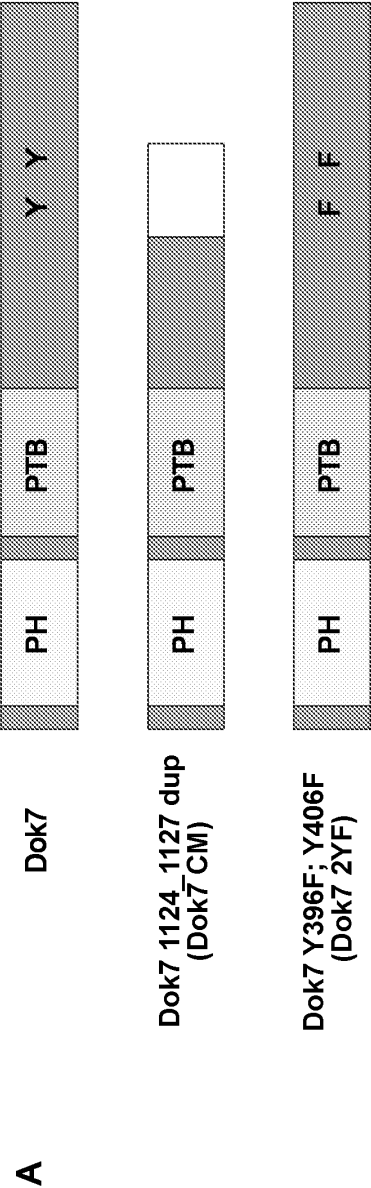


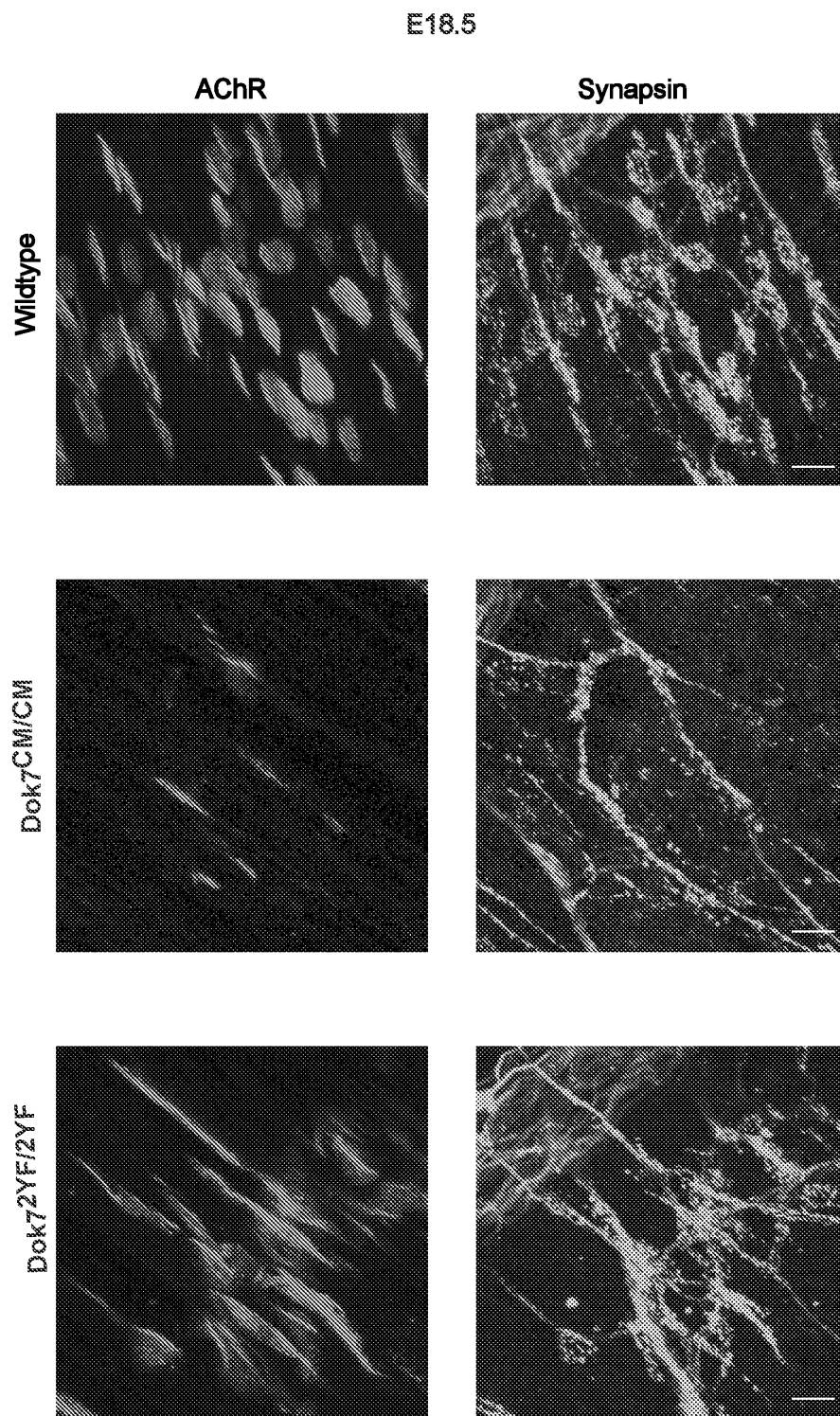


B

C57BL/6 Mice	Observed	Expected	χ^2
Wildtype	12	10	0.66
Dok7 ^{CM/+}	26	19	2.58
Dok7 ^{CM/CM}	1	10	8.10
		Total χ^2	11.08
		P-value	0.001

C57BL/6 Mice	Observed	Expected	χ^2
Wildtype	18	14	1.14
Dok7 ^{2YF/+}	23	28	0.89
Dok7 ^{2YF/2YF}	15	14	0.07
		Total χ^2	2.11
		P-value	0.34

FIGs. 1A-1B

**FIG. 1C**

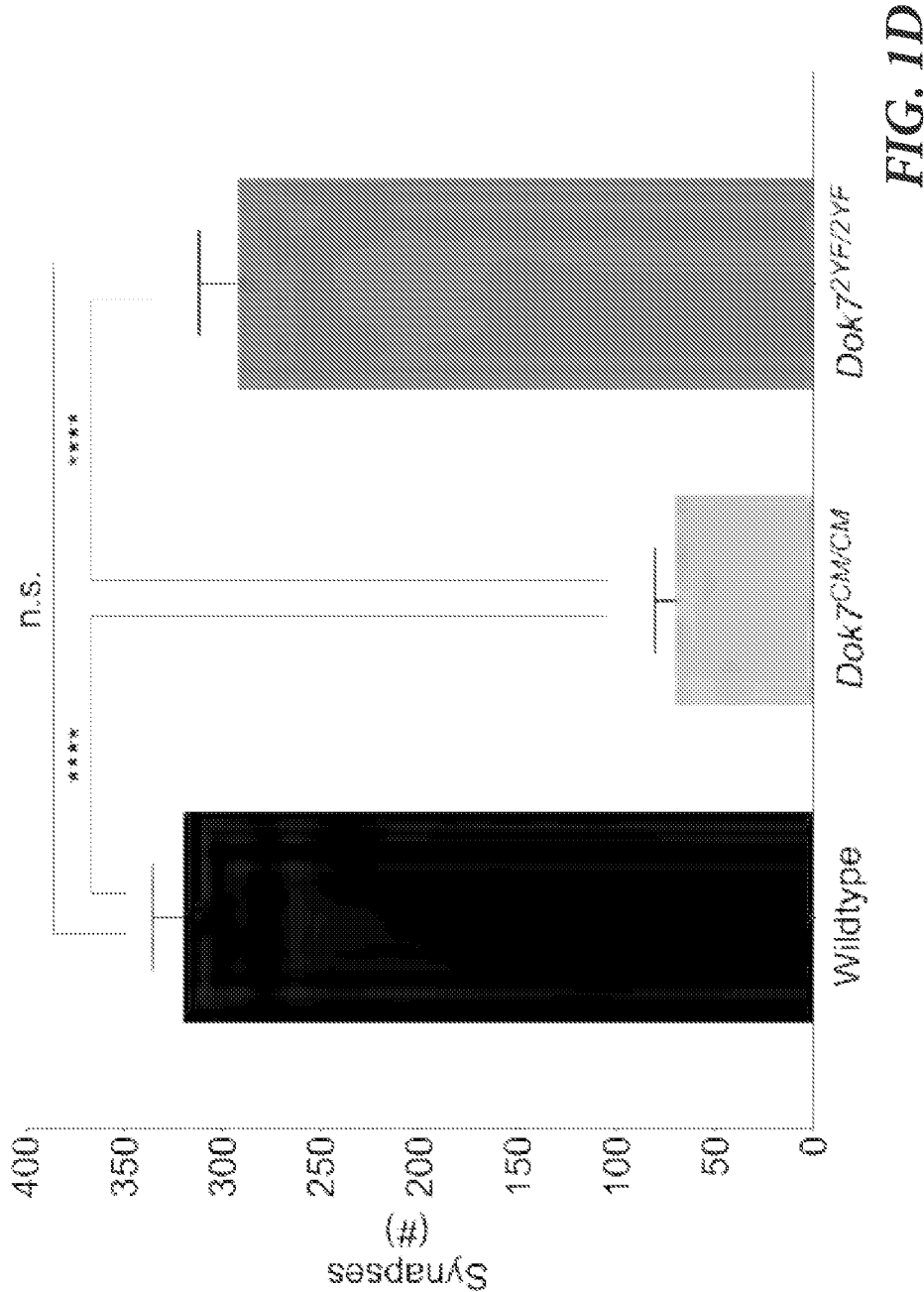
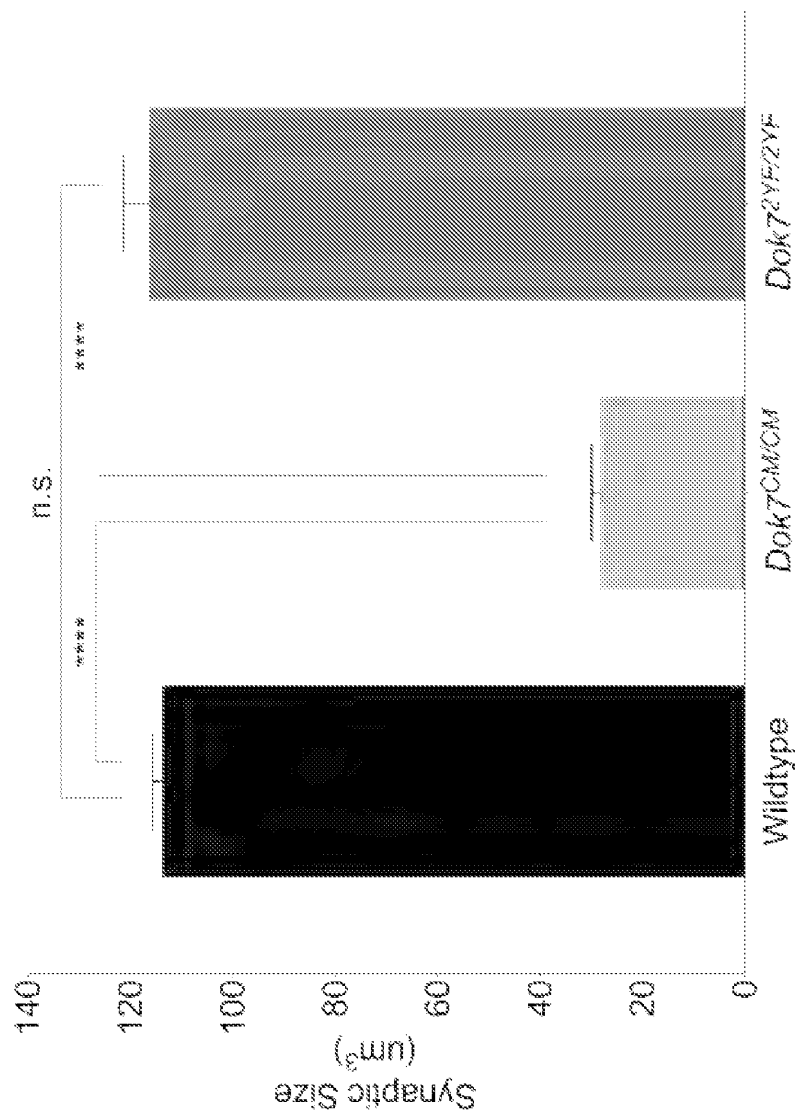
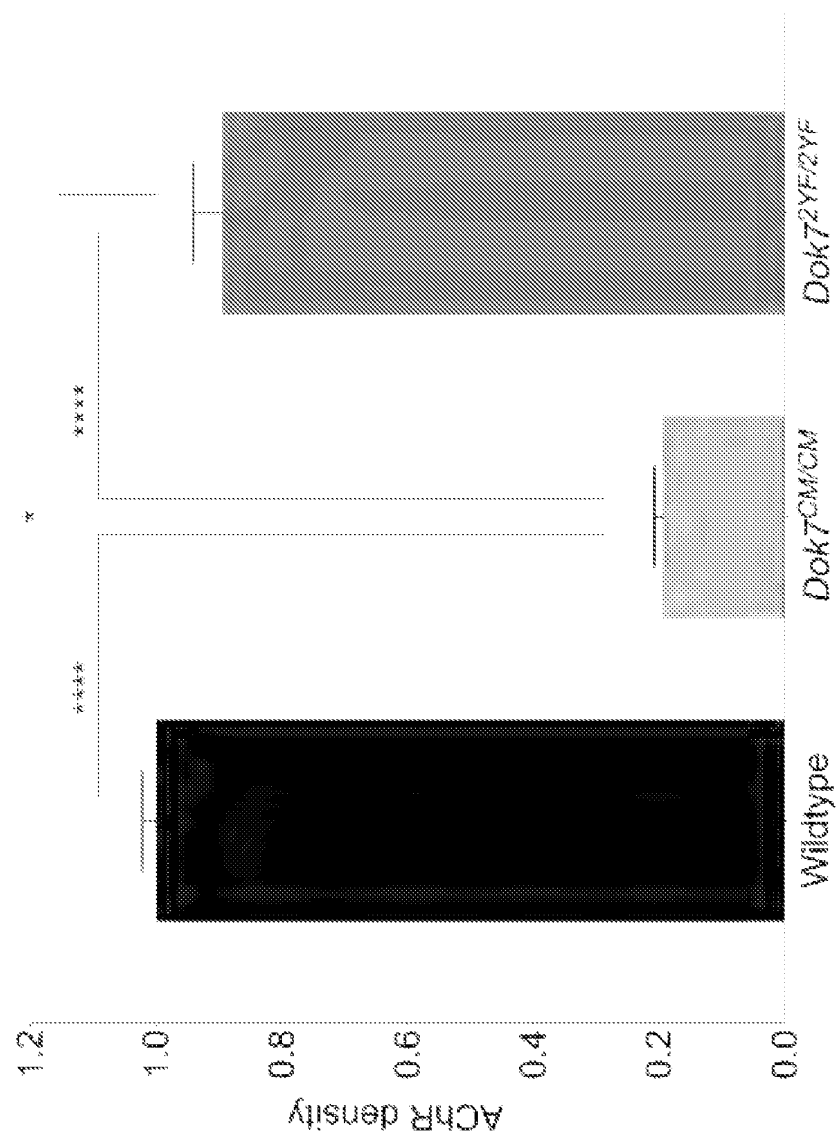
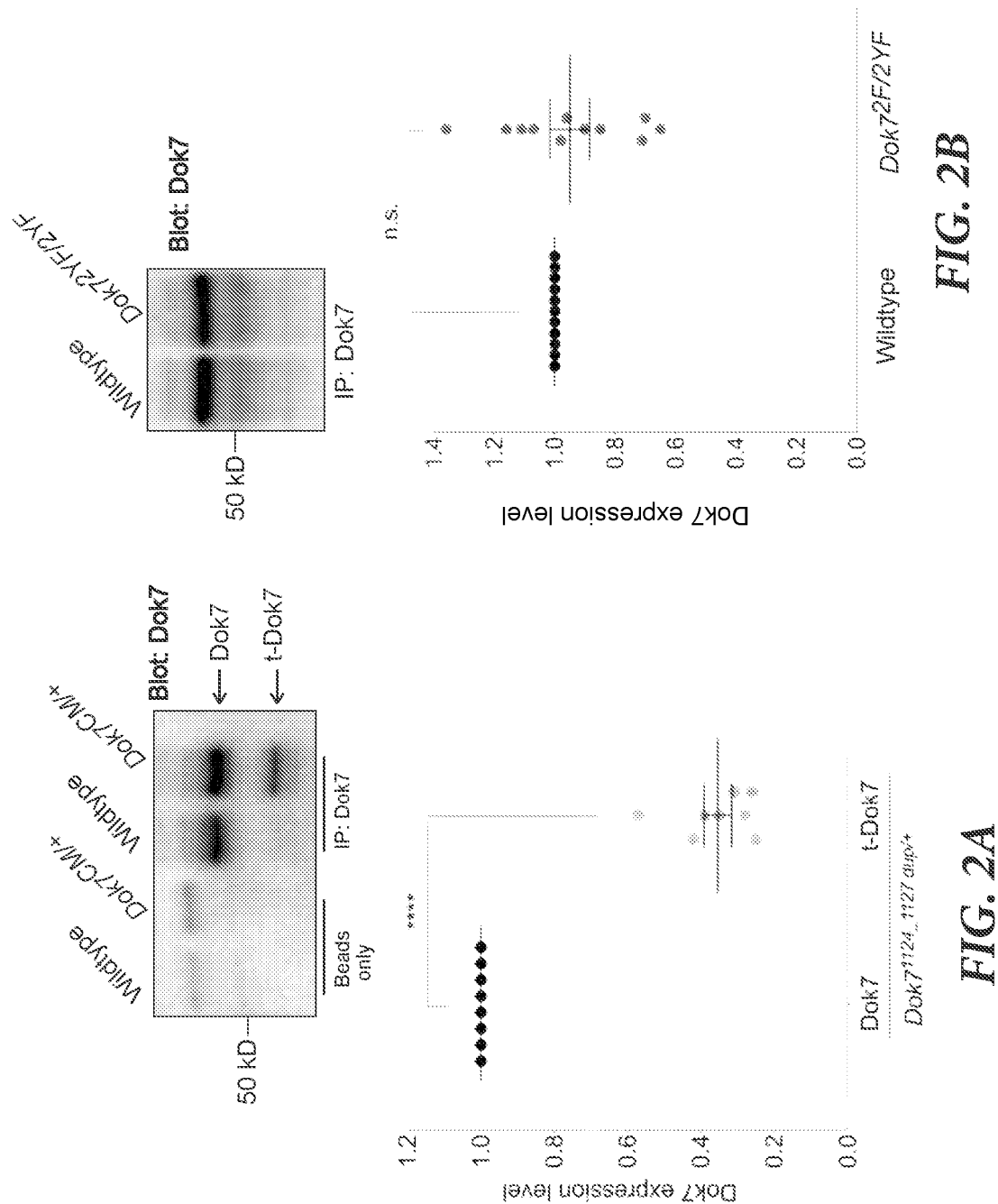


