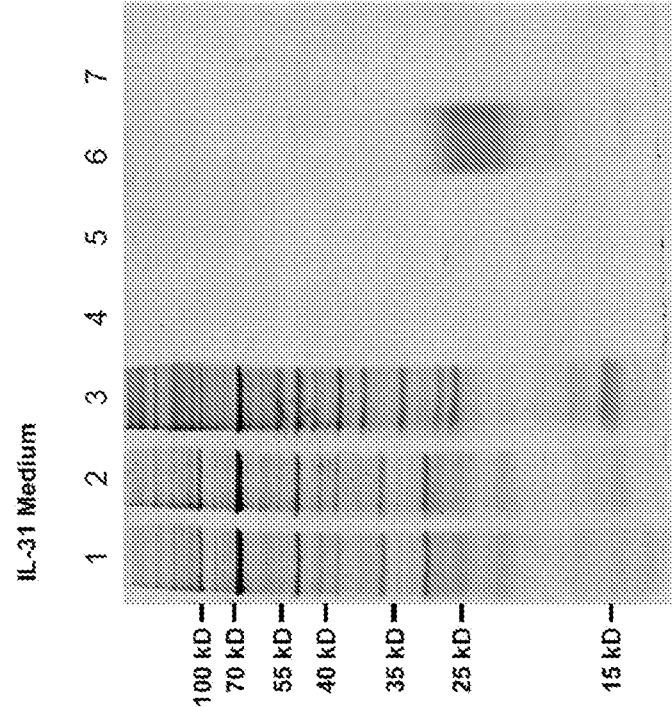
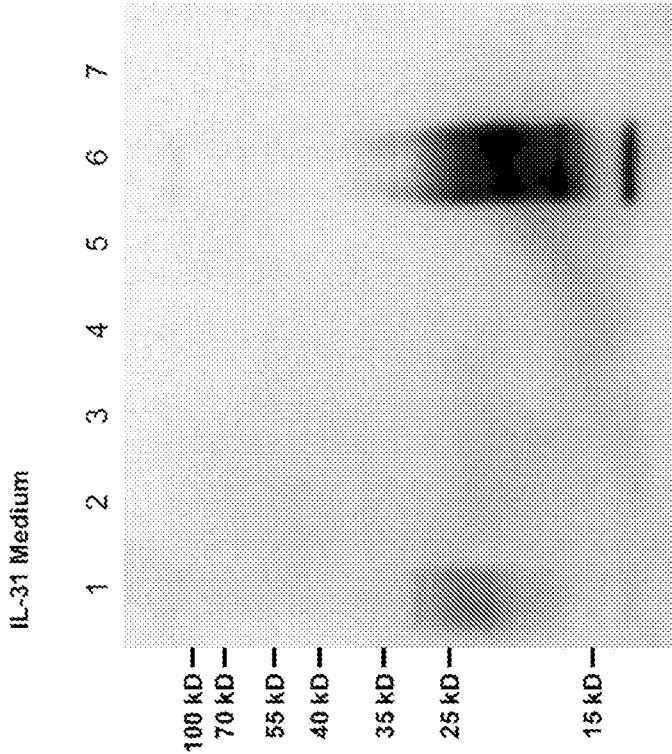


Figure 3D



Lane	Sample
1	0.22µM filter
2	Binding Waste
3	Wash 1
4	Wash 2
5	Wash 3
6	Elute
7	Beads