FIG. 1D

*FIG. 1D (continued)*

**FIG. 1D (continued)**



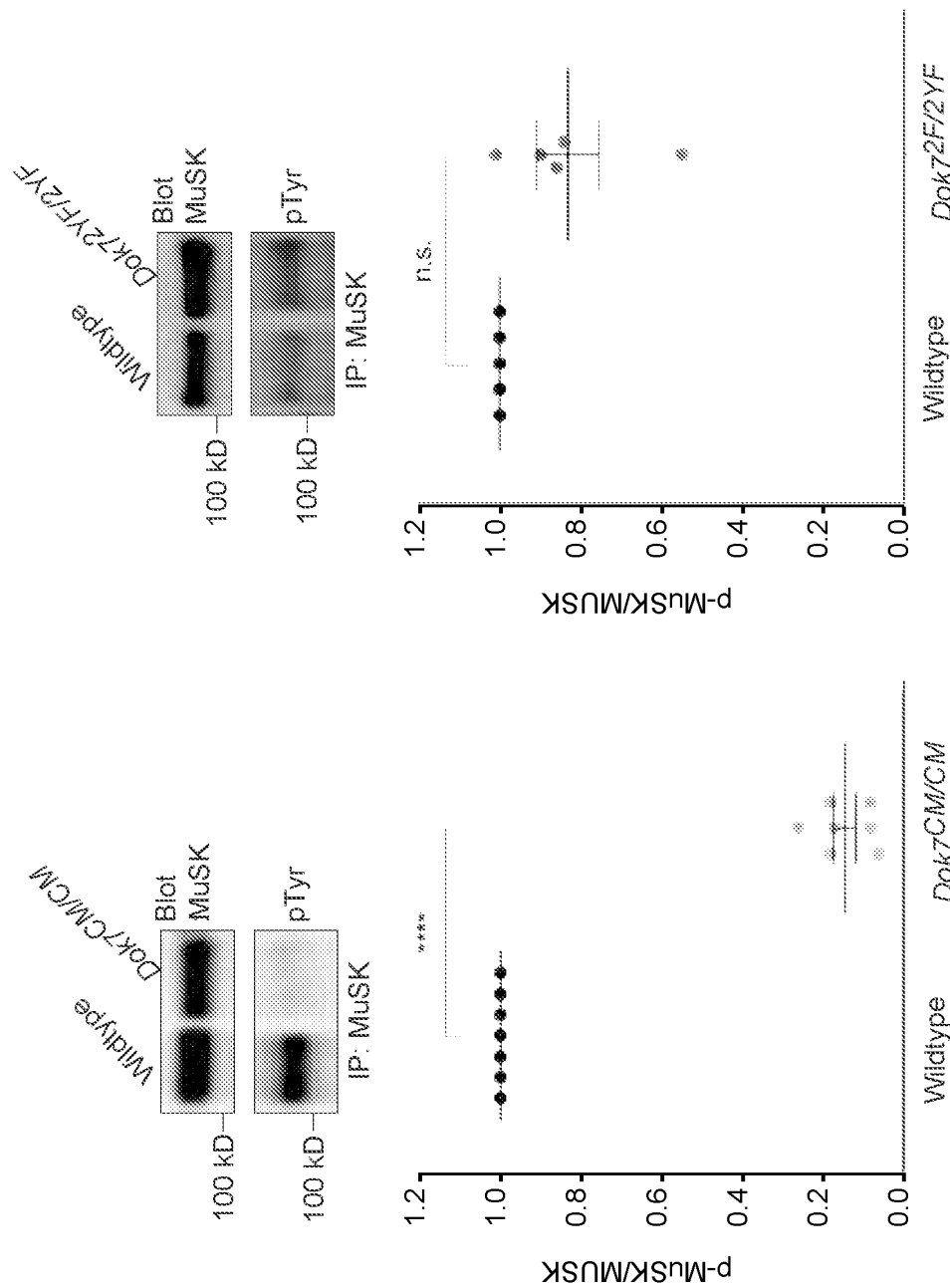


FIG. 2C

FIG. 2D

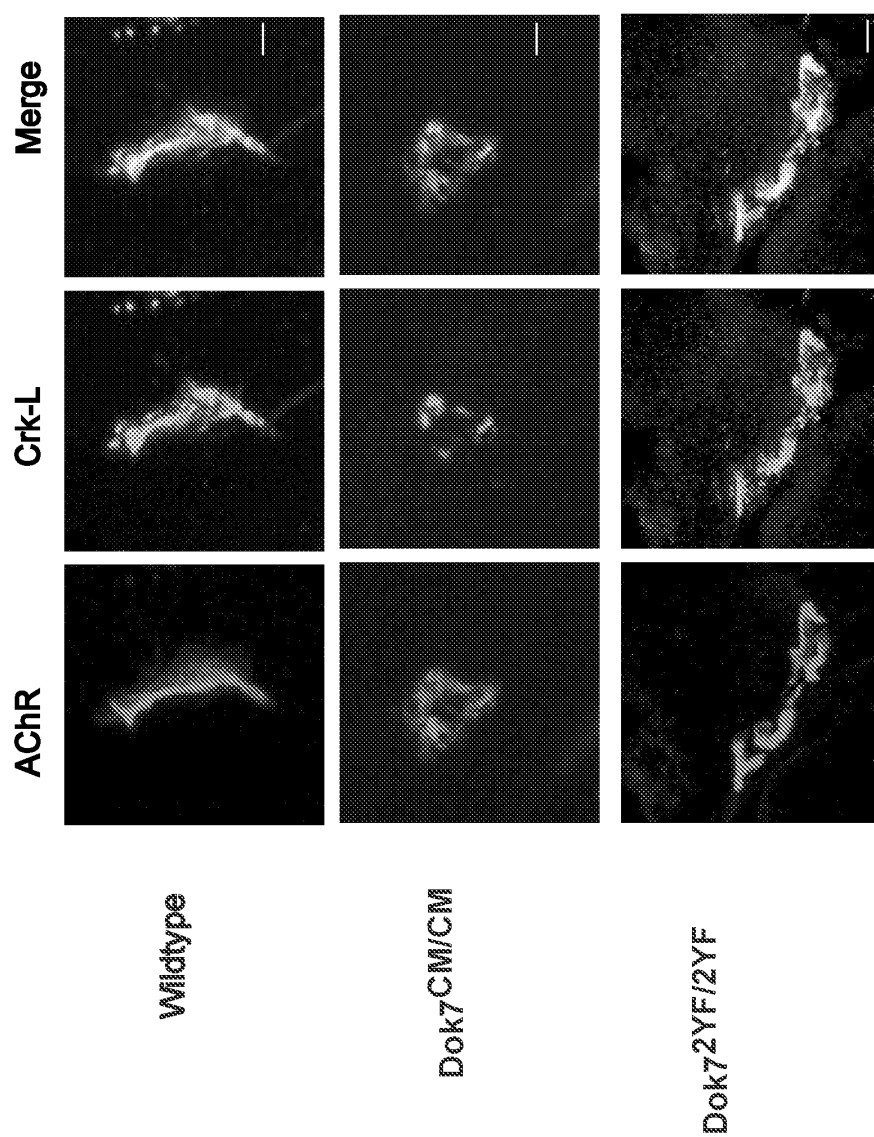
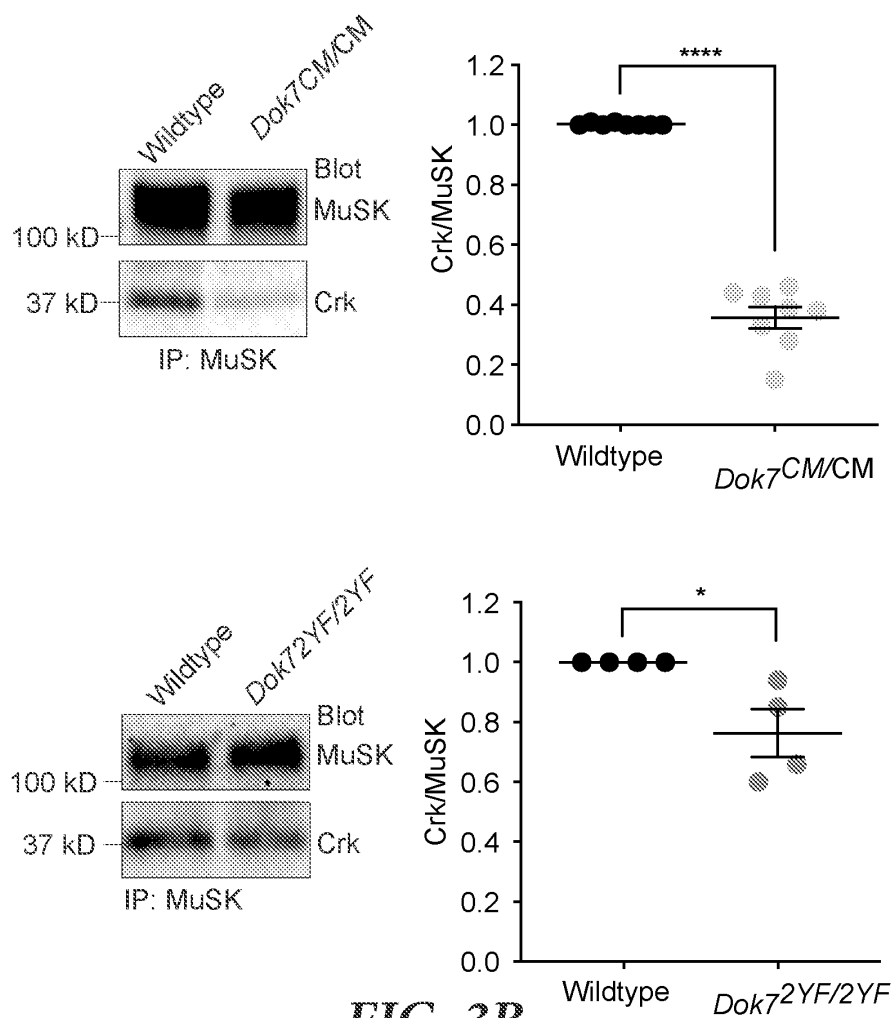
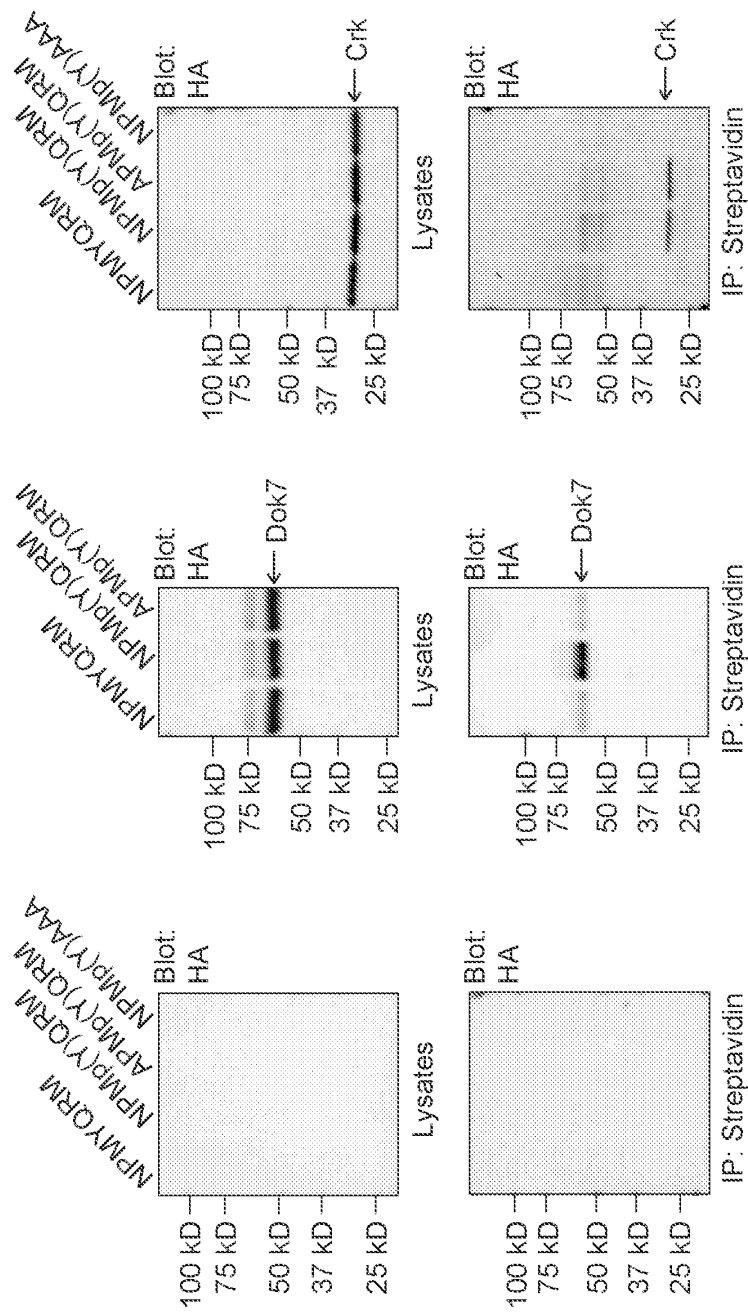