Figure 4A

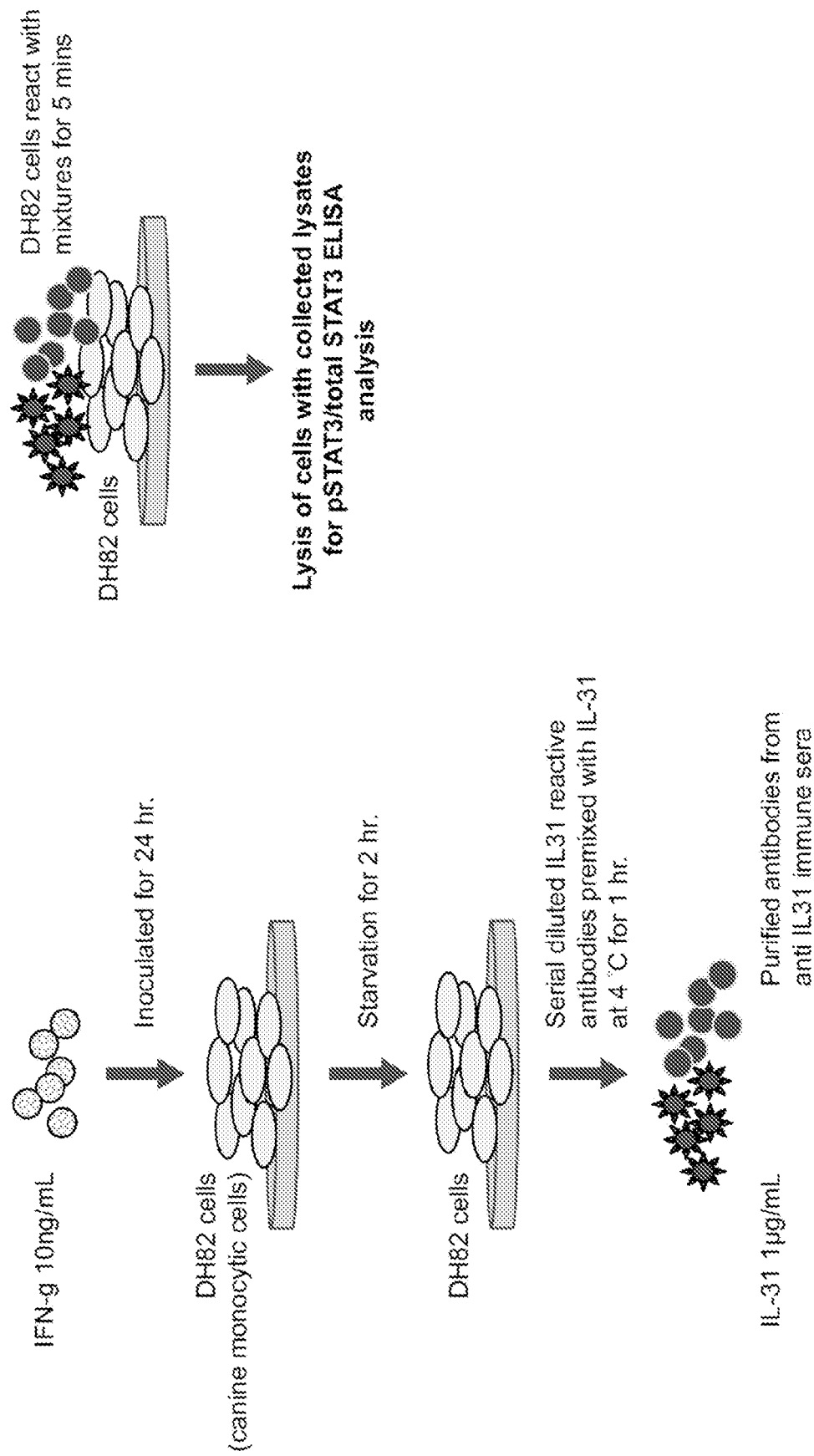


Figure 4B

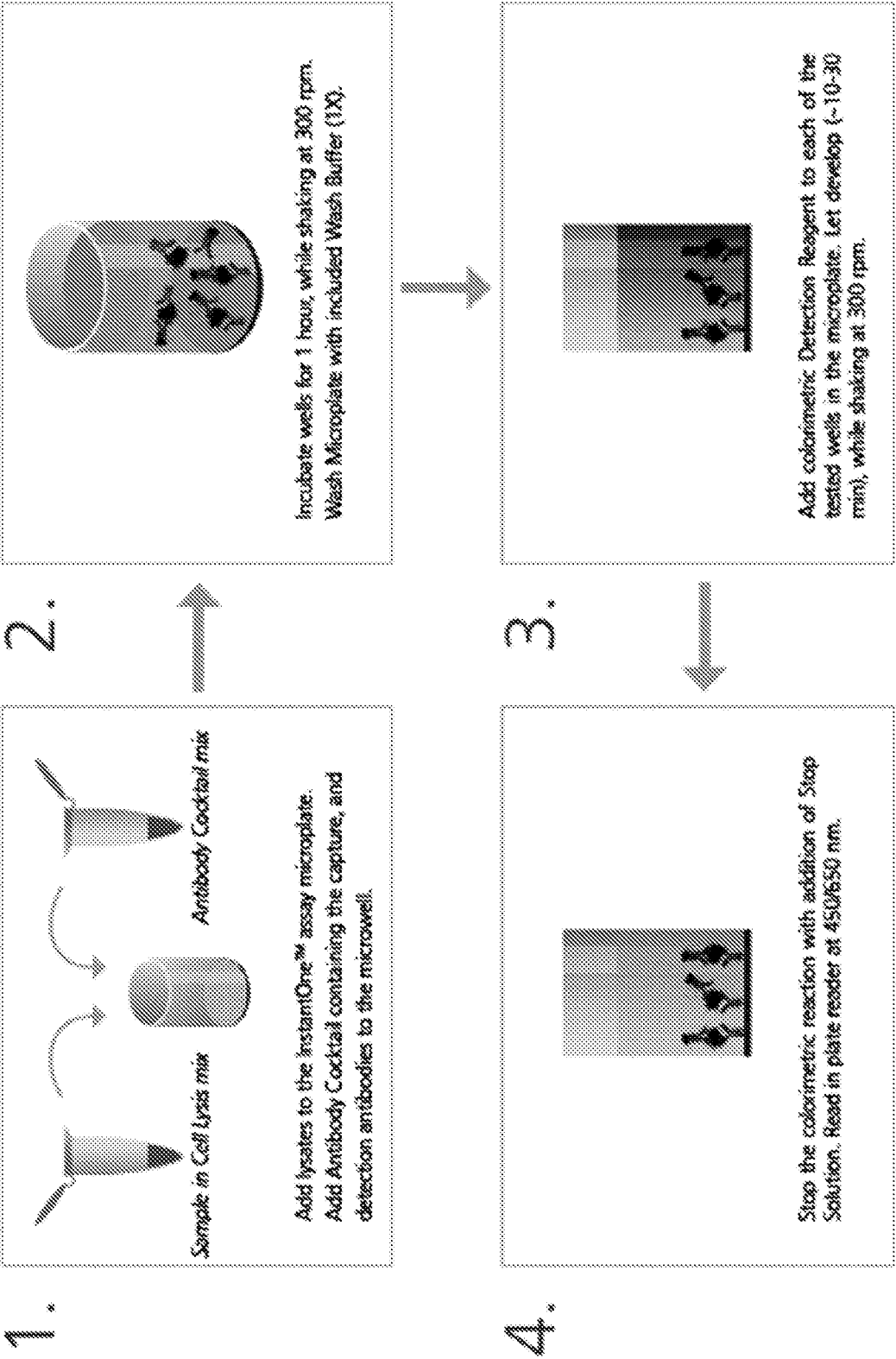


Figure 5A

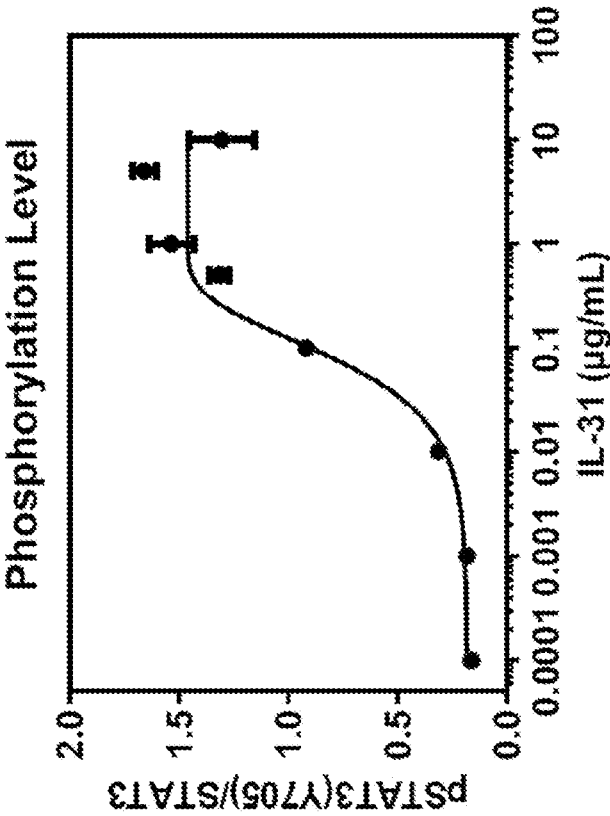


Figure 5B

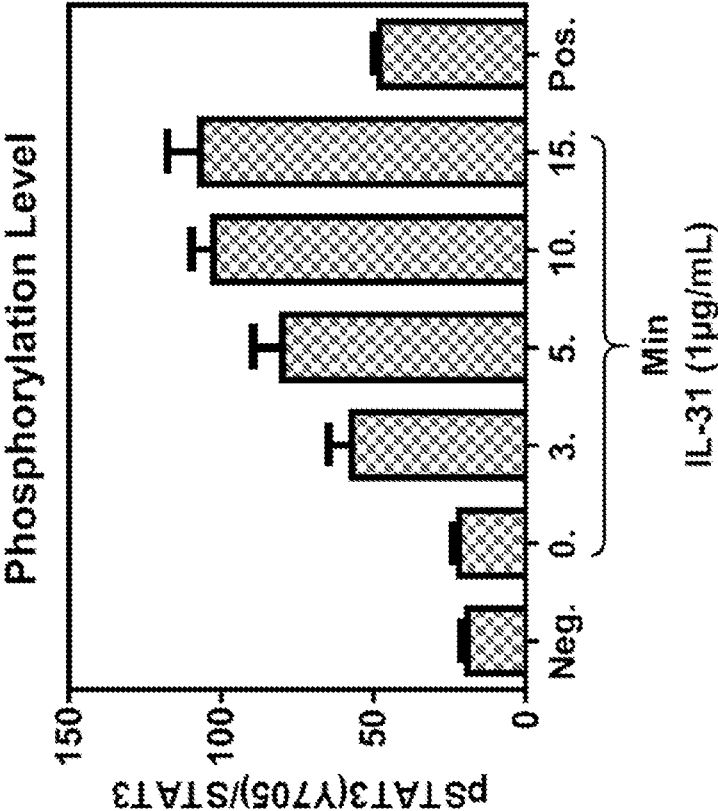


Figure 6B

15 WPI

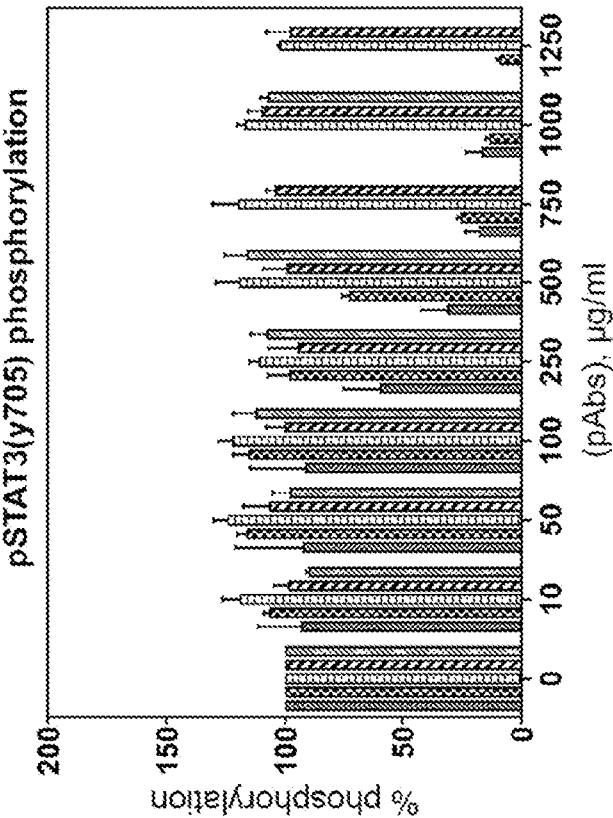
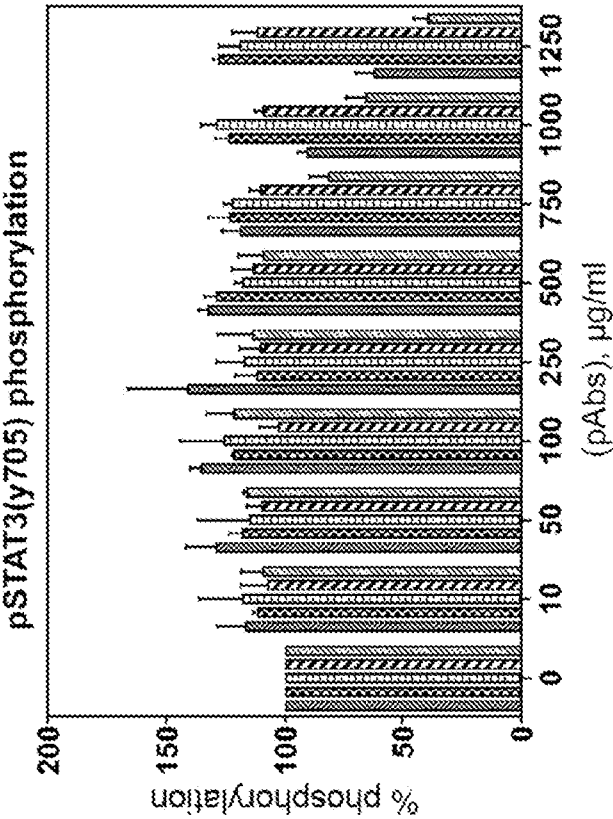