FIG. 3A

**FIG. 3B**

Dok7 binding site
 MuSK: 541 ELLLDRLHPNPMYQRMPLLL 560
 Potential Crk binding site

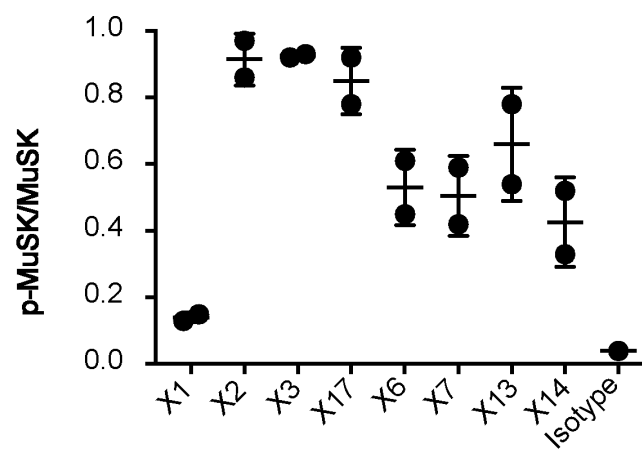
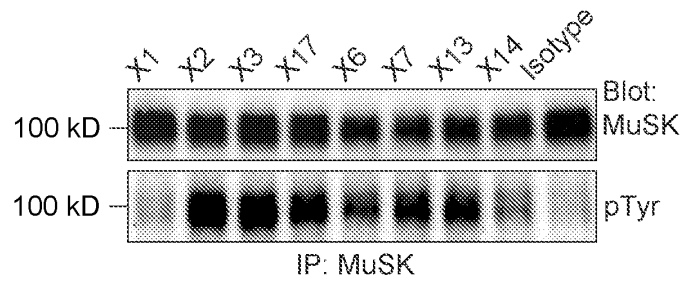
FIG. 3C

**FIG. 3D**

Fab Clone	Antigen			
	hFz	hECD	mFz	mECD
X1	0.39 ± 0.05	0.55 ± 0.06	1.09 ± 0.07	1.34 ± 0.07
X2	0.53 ± 0.04	0.86 ± 0.11	0.45 ± 0.08	0.70 ± 0.03
X3	0.11 ± 0.01	0.16 ± 0.02	0.29 ± 0.02	0.40 ± 0.03
X6	0.90 ± 0.08	1.47 ± 0.12	0.42 ± 0.02	0.59 ± 0.06
X7	4.5 ± 0.4	6.0 ± 0.4	12.0 ± 1.20	16.2 ± 1.2
X8	1.4 ± 0.2	1.69 ± 0.14	4.7 ± 0.5	44 ± 14
X13	1.7 ± 0.2	2.39 ± 0.17	1.56 ± 0.18	2.41 ± 0.19
X14	0.31 ± 0.10	0.53 ± 0.07	8.0 ± 1.9	4.1 ± 0.6
X17	0.38 ± 0.05	0.52 ± 0.07	0.47 ± 0.02	0.63 ± 0.04

K_D values in nM.

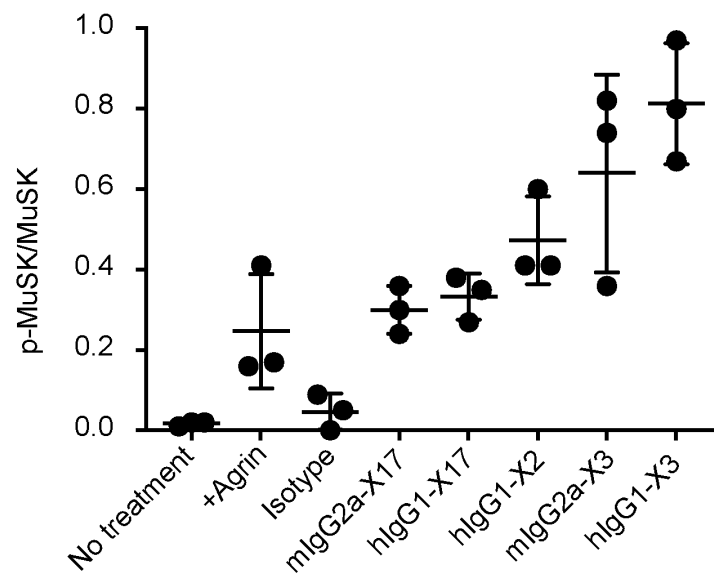
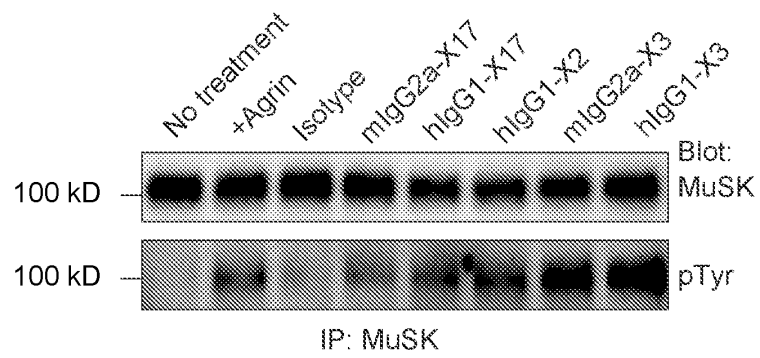
FIG. 4A

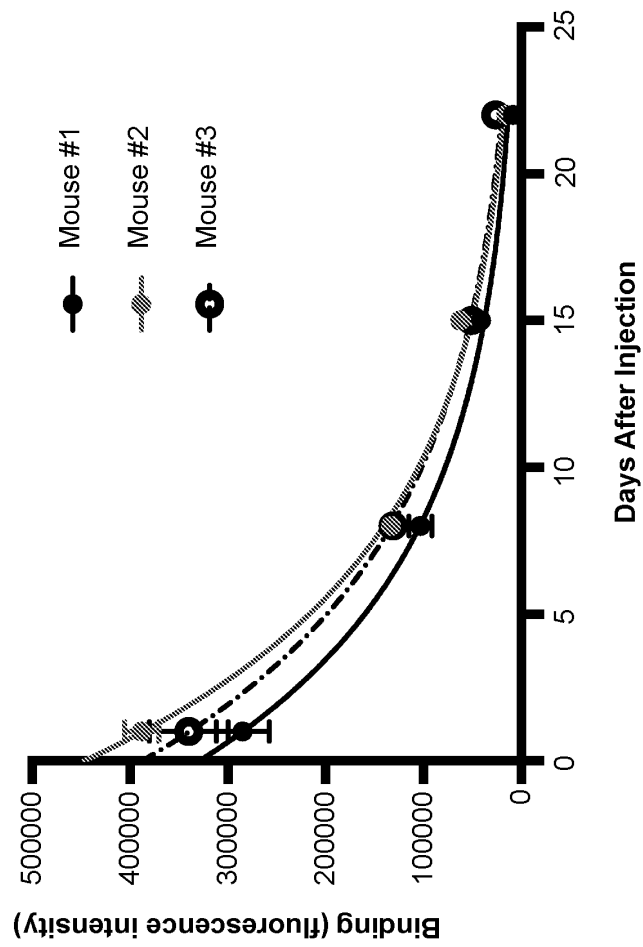
**FIG. 4B**

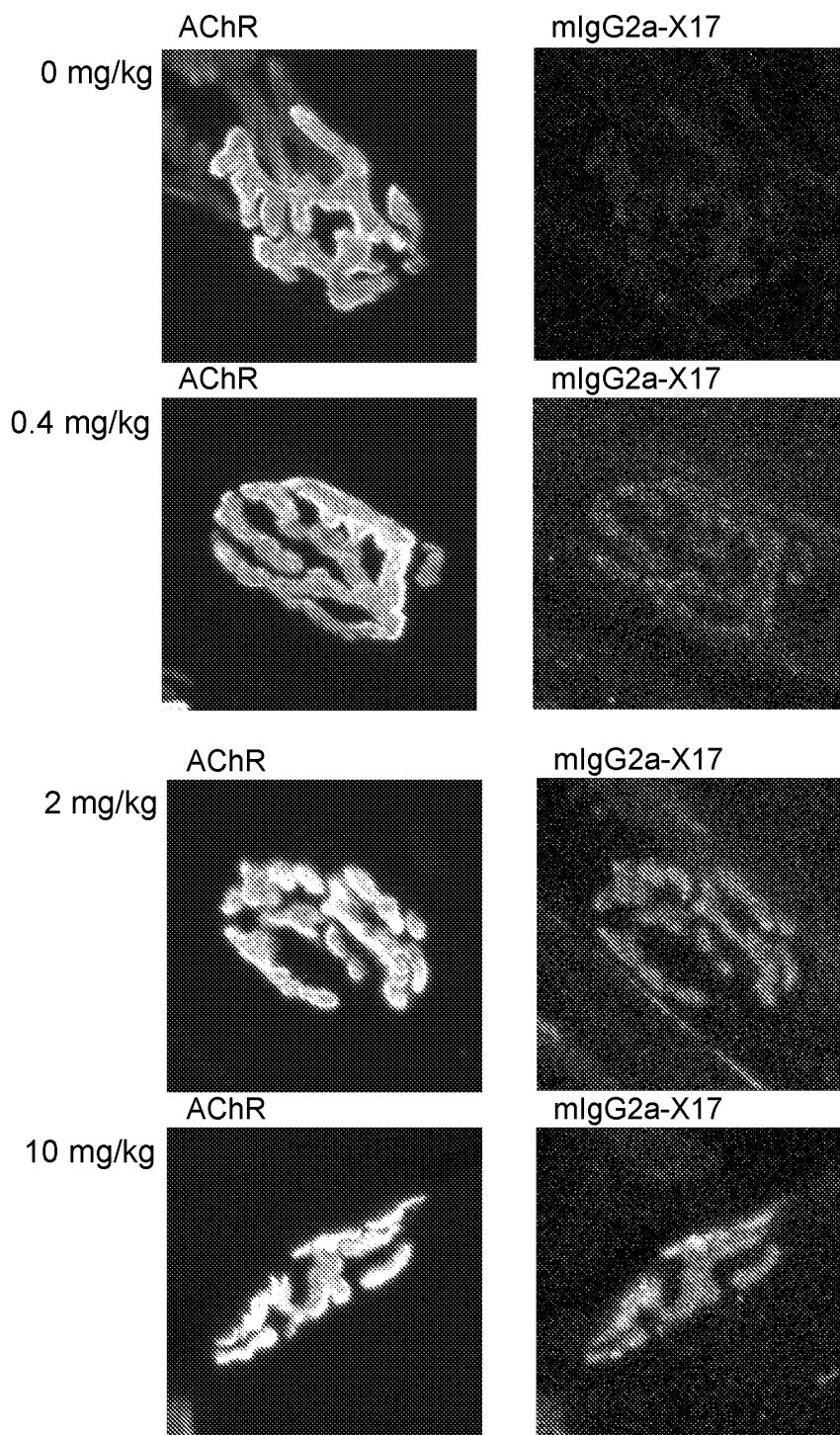
IgG Clone	Antigen			
	hFz	hECD	mFz	mECD
hIgG1-X2	0.421 ± 0.009	0.478 ± 0.009	0.265 ± 0.004	0.307 ± 0.005
mIgG2a-X3	0.079 ± 0.002	0.113 ± 0.003	0.096 ± 0.003	0.118 ± 0.003
hIgG1-X3	0.057 ± 0.001	0.074 ± 0.005	0.070 ± 0.002	0.079 ± 0.004
mIgG2a-X17	0.61 ± 0.02	0.97 ± 0.04	0.74 ± 0.01	1.10 ± 0.02
hIgG1-X17	0.56 ± 0.03	0.86 ± 0.06	0.68 ± 0.03	1.04 ± 0.06