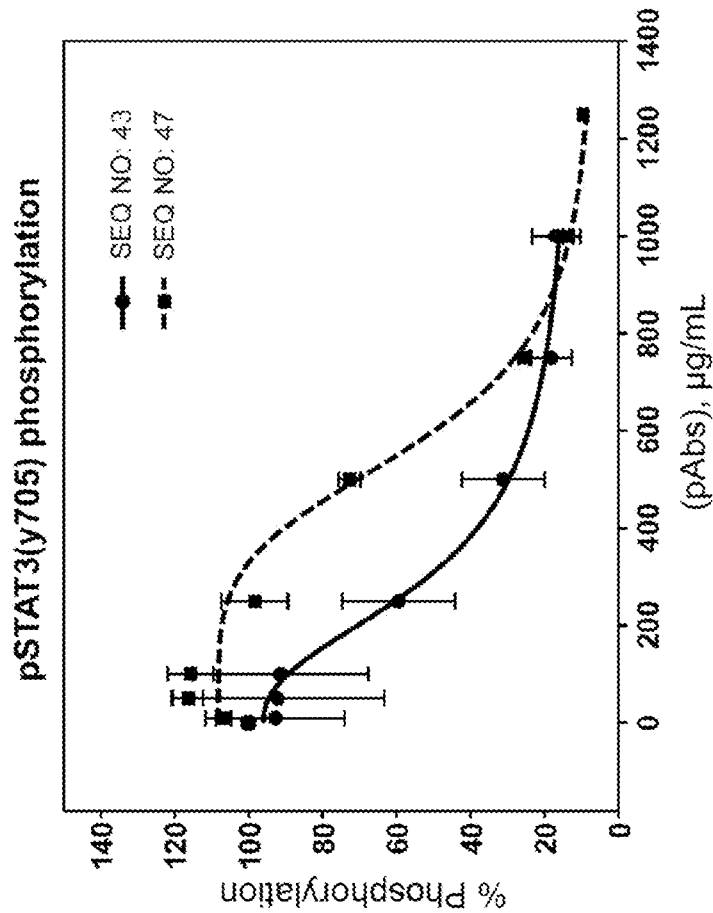
Figure 6A

12 WPI



- SEQ NO: 43
- SEQ NO: 47
- SEQ NO: 51
- SEQ NO: 55
- SEQ NO: 59

Figure 7



Inhibition (IC_{50}) to recombinant canine IL-31 protein induced pSTAT signaling

Immunogen	15 WPI
SEQ NO: 43	285.8 µg/mL
SEQ NO: 47	563.1 µg/mL

Figure 8

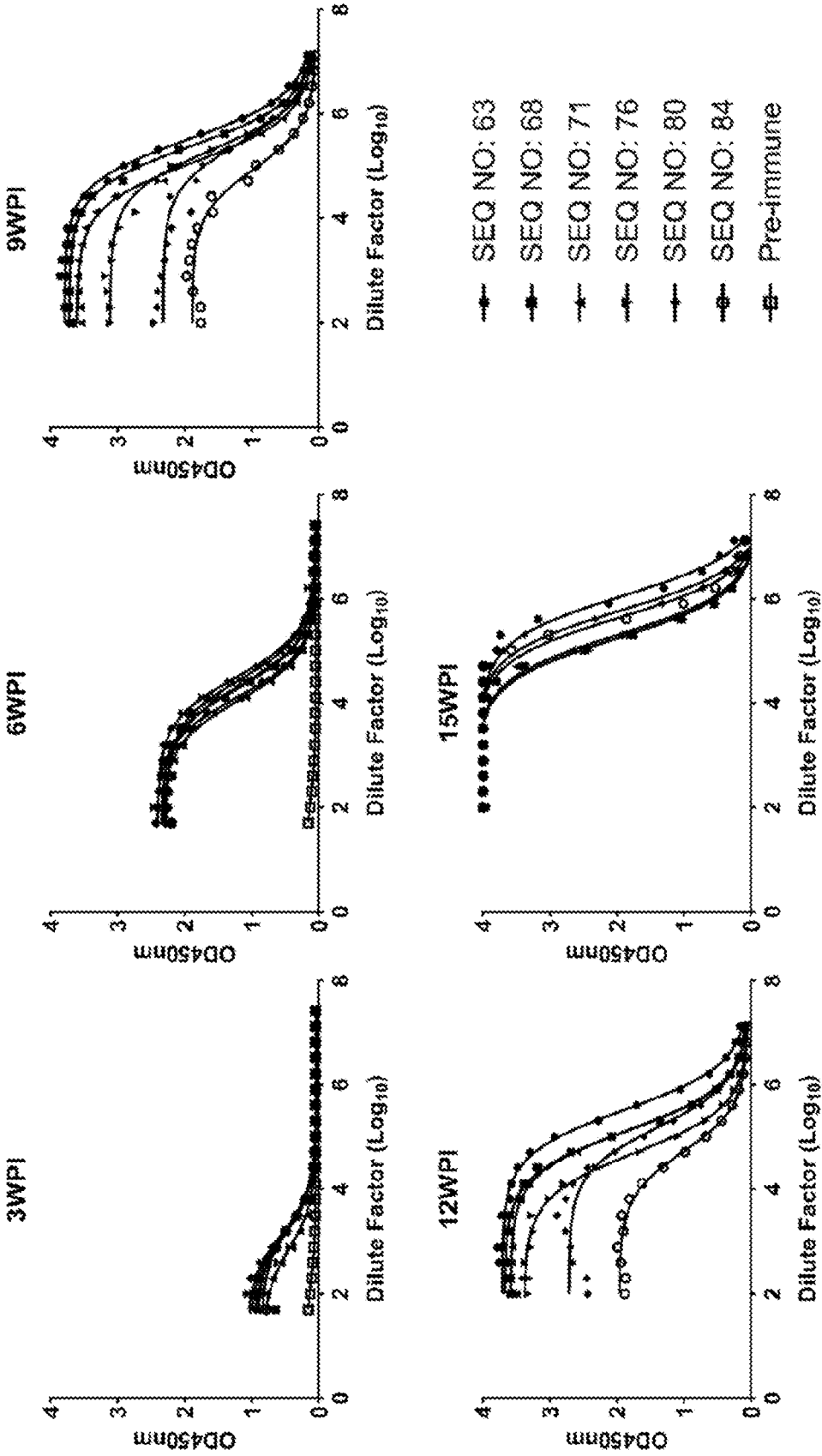


Figure 9A

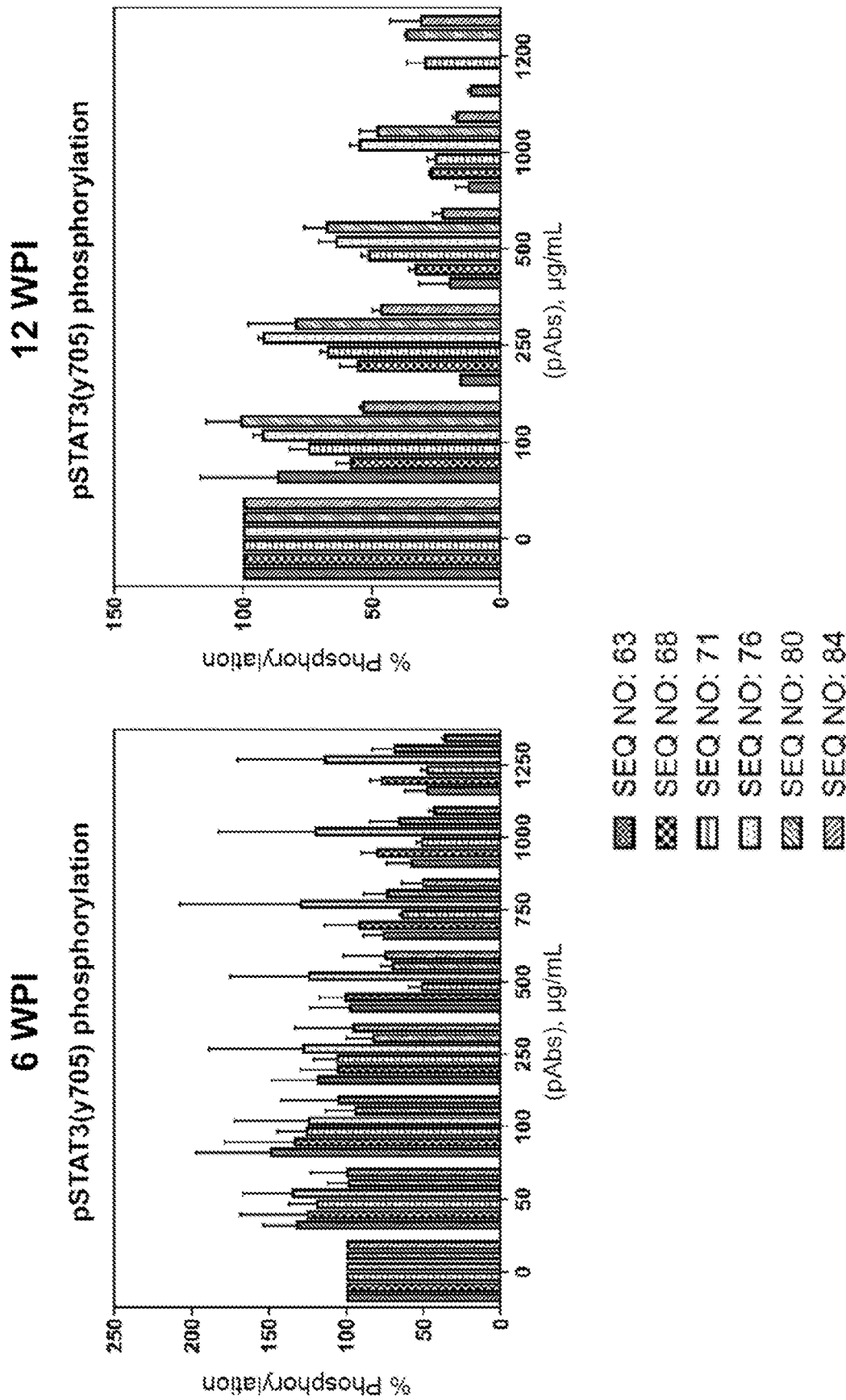


Figure 9B

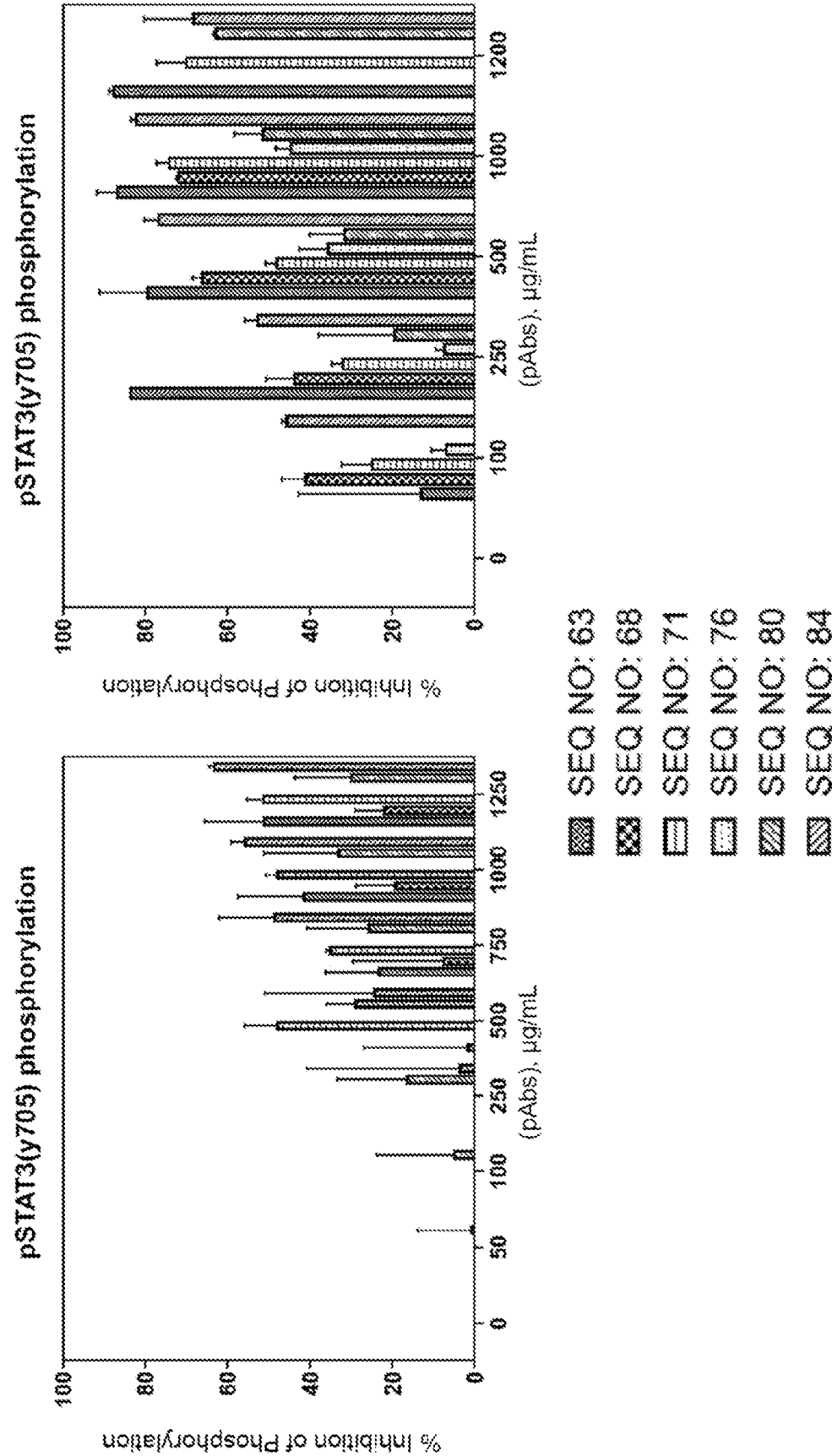


Figure 10A

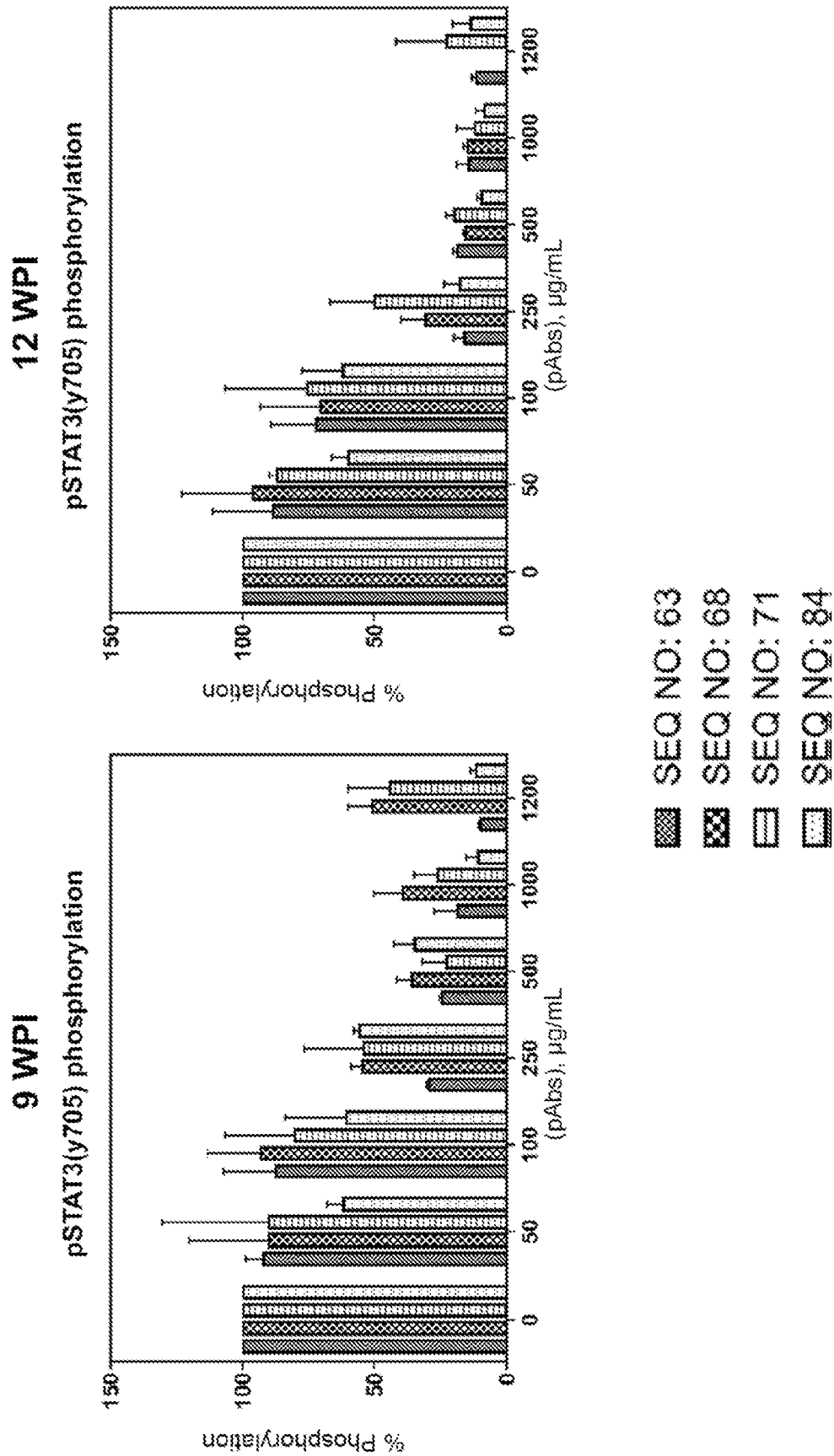


Figure 10B

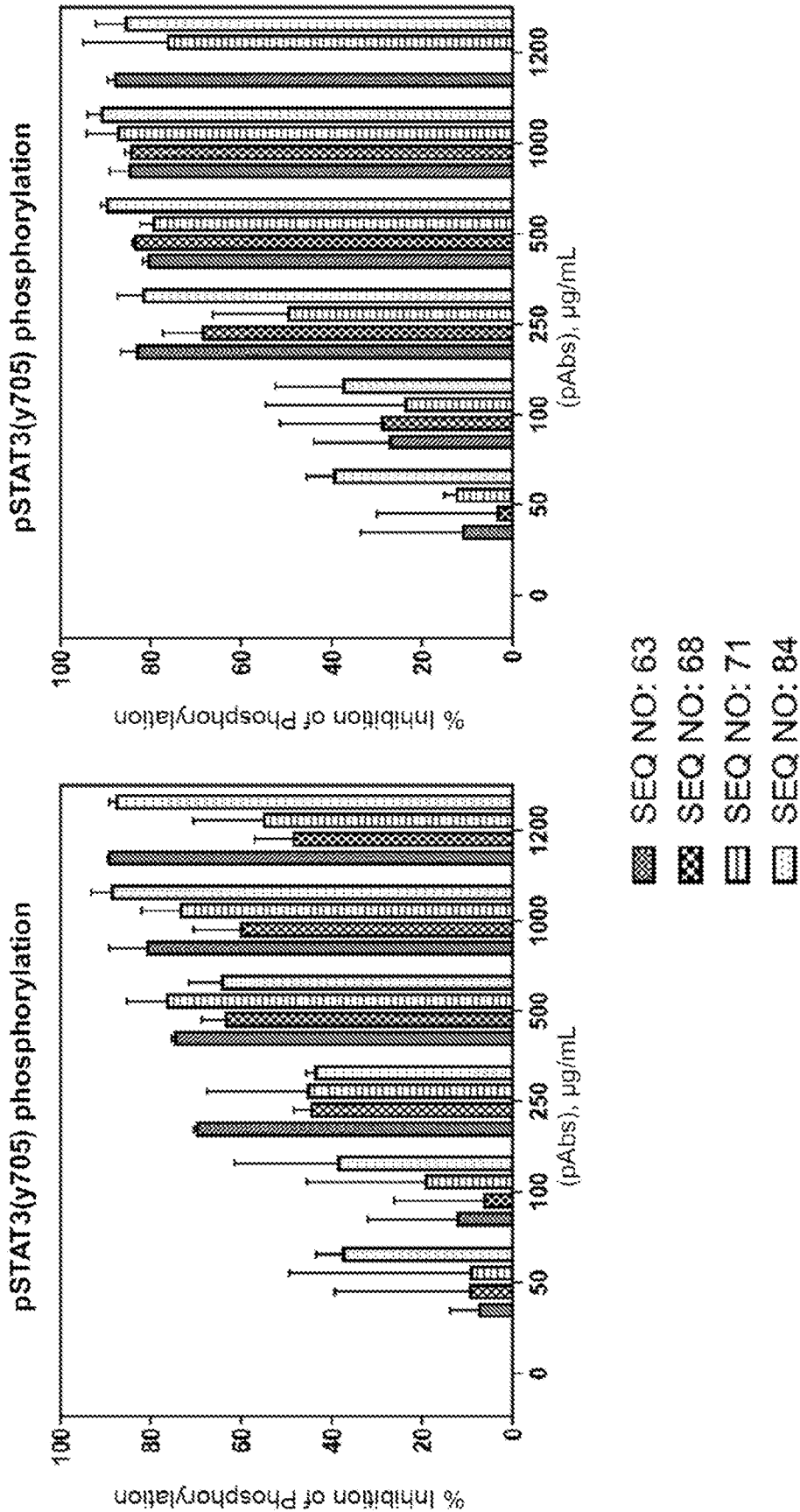
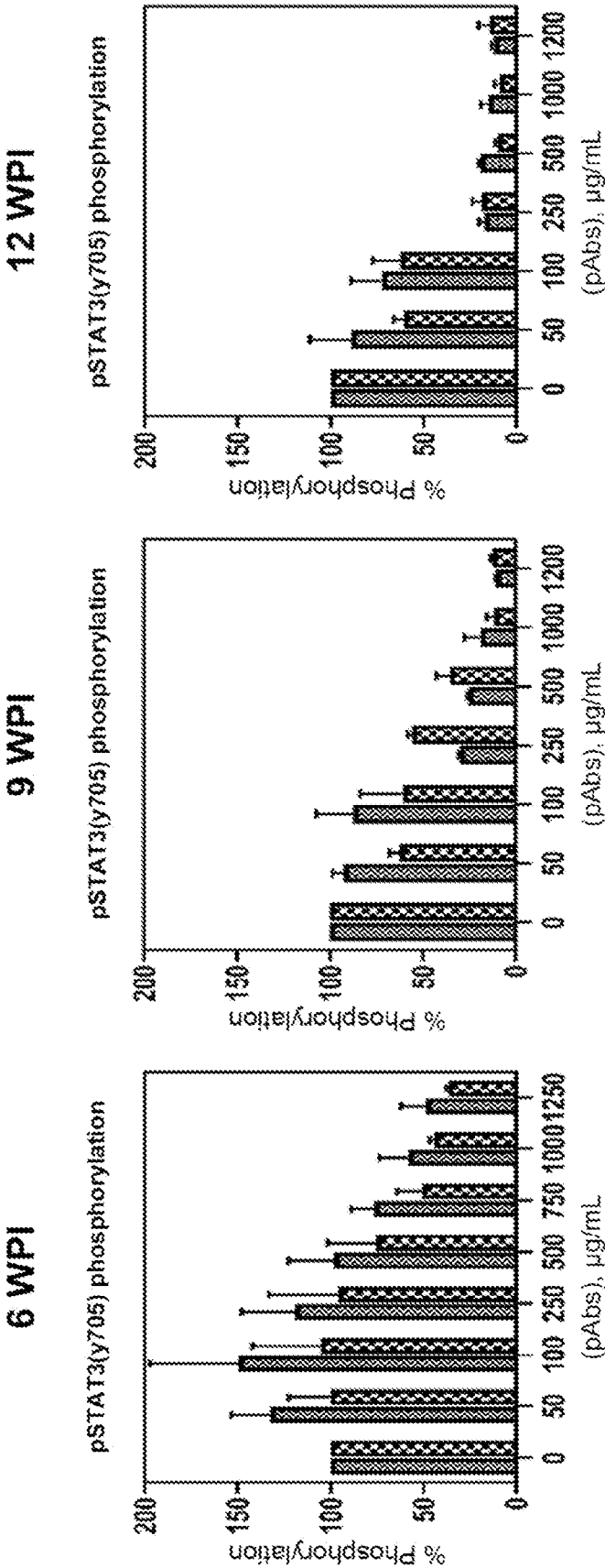