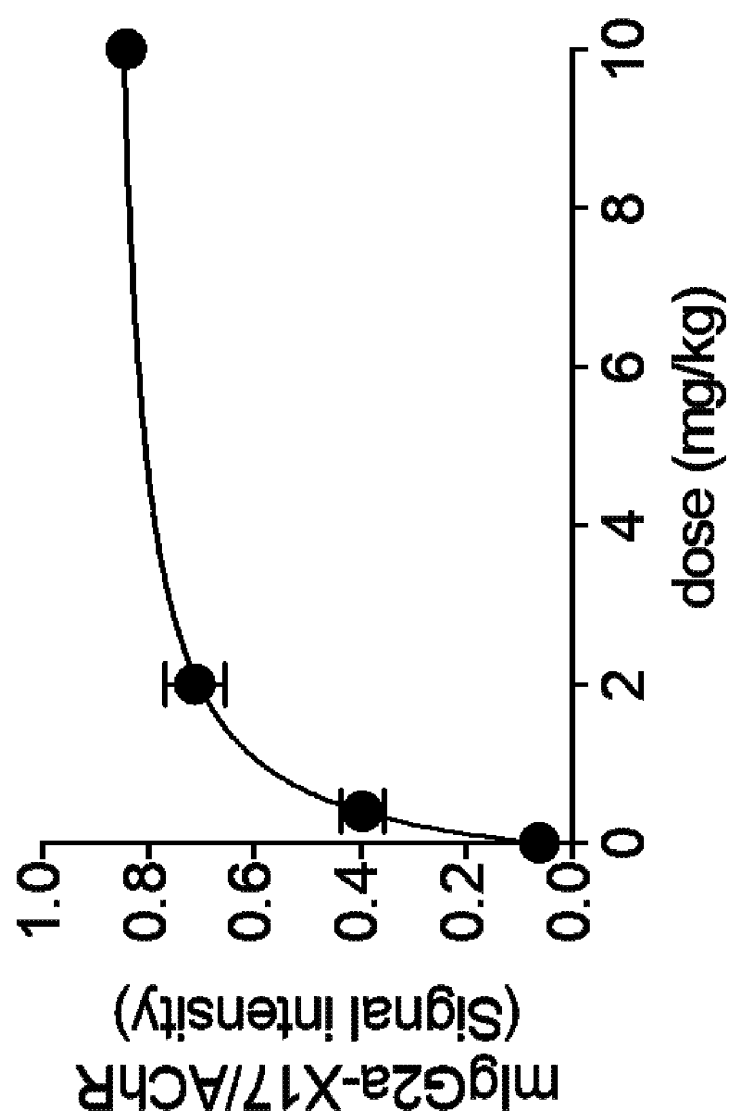
K_D values in nM

FIG. 4C

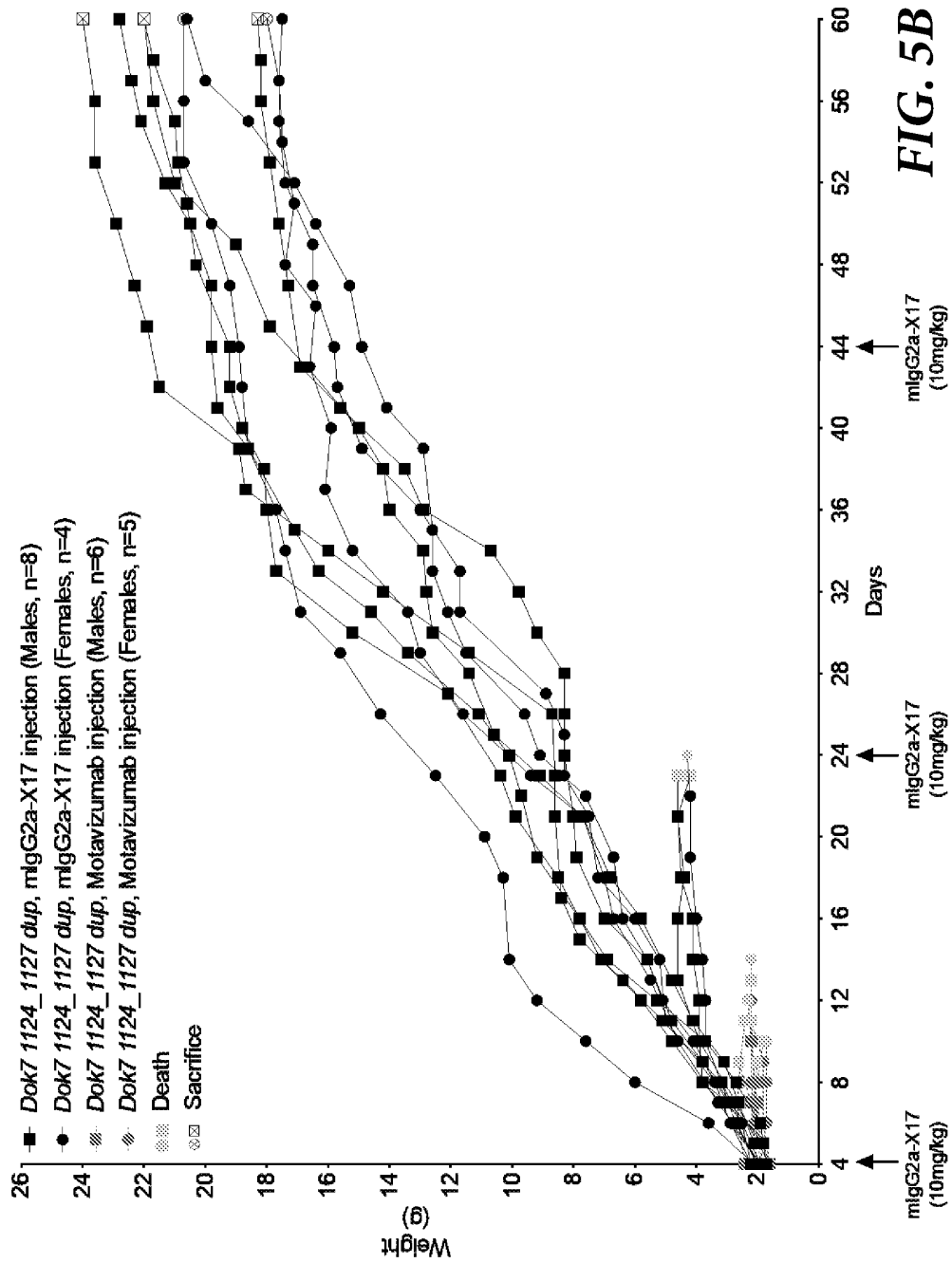
**FIG. 4D**

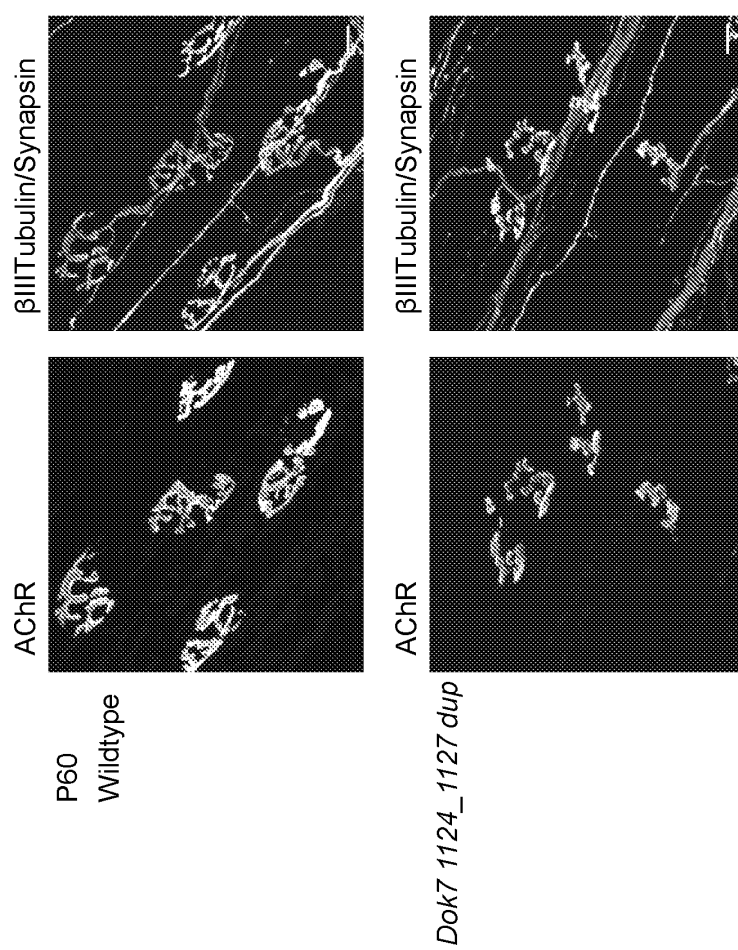
**FIG. 4E**

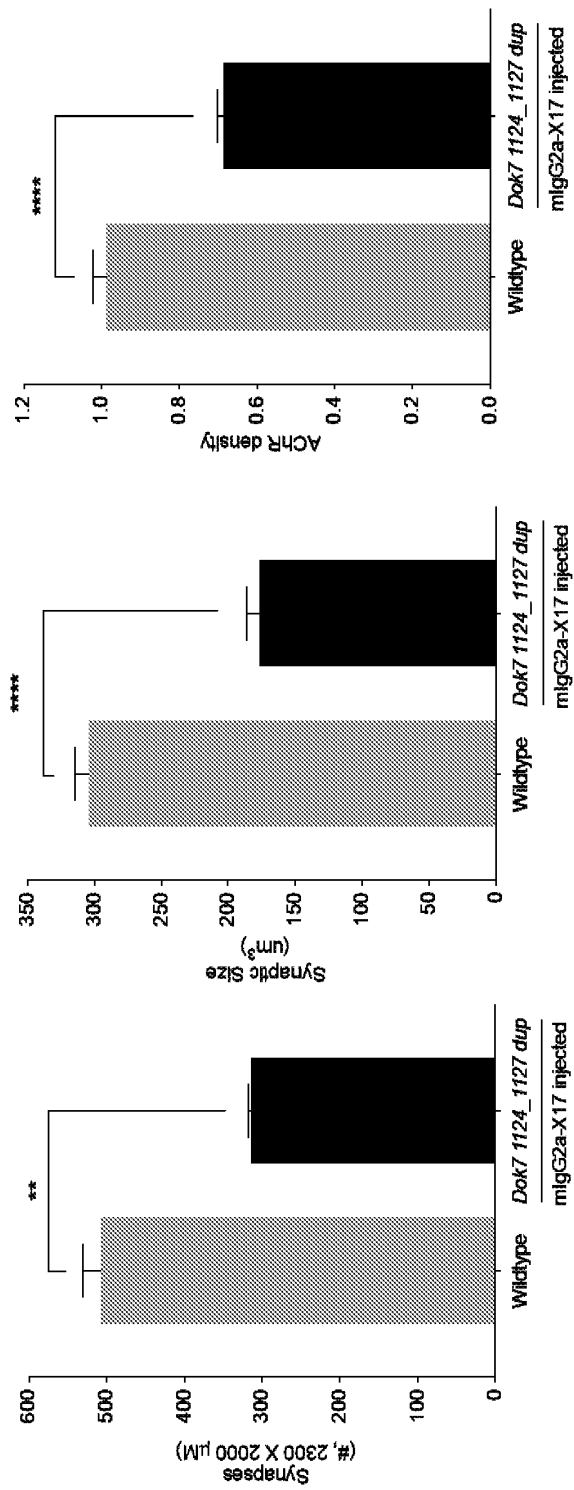
**FIG. 4F**

*FIG. 4F (continued)*