Figure 11A



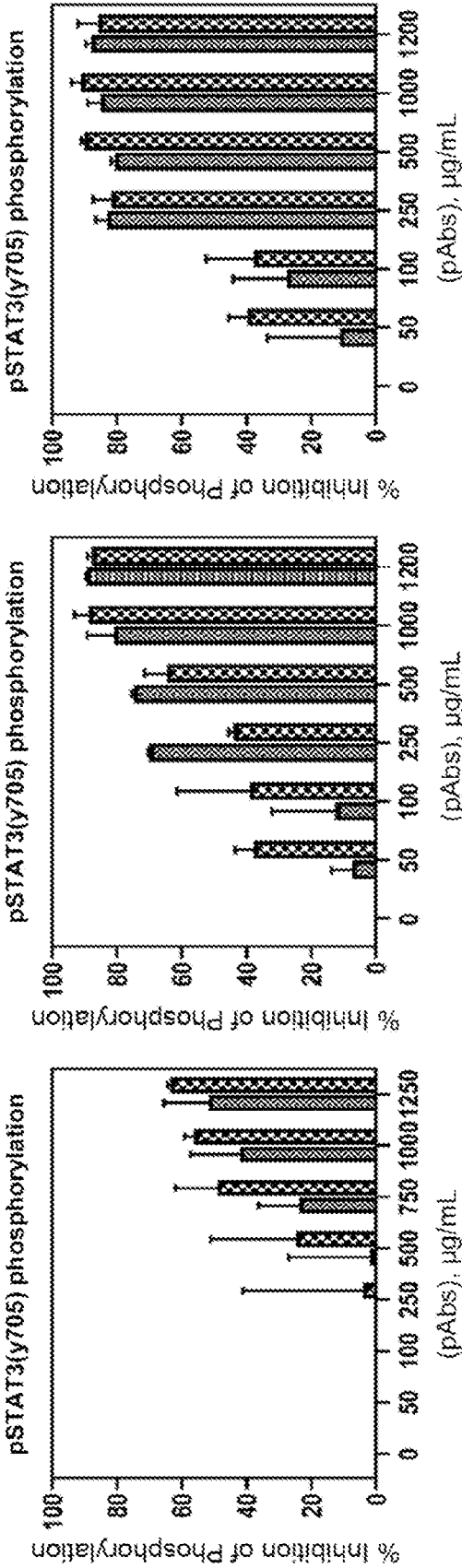
SEQ NO: 63
SEQ NO: 84

Figure 11B

6 WPI

9 WPI

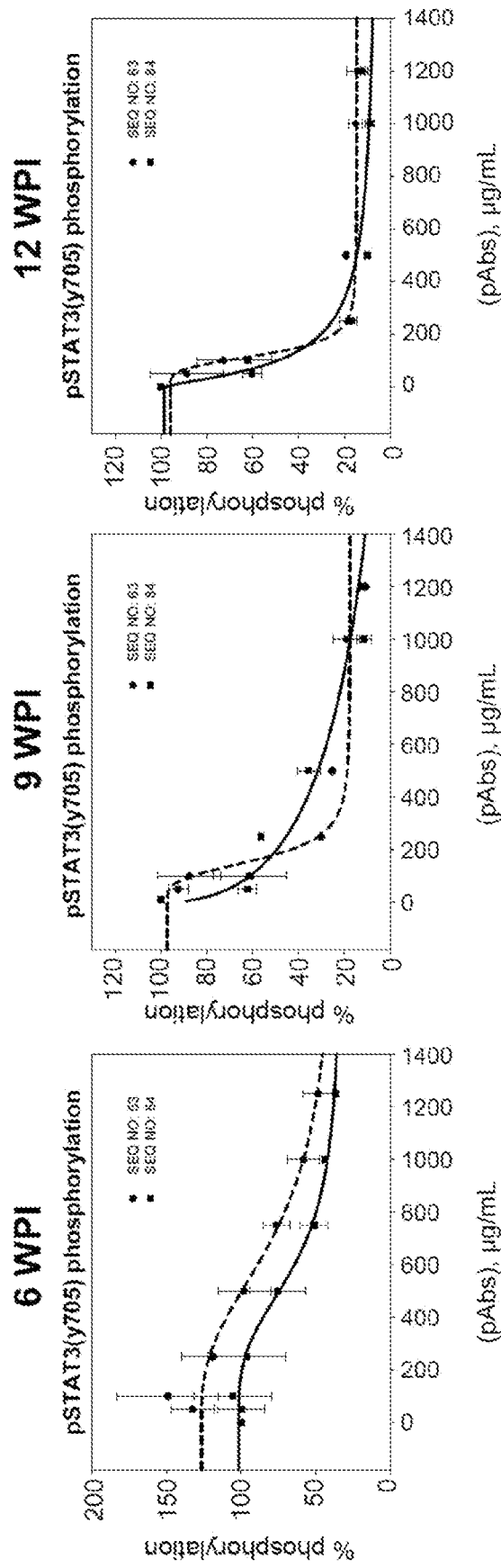
12 WPI



SEQ NO: 63

SEQ NO: 84

Figure 12

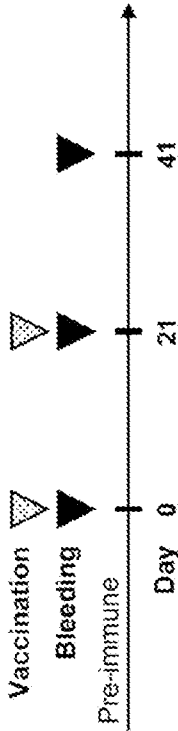


Inhibition (IC_{50}) of recombinant canine IL-31 protein induced pSTAT signaling

Immunogen	6 WPI	9 WPI	12 WPI
SEQ NO: 63	687.01 µg/mL	164.72 µg/mL	123.37 µg/mL
SEQ NO: 84	570.30 µg/mL	284.29 µg/mL	91.49 µg/mL

Figure 13

Dog Immunization protocol



Immunogen dose: Prime: 100 µg/dose, Boost: 100 µg/dose

Group	Immunogen SEQ ID NO:	Adjuvant	No. per group
1	84	LF2	8
2	84	Alum + Saponin	7