**FIG. 5C (continued)**

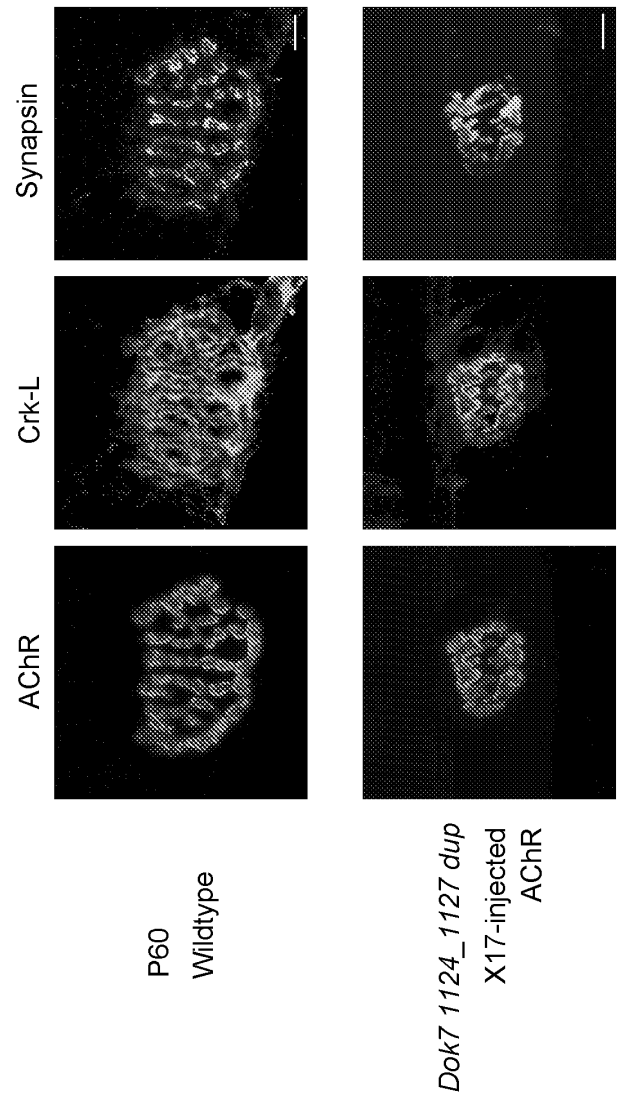


FIG. 5D

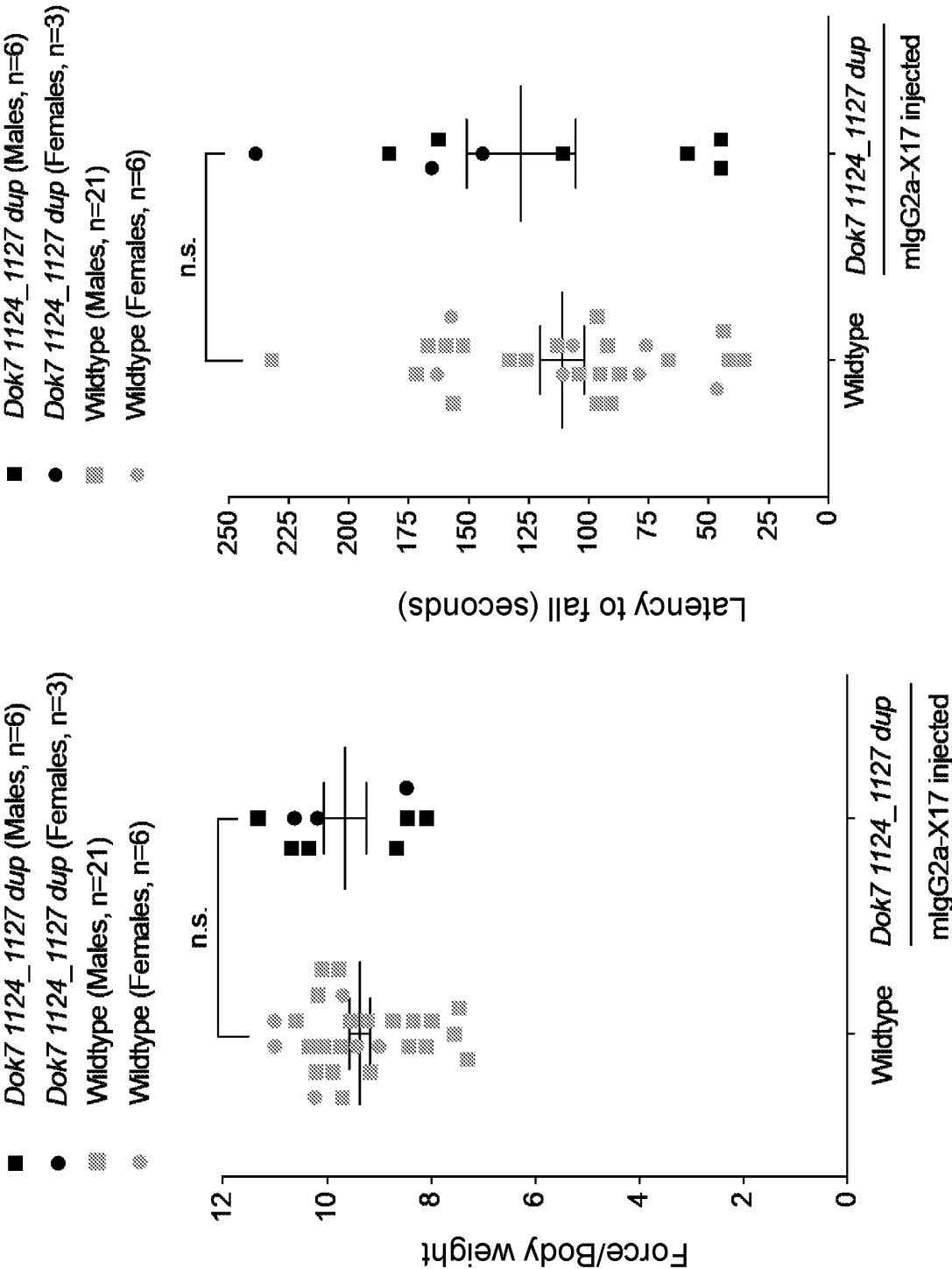
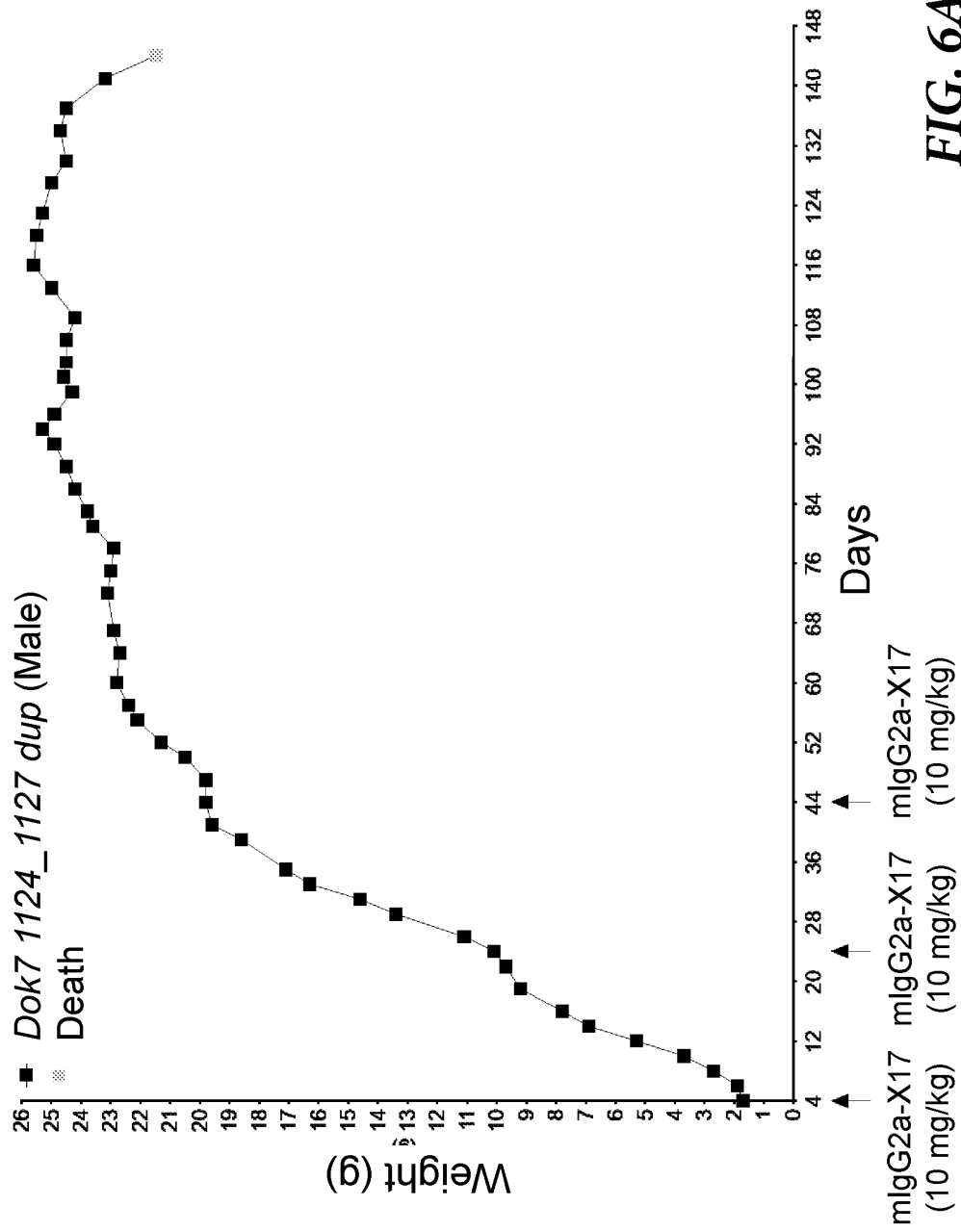
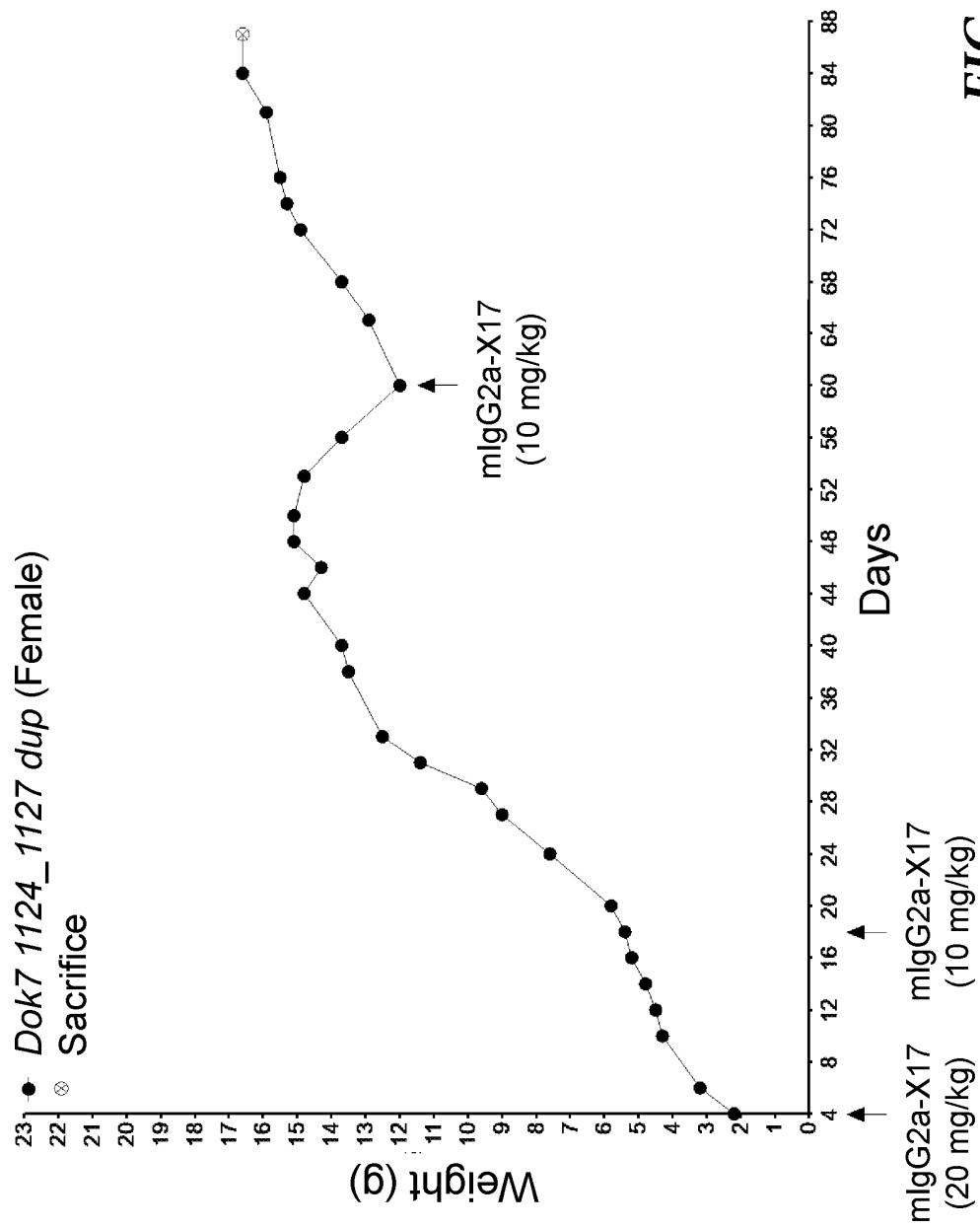
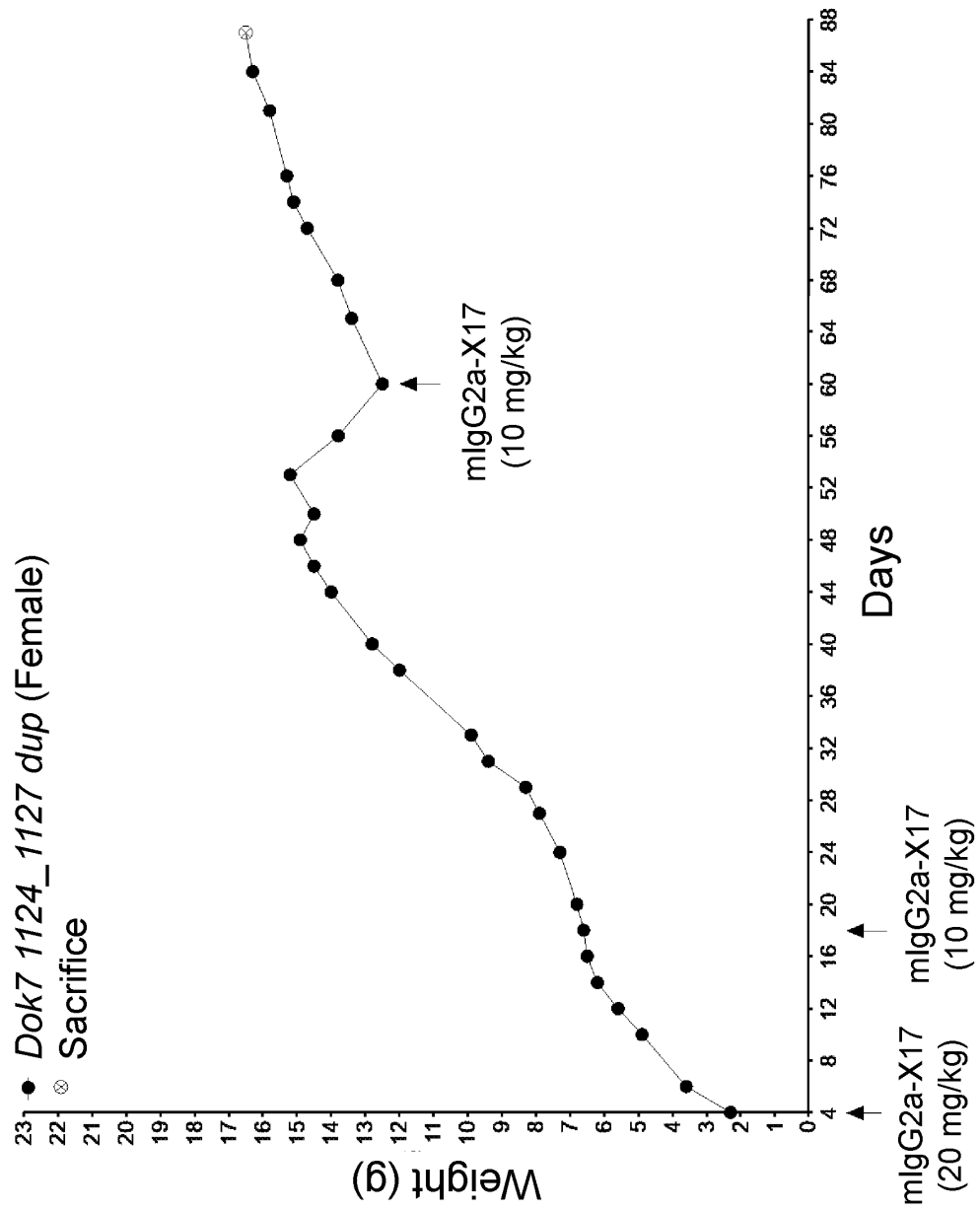
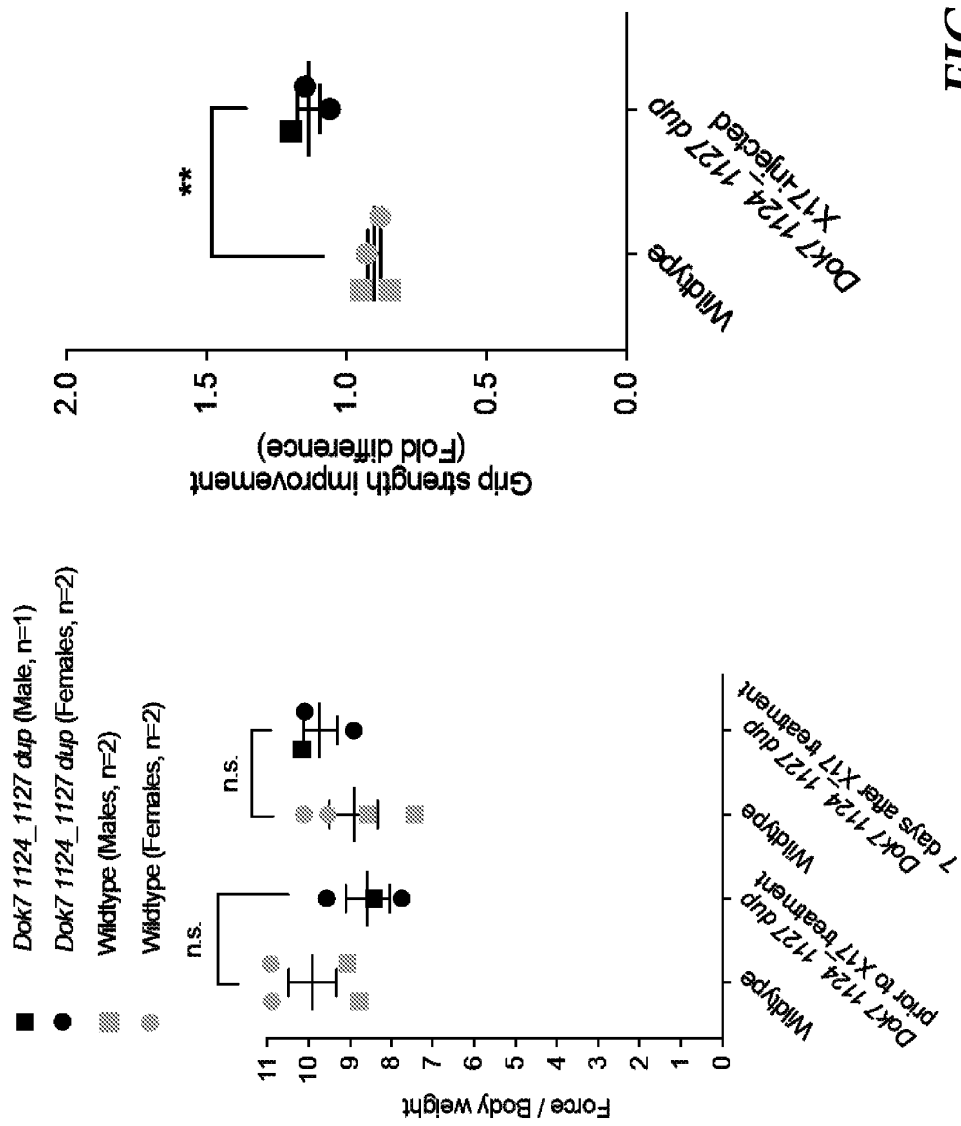