Figure 14

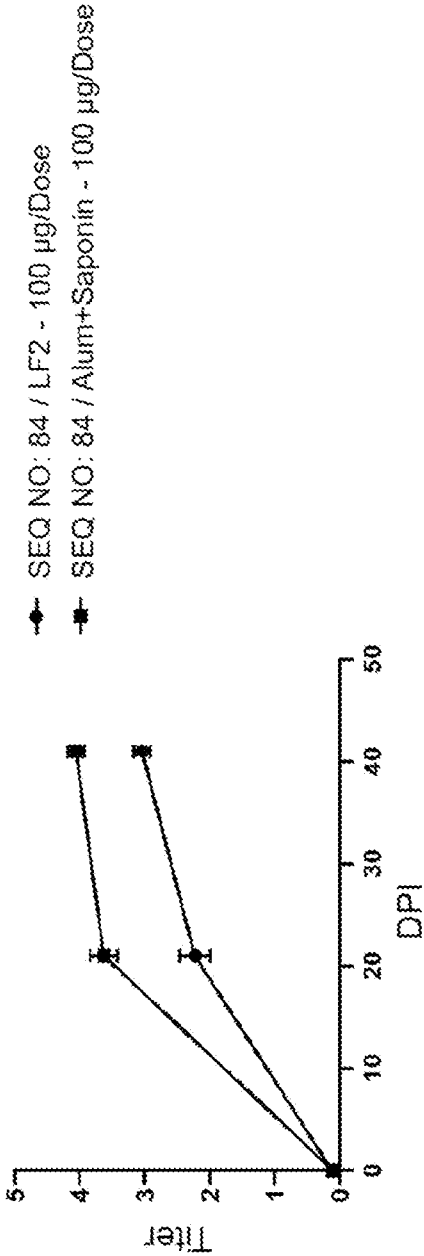


Figure 15

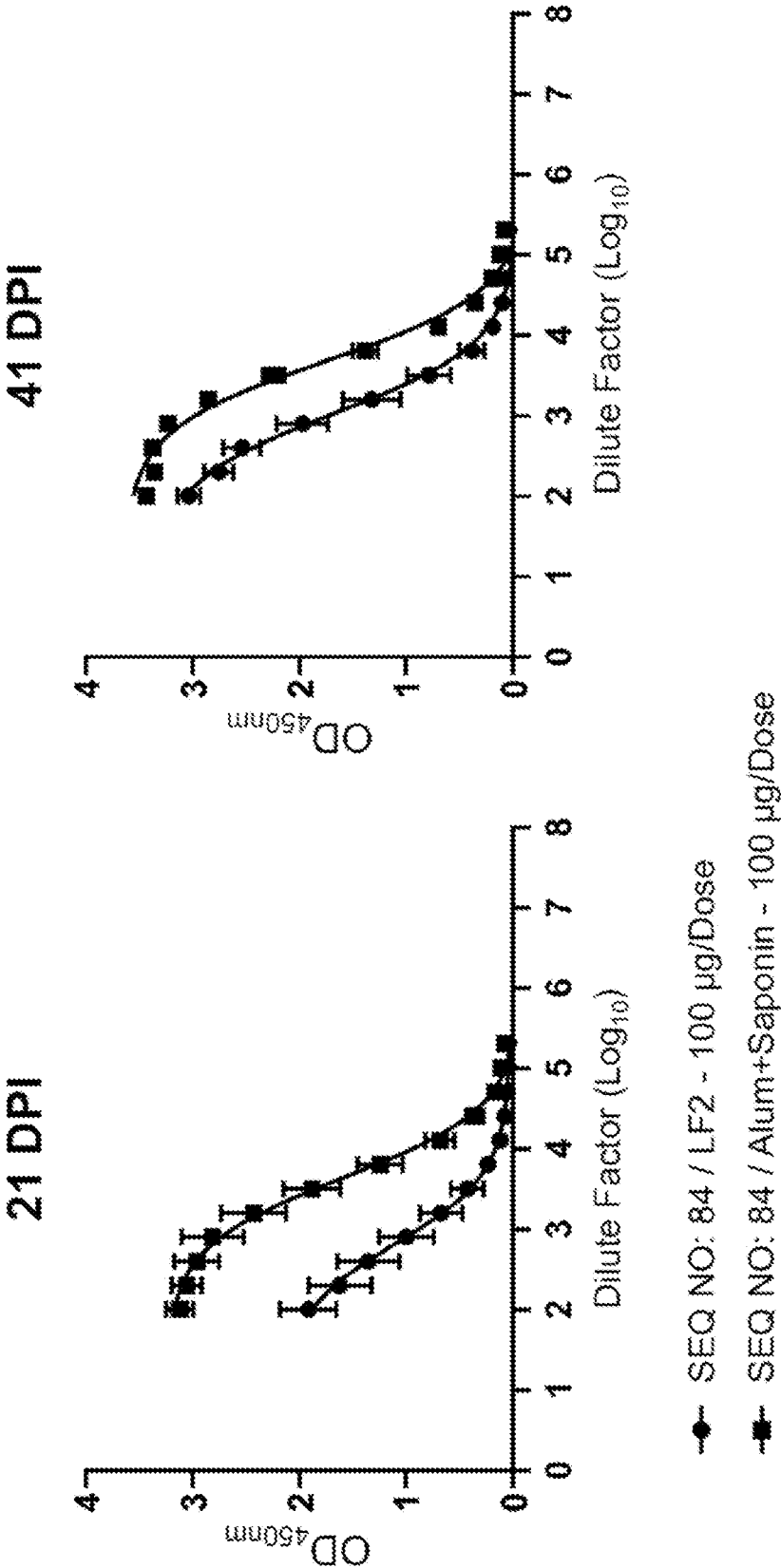


Figure 16

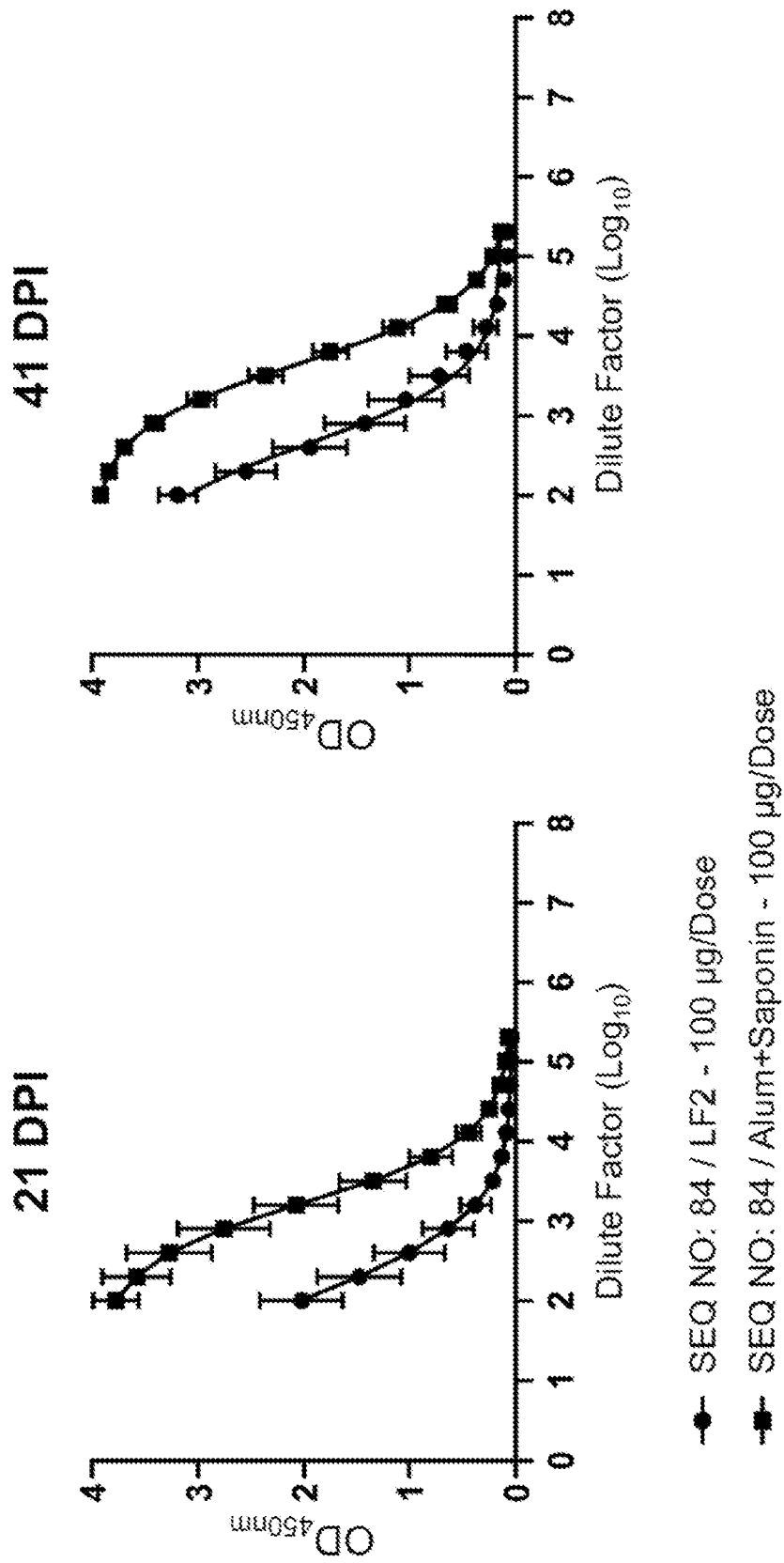


Figure 17A

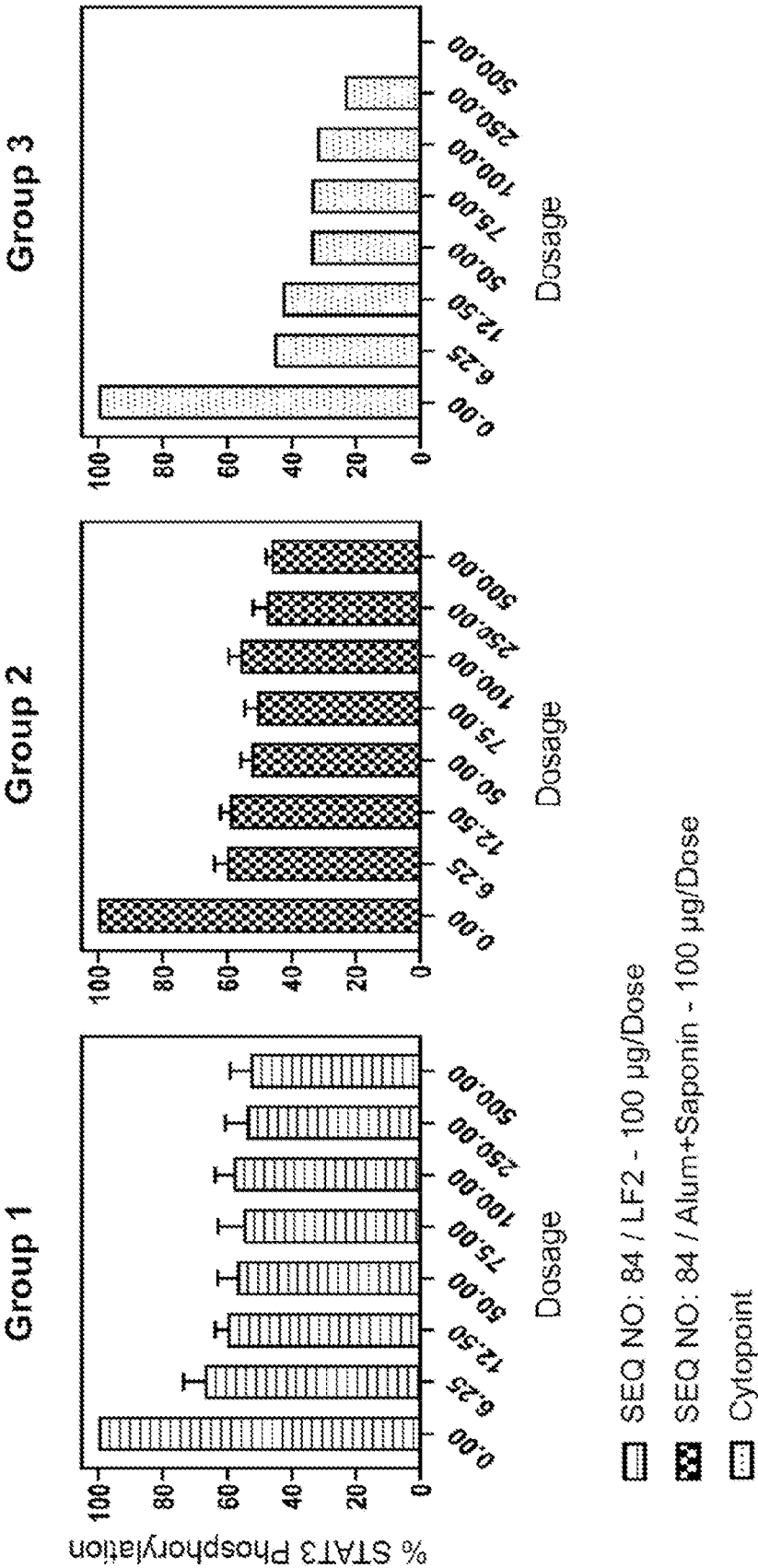


Figure 17B

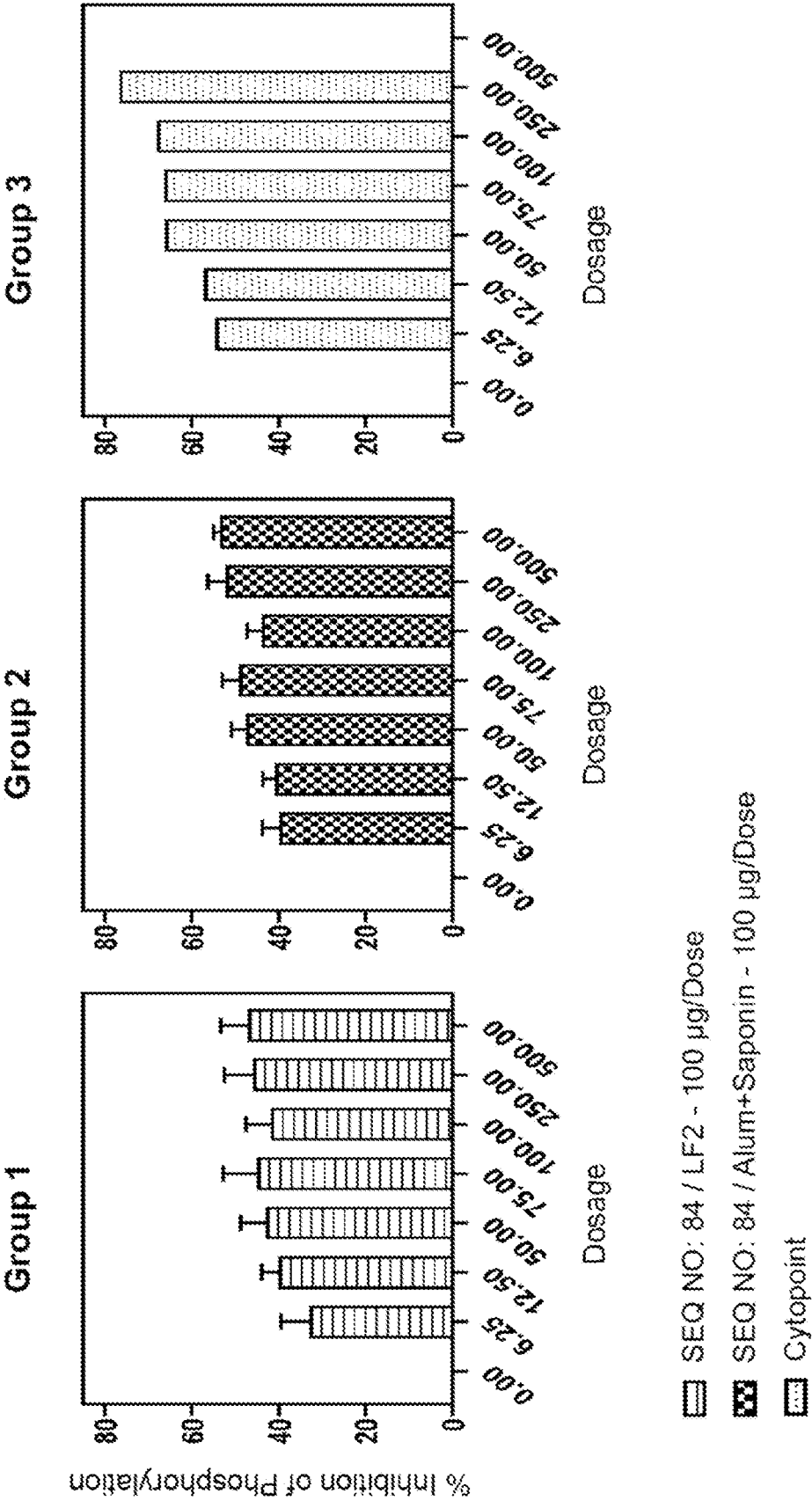


Figure 18B

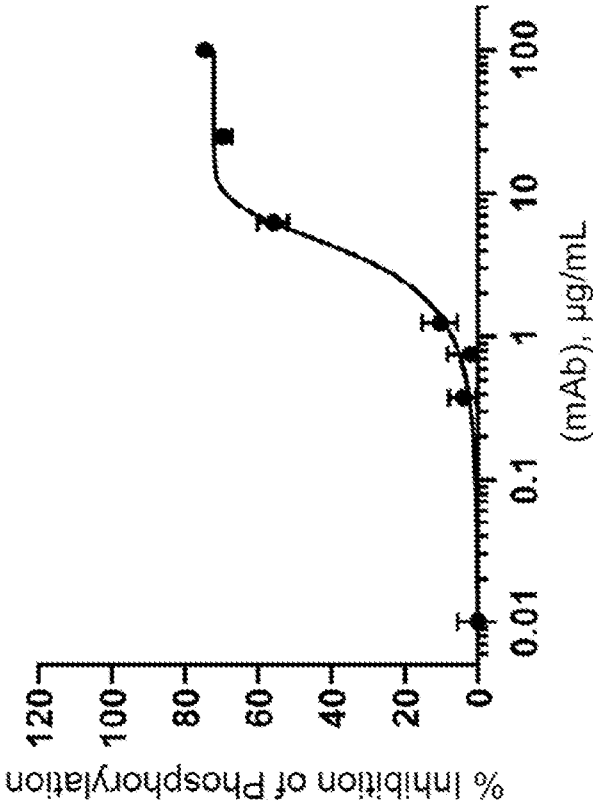


Figure 18A

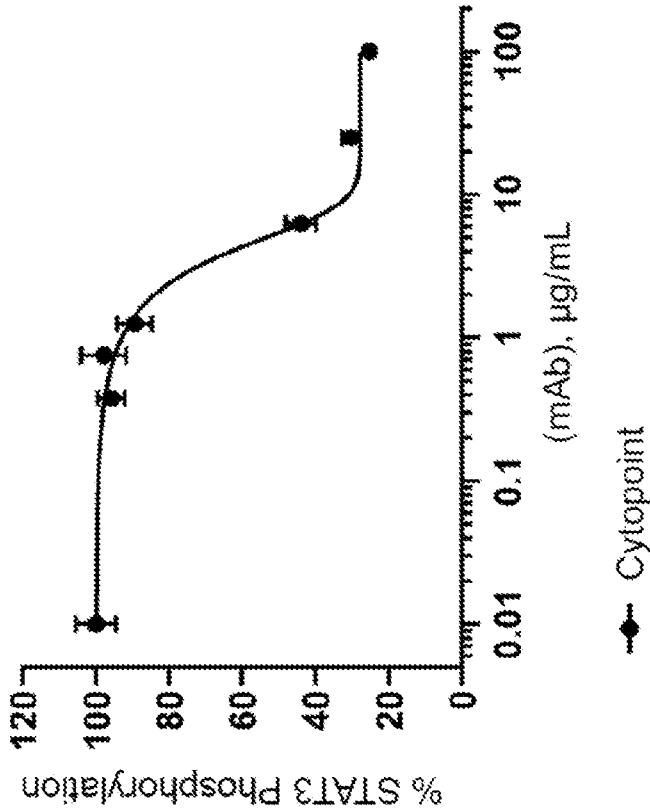


Figure 19A

Inhibition of canine IL-31 induced pSTAT signaling in canine DH82 monocytes by purified IgGs from guinea pig immune sera of 6 and 15 WPI respectively

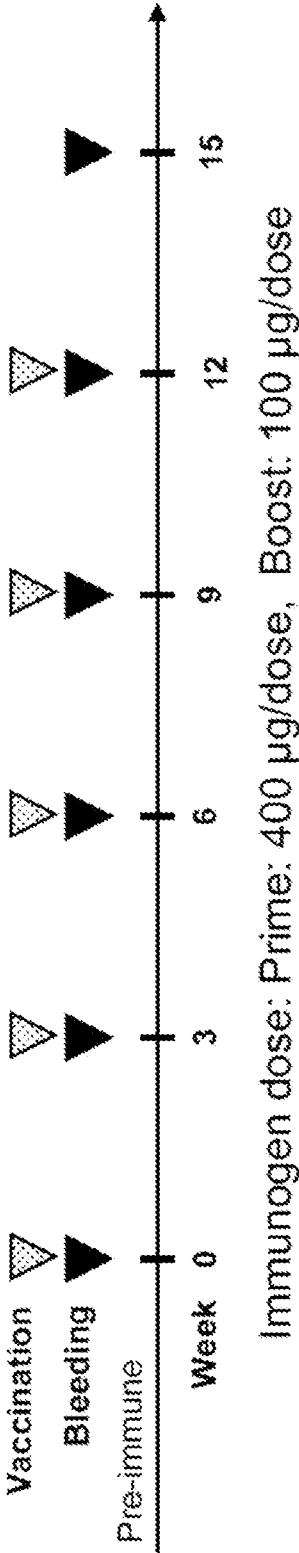


Figure 19B

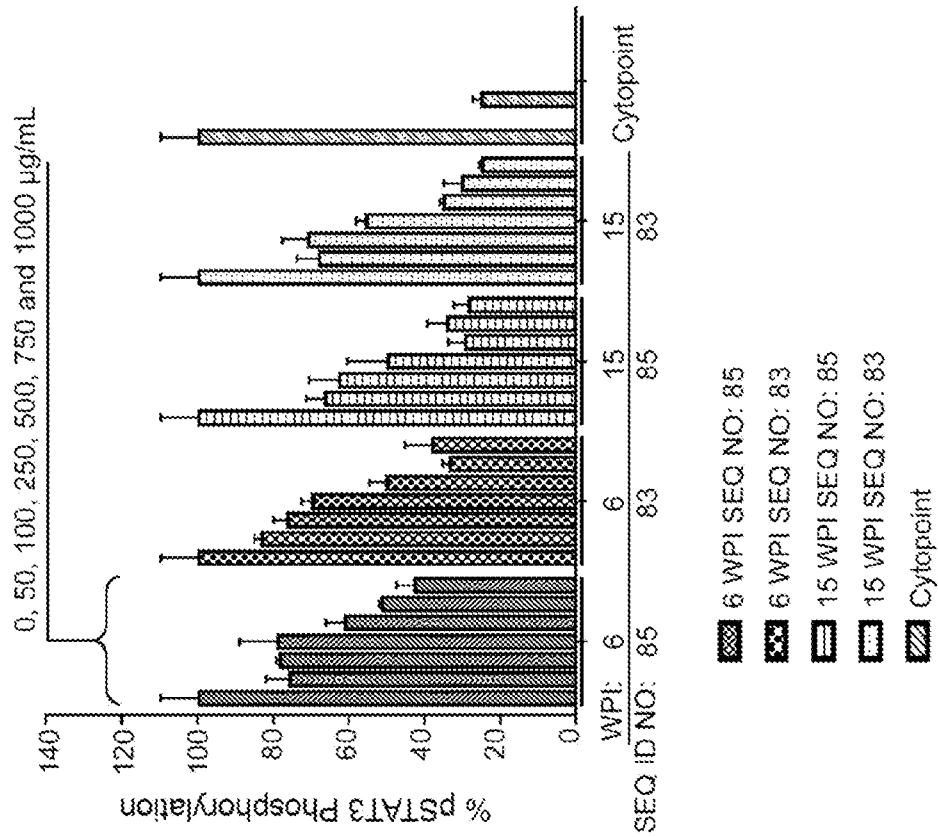
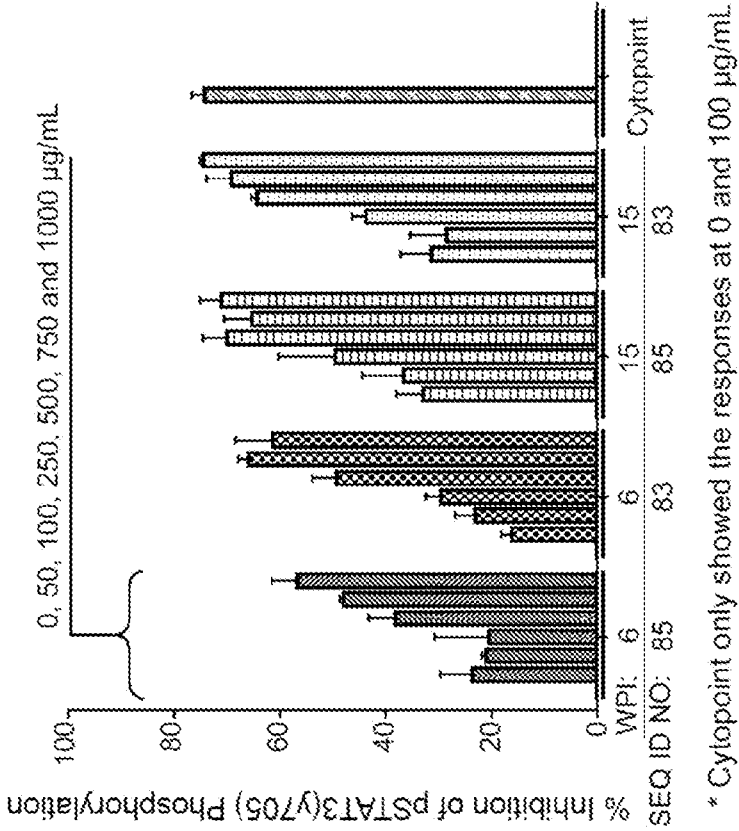


Figure 19C



* Cytoint only showed the responses at 0 and 100 µg/mL

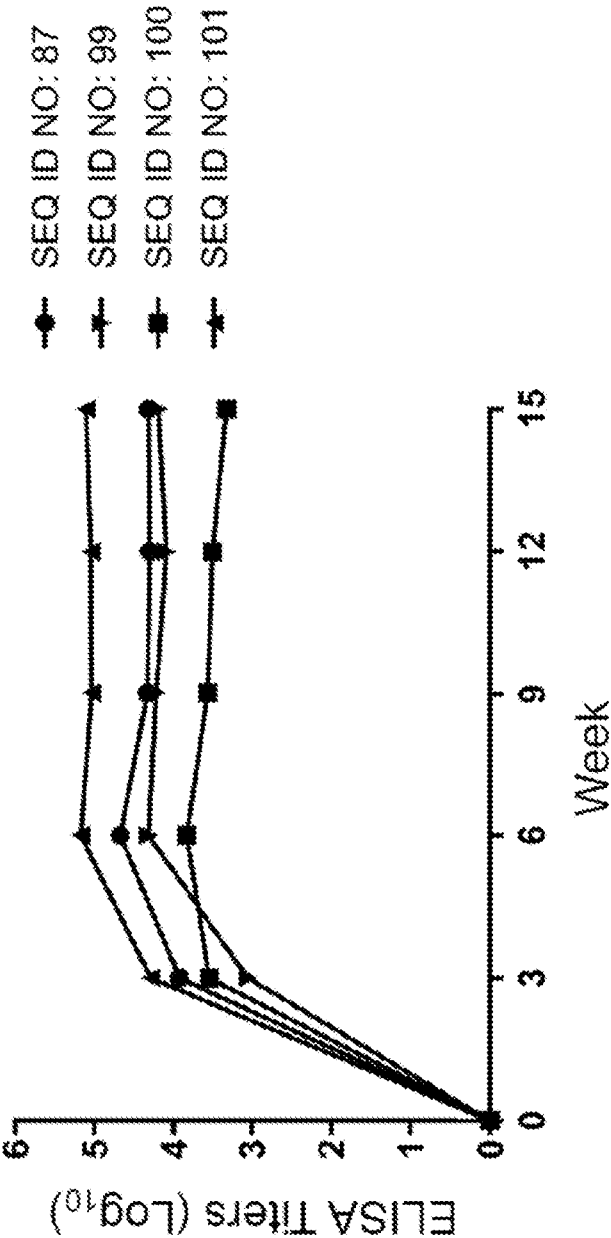
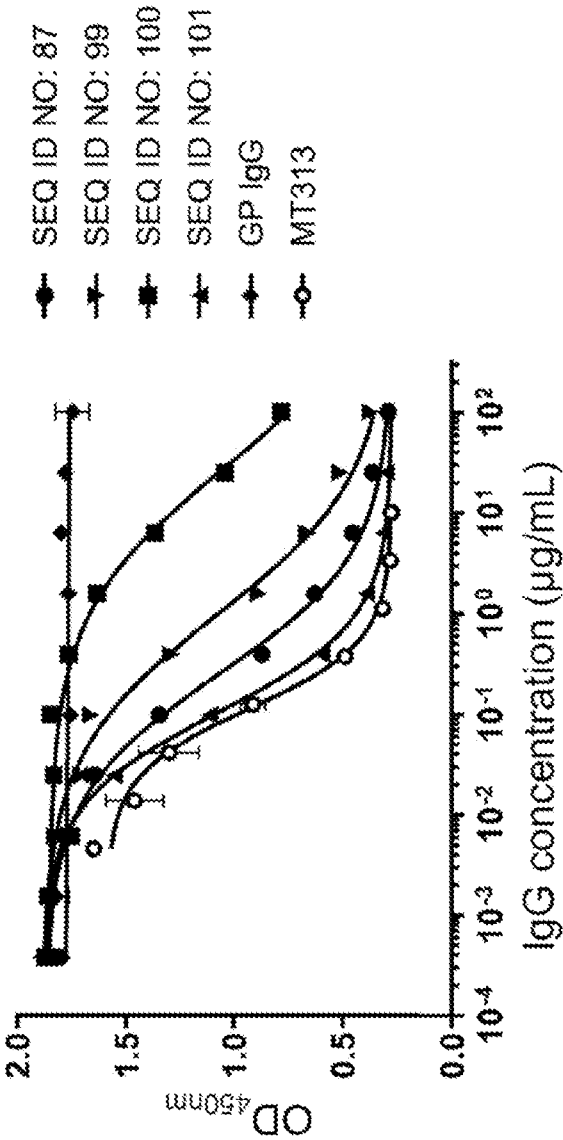


Figure 20A

Immunogen (SEQ ID NO)	LogEC ₅₀				
	3 WPI	6 WPI	9 WPI	12 WPI	15 WPI
87	3.925	4.68	4.332	4.306	4.32
99	3.05	4.321	4.225	4.093	4.198
100	3.54	3.835	3.56	3.495	3.322
101	4.29	5.176	5.037	5.046	5.11