FIG. 5E



**FIG. 6B**

**FIG. 6B (continued)**



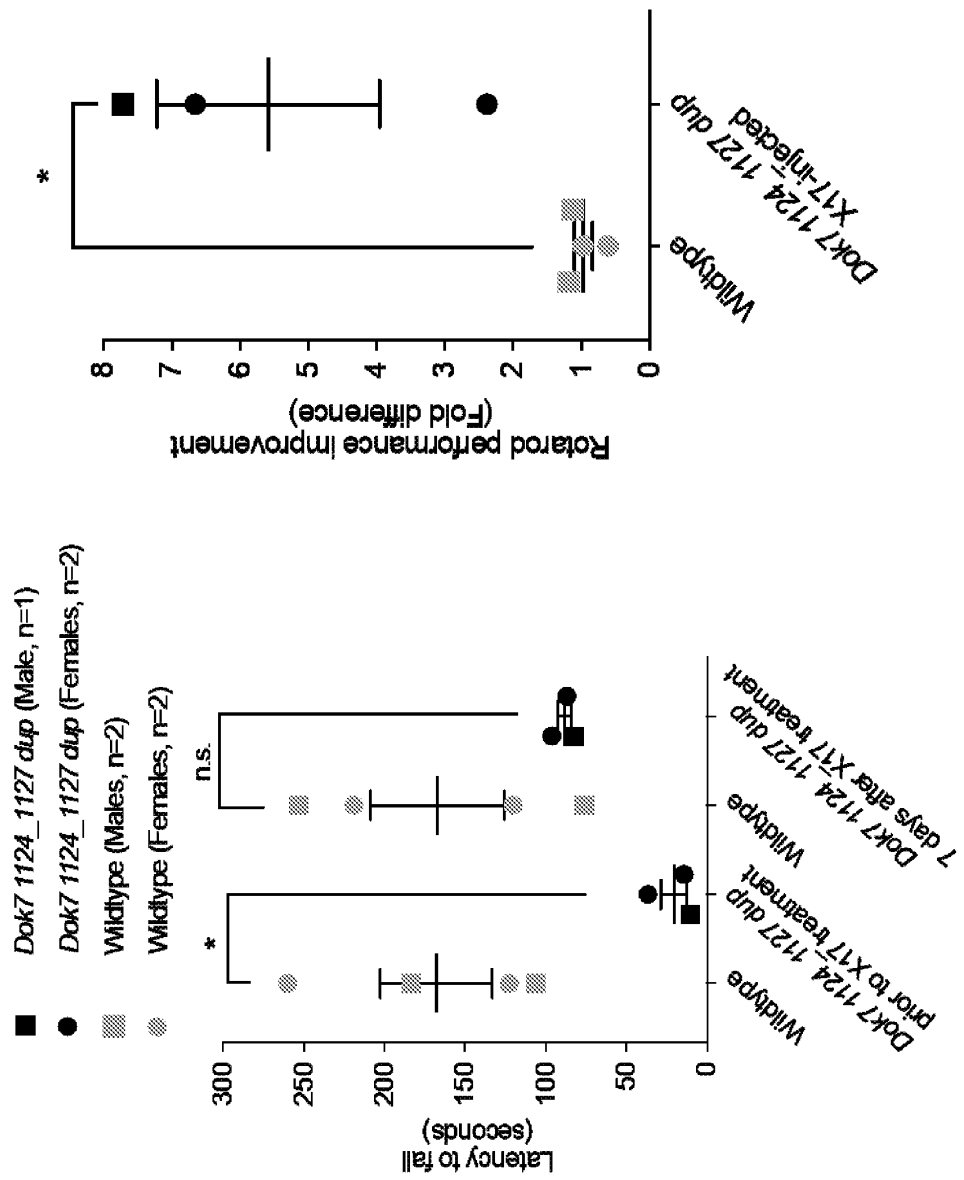


FIG. 6C (continued)

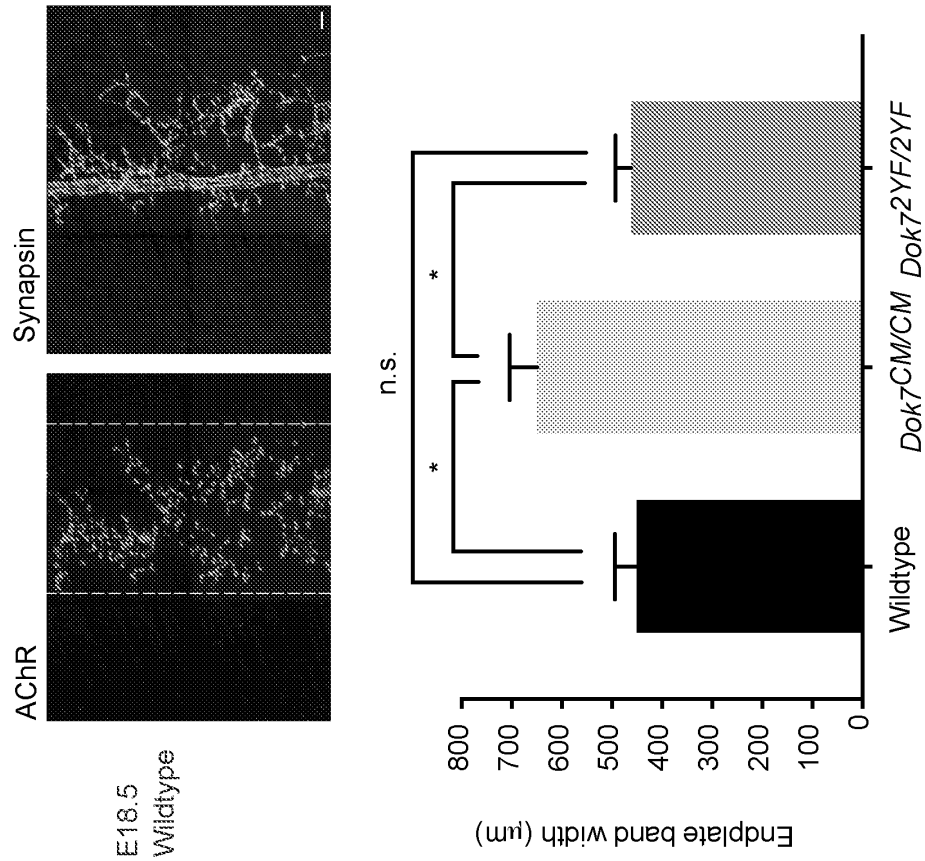
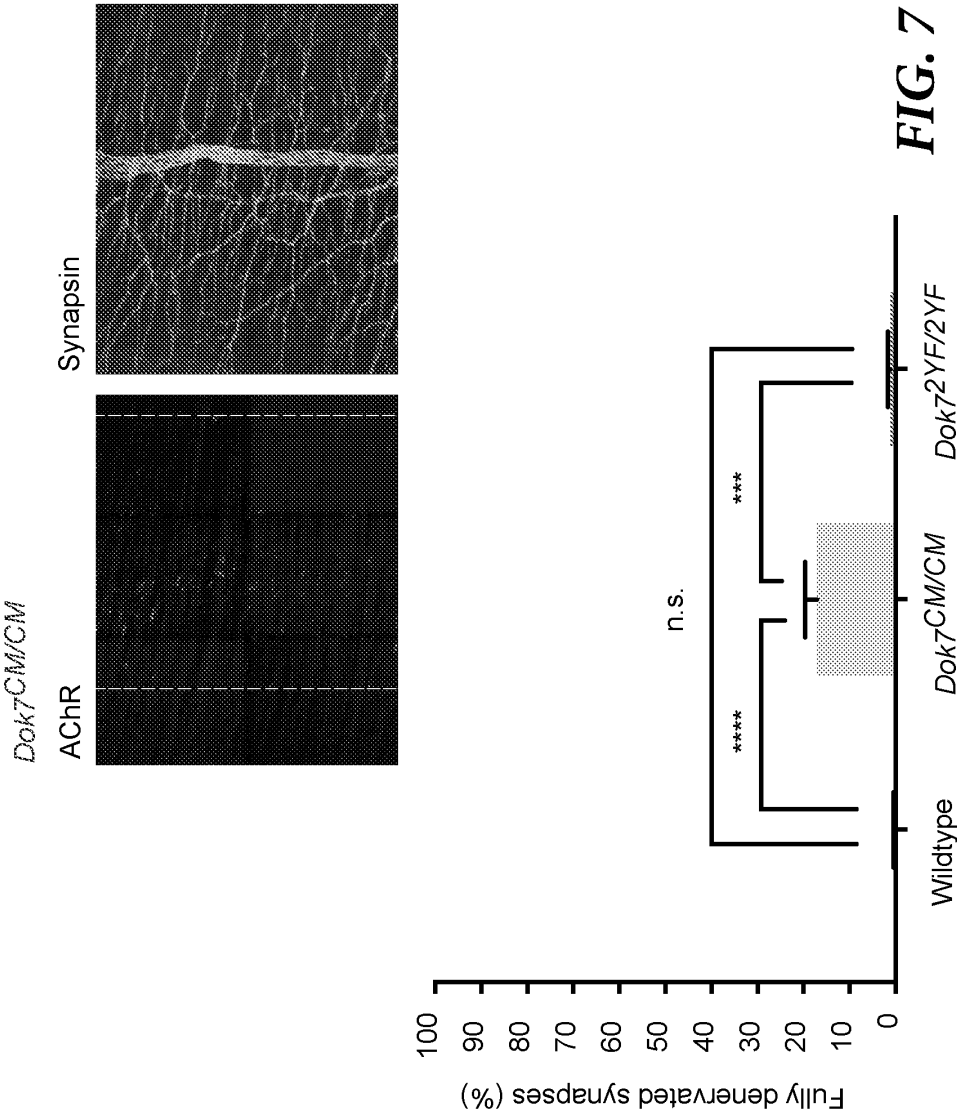


FIG. 7



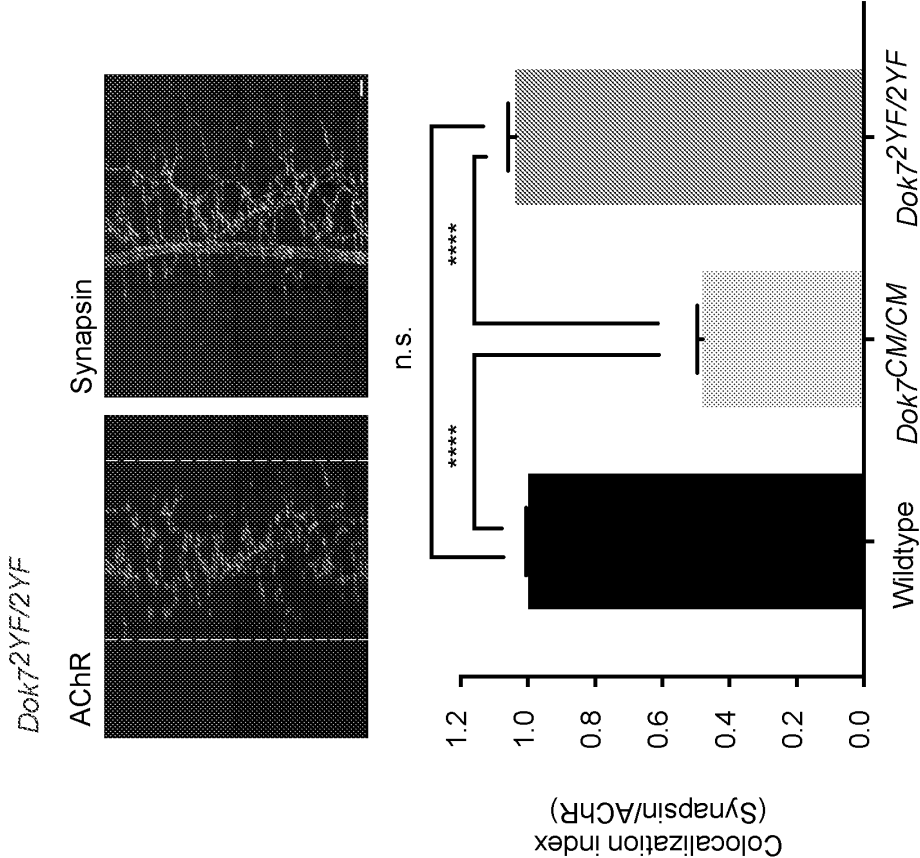
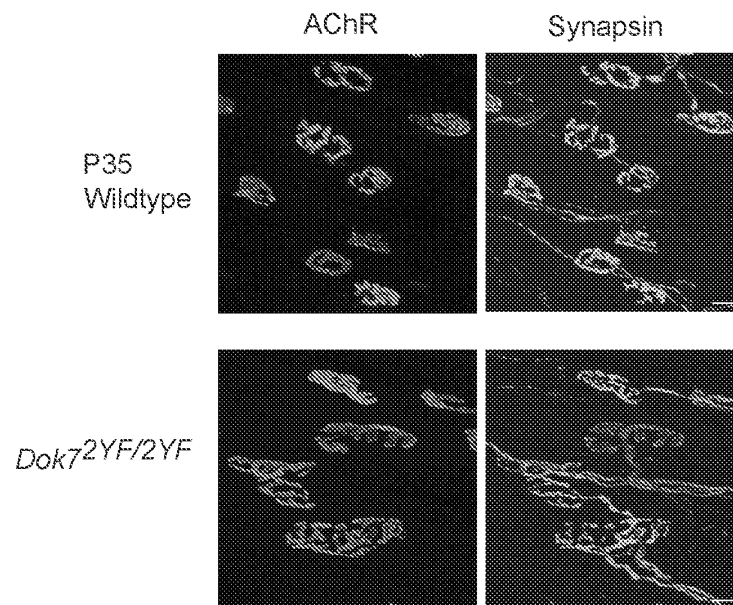


FIG. 7 (continued)

**FIG. 8**

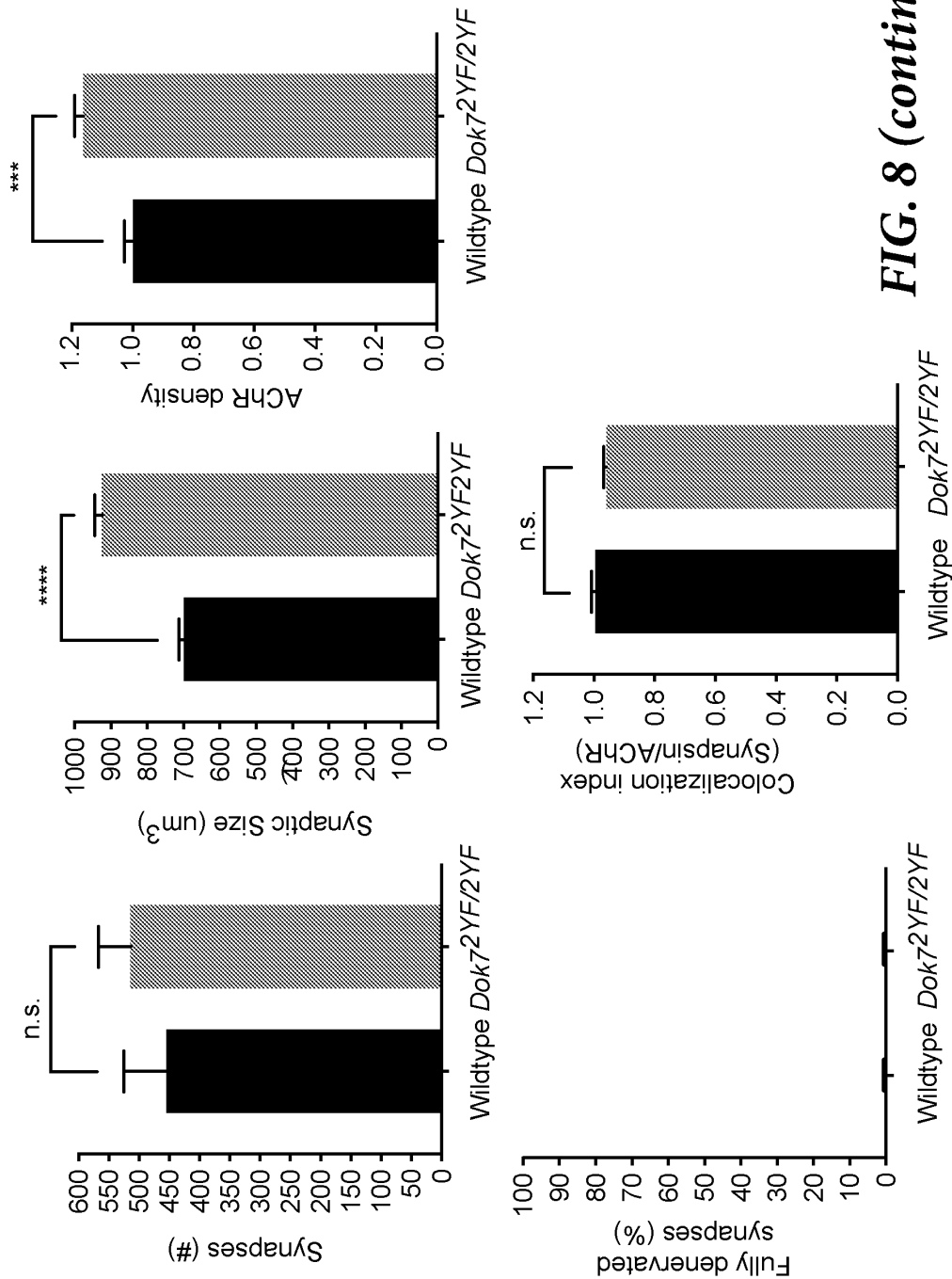
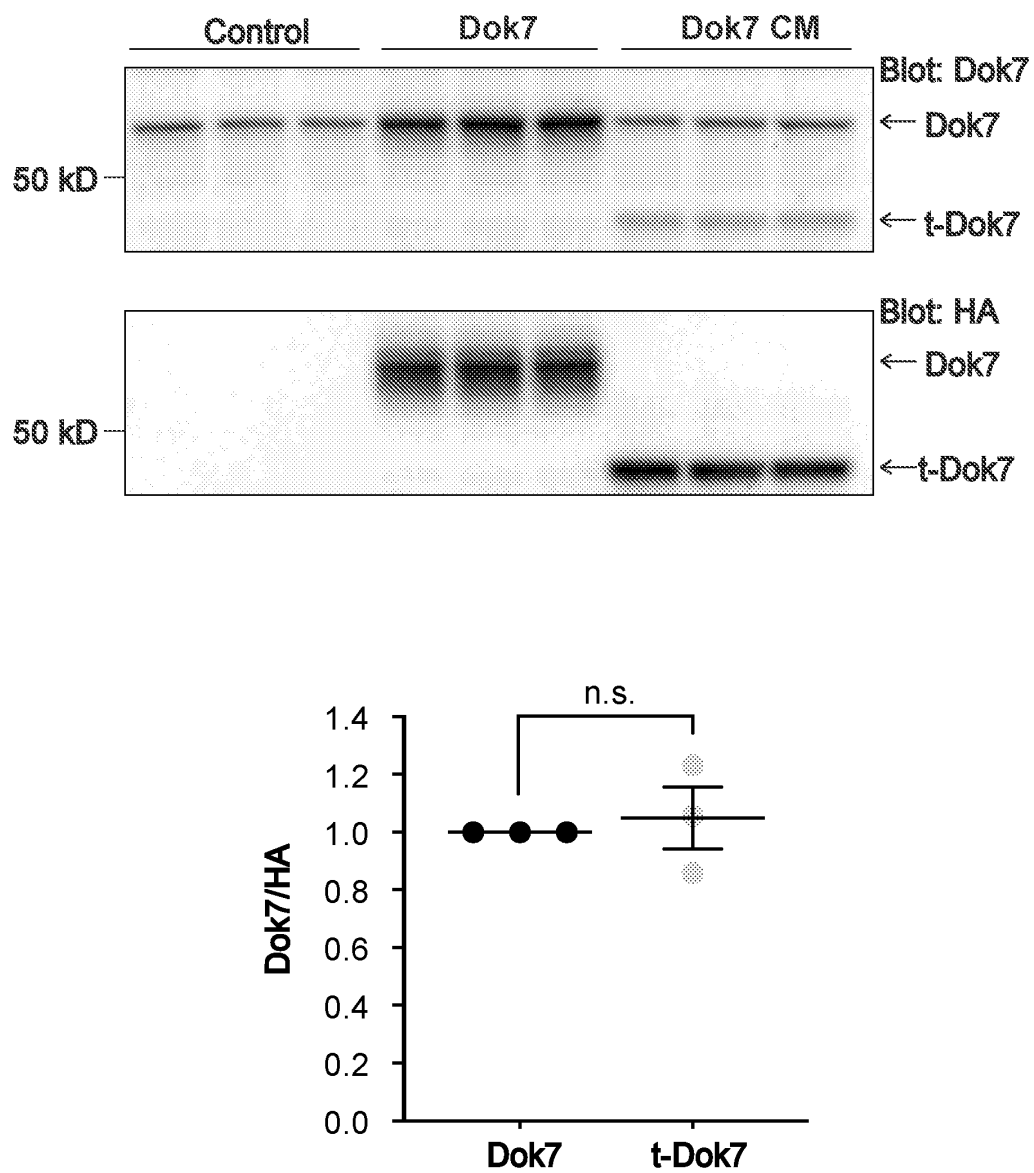
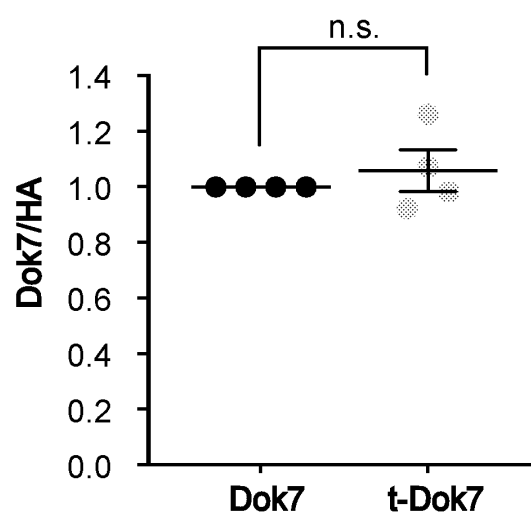
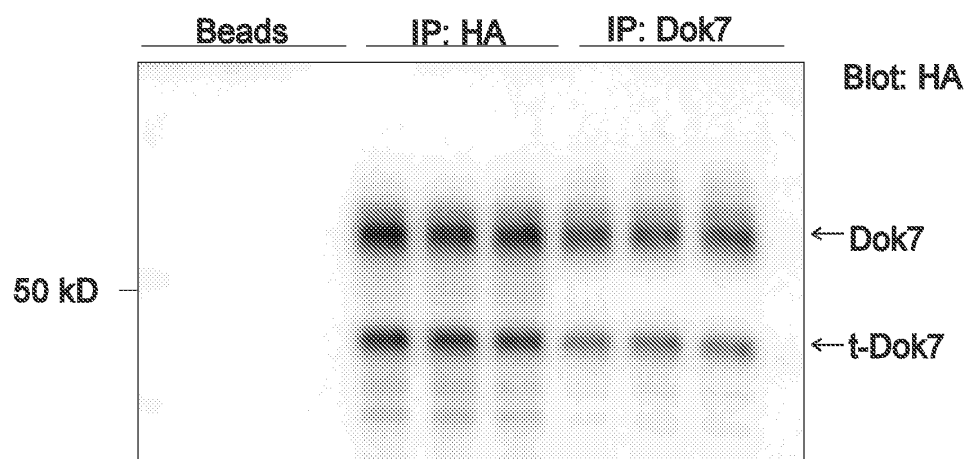
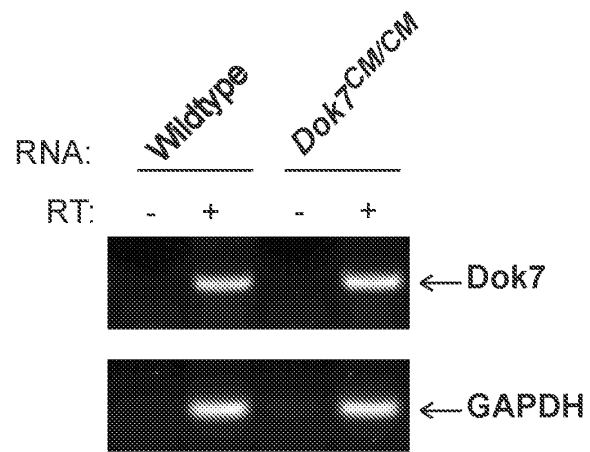
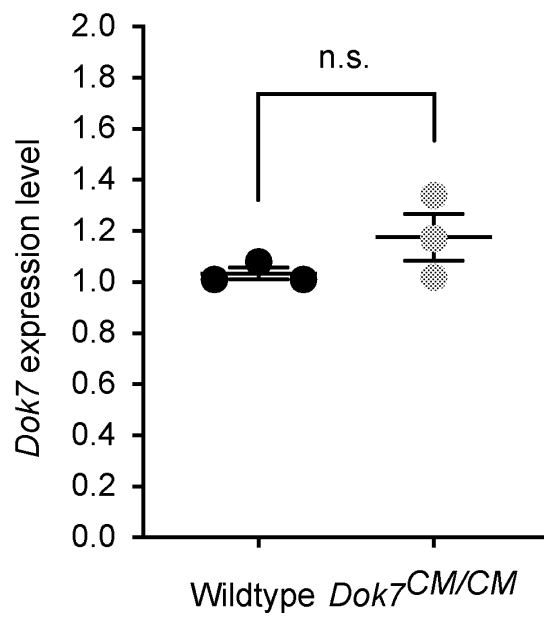
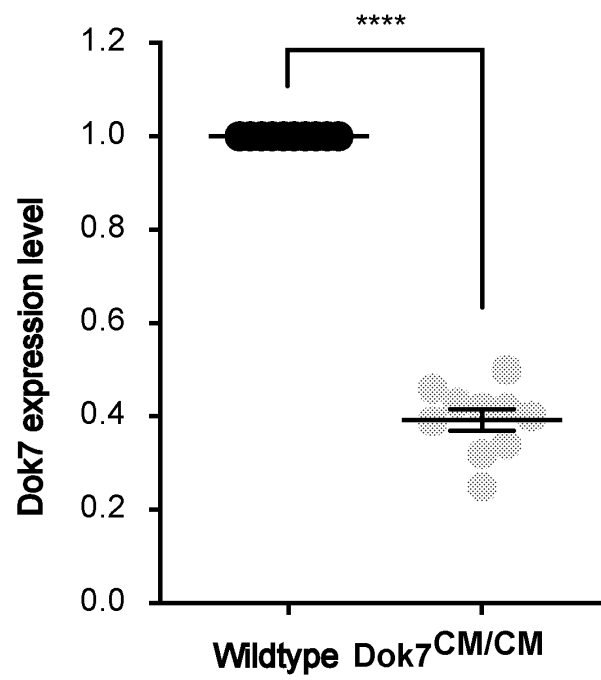
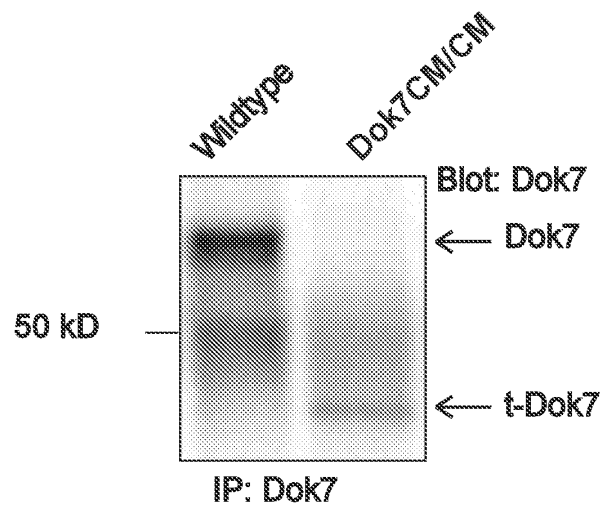


FIG. 8 (continued)