Figure 20B

Figure 21



SEQ ID NO	IC ₅₀ (µg/mL)
87	0.2768
99	1.226
100	36.16
101	0.1872
MT313	0.1664

Figure 22

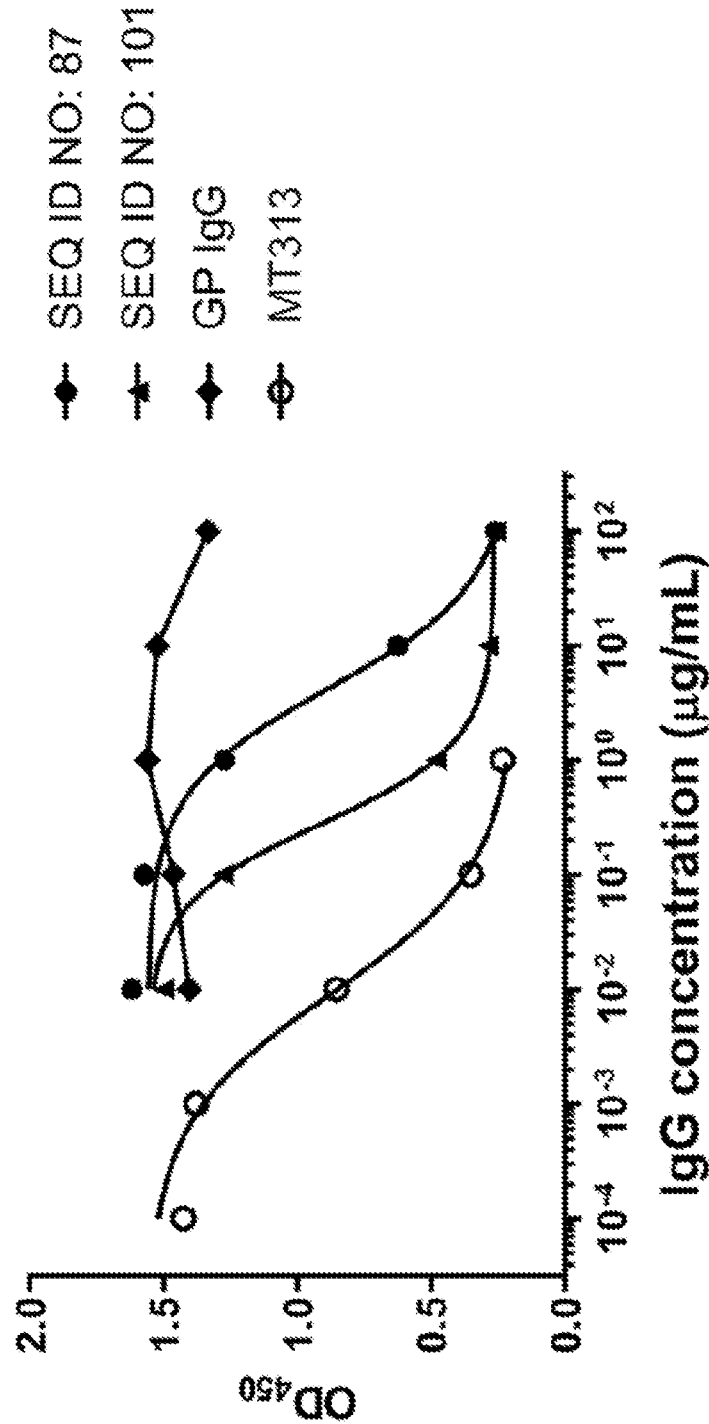
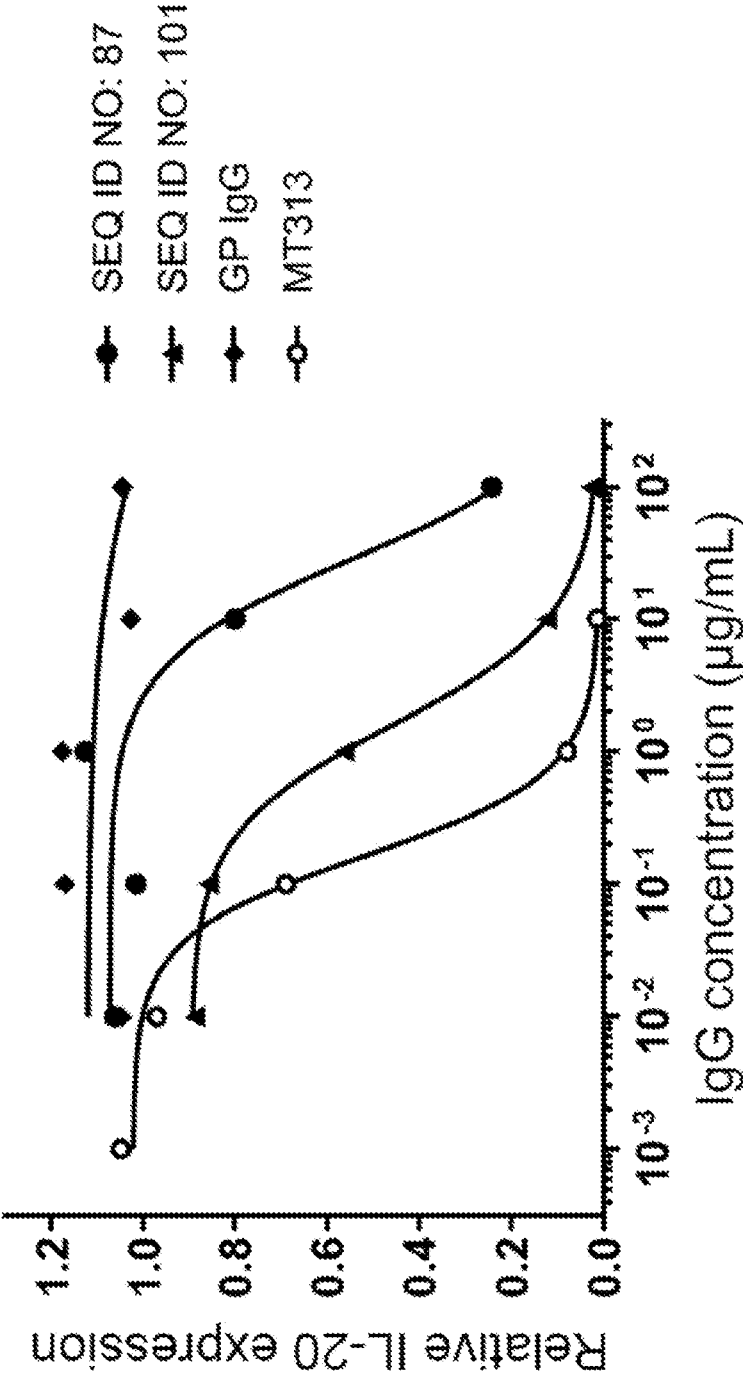


Figure 23



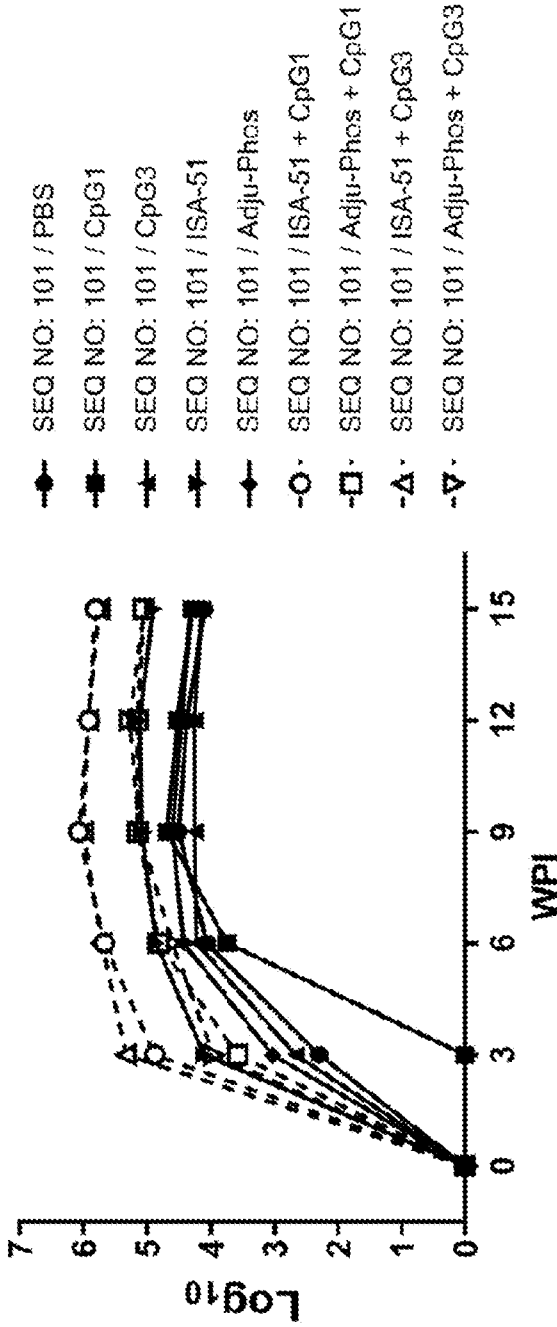


Figure 24A

Immunogen SEQ ID NO	Formulation	LogEC50				
		3 WPI	6 WPI	9 WPI	12 WPI	15 WPI
101	PBS	2.296	4.06	4.506	4.379	4.104
	CpG1	<2	3.748	4.688	4.526	4.305
	CpG3	2.668	4.226	4.254	4.259	4.137
	ISA 51	4.108	4.859	5.088	5.118	4.908
	Adju-Phos	3.029	4.428	4.604	4.462	4.303
	ISA 51 + CpG1	4.879	5.677	6.073	5.918	5.8143
	Adju-Phos + CpG1	3.578	4.816	5.15	5.149	5.056
	ISA 51 + CpG3	5.33	5.711	6.008	5.931	5.752
	Adju-Phos + CpG3	3.956	4.603	5.117	5.279	5.044

Figure 24B

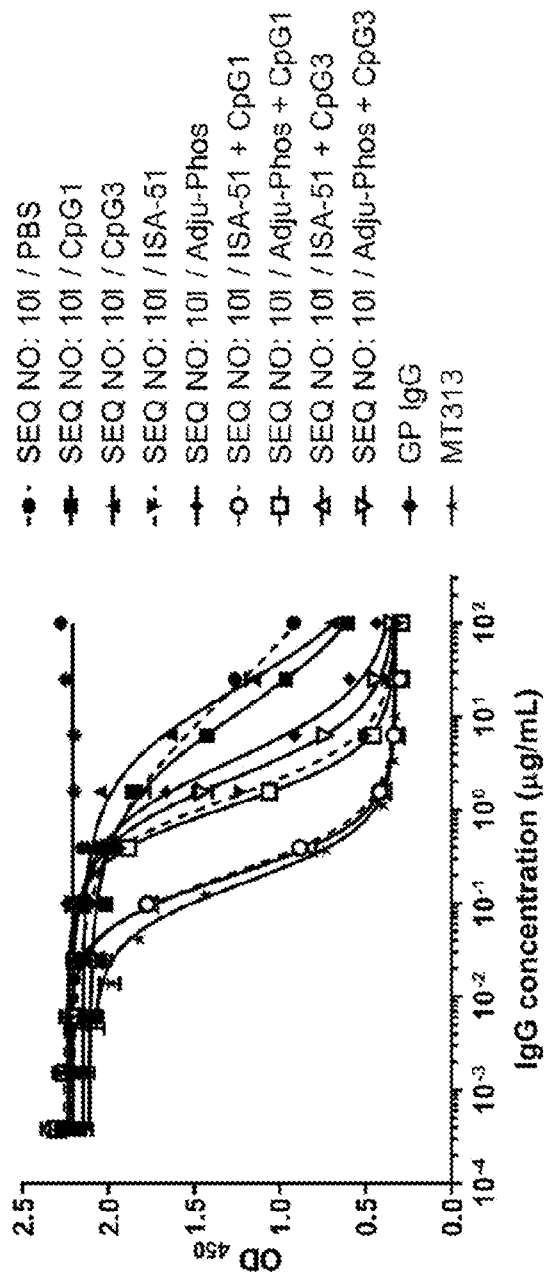


Figure 25A

Immunogen SEQ ID NO	Formulation	IC ₅₀ (µg/mL)
101	PBS	19.9
	CpG1	11.77
	CpG3	20.5
	ISA 51	1.375
	Adju-Phos	3.42
	ISA 51 + CpG1	0.2036
	Adju-Phos + CpG1	1.11
	ISA 51 + CpG3	0.1965
	Adju-Phos + CpG3	2.173
MT313	-	0.1664

Figure 25B

Figure 26