**FIG. 9A**

**FIG. 9B**

**FIG. 10A****FIG. 10B**

**FIG. 10C**

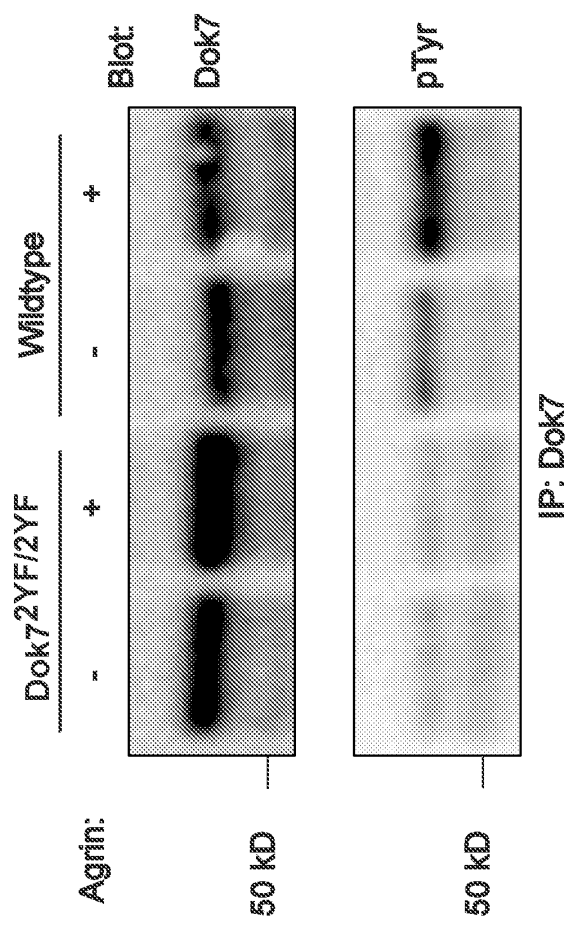


FIG. 11

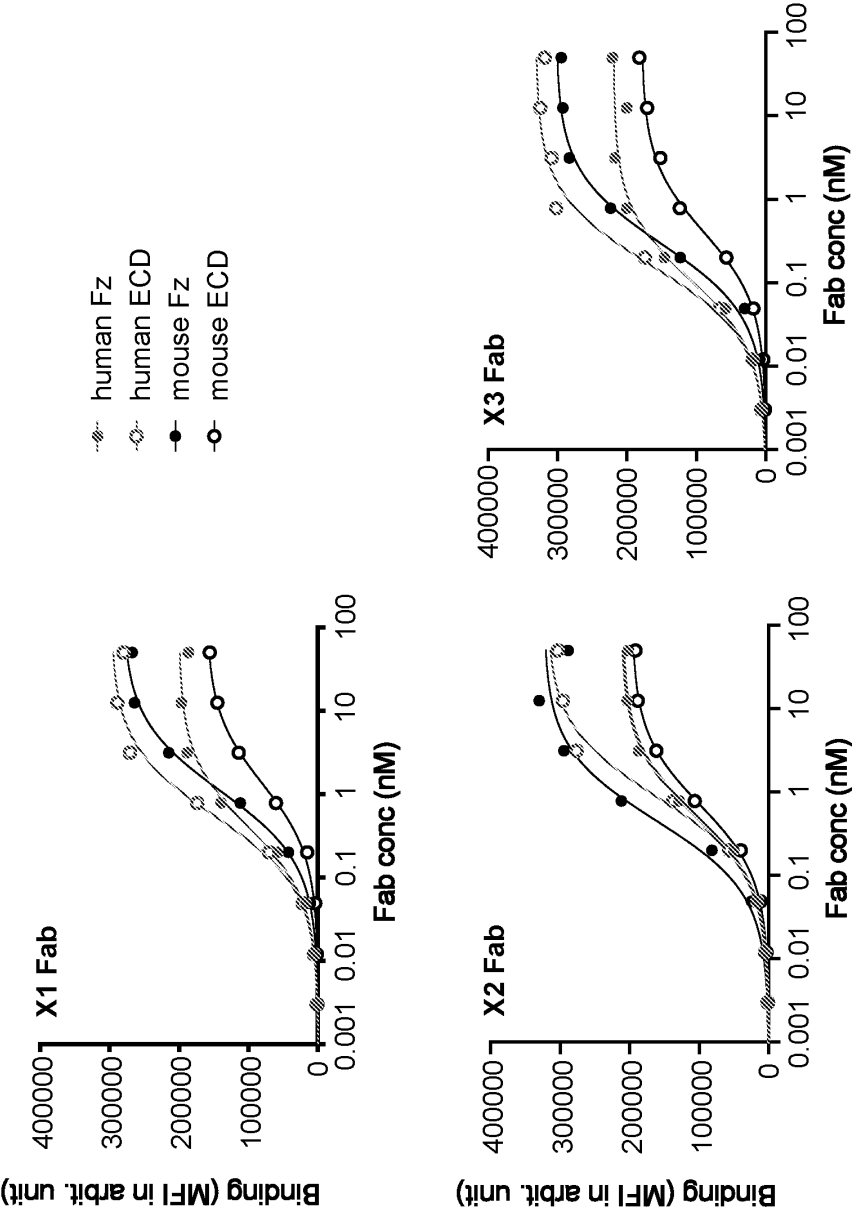


FIG. 12A

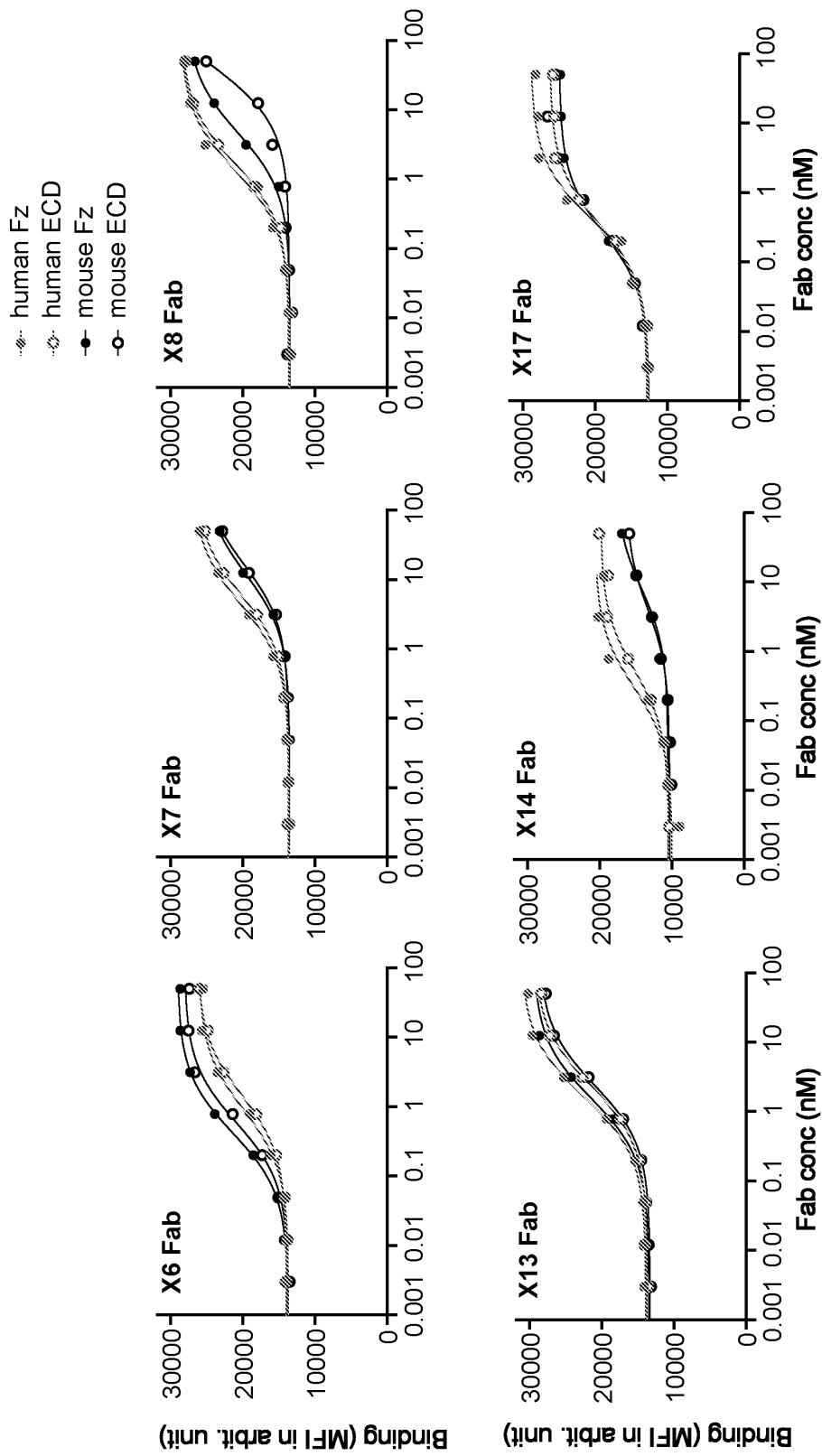


FIG. 12B

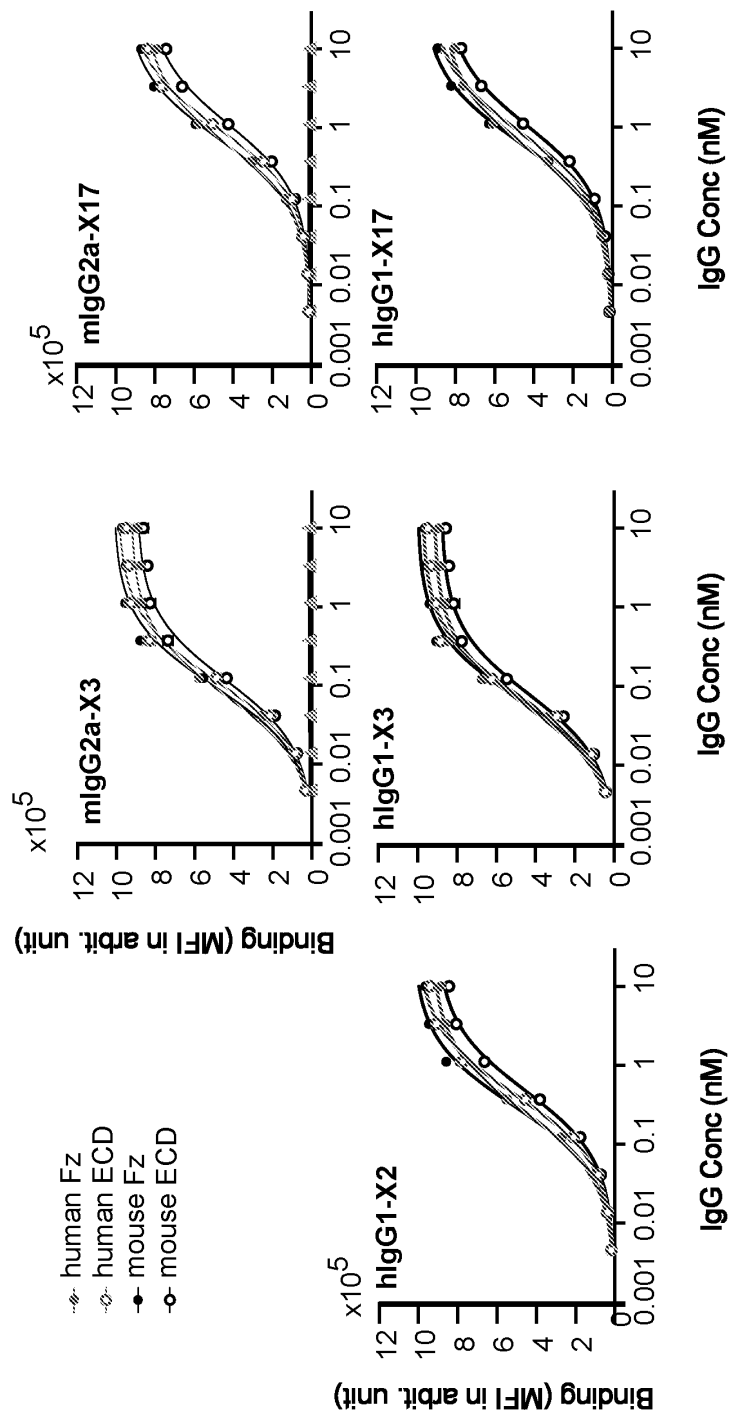


FIG. 12C

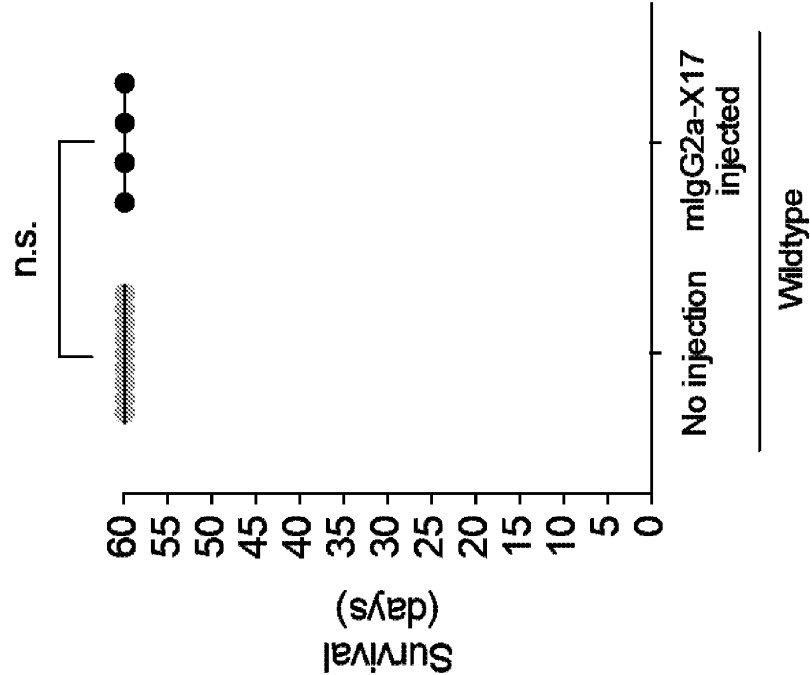
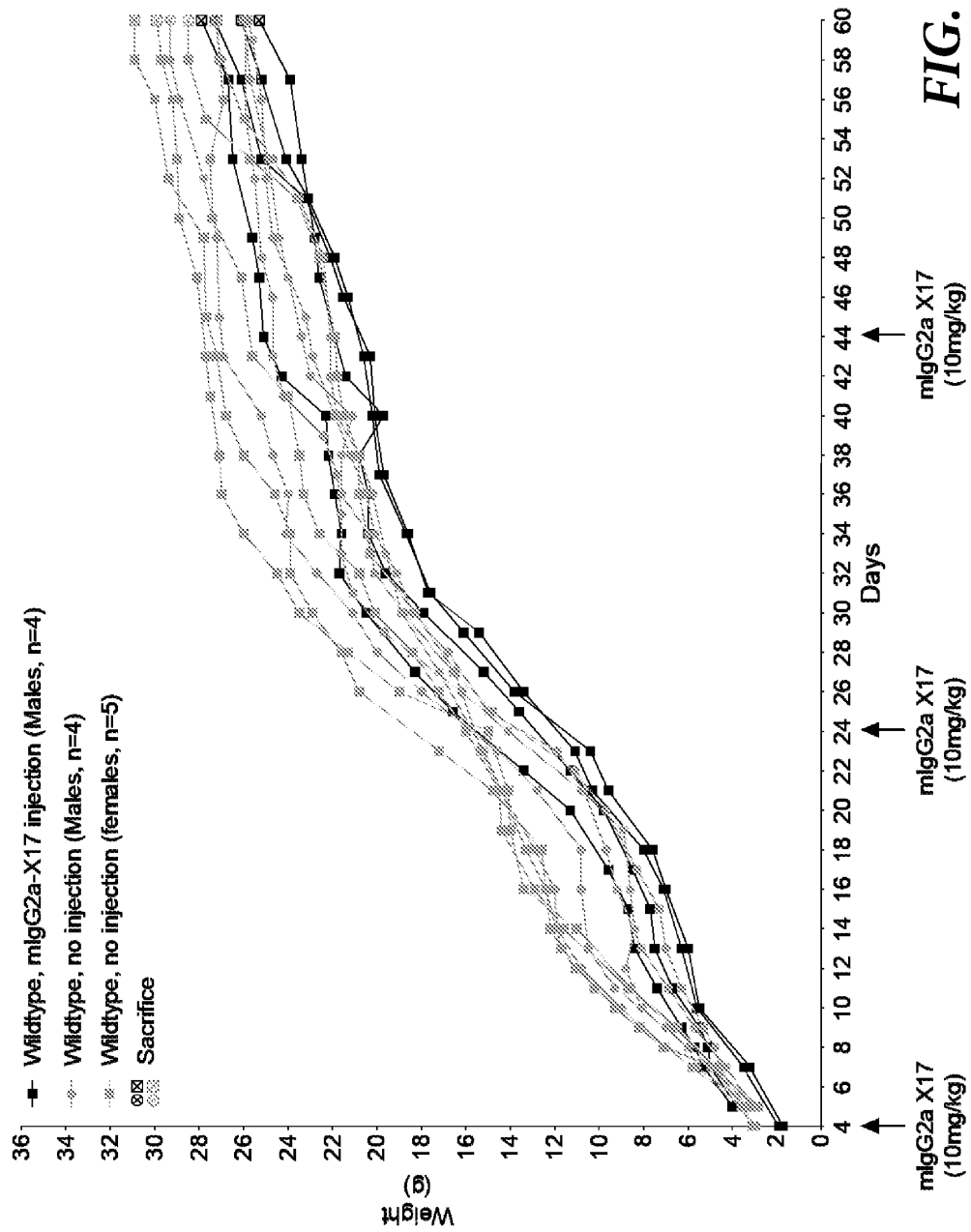


FIG. 13A



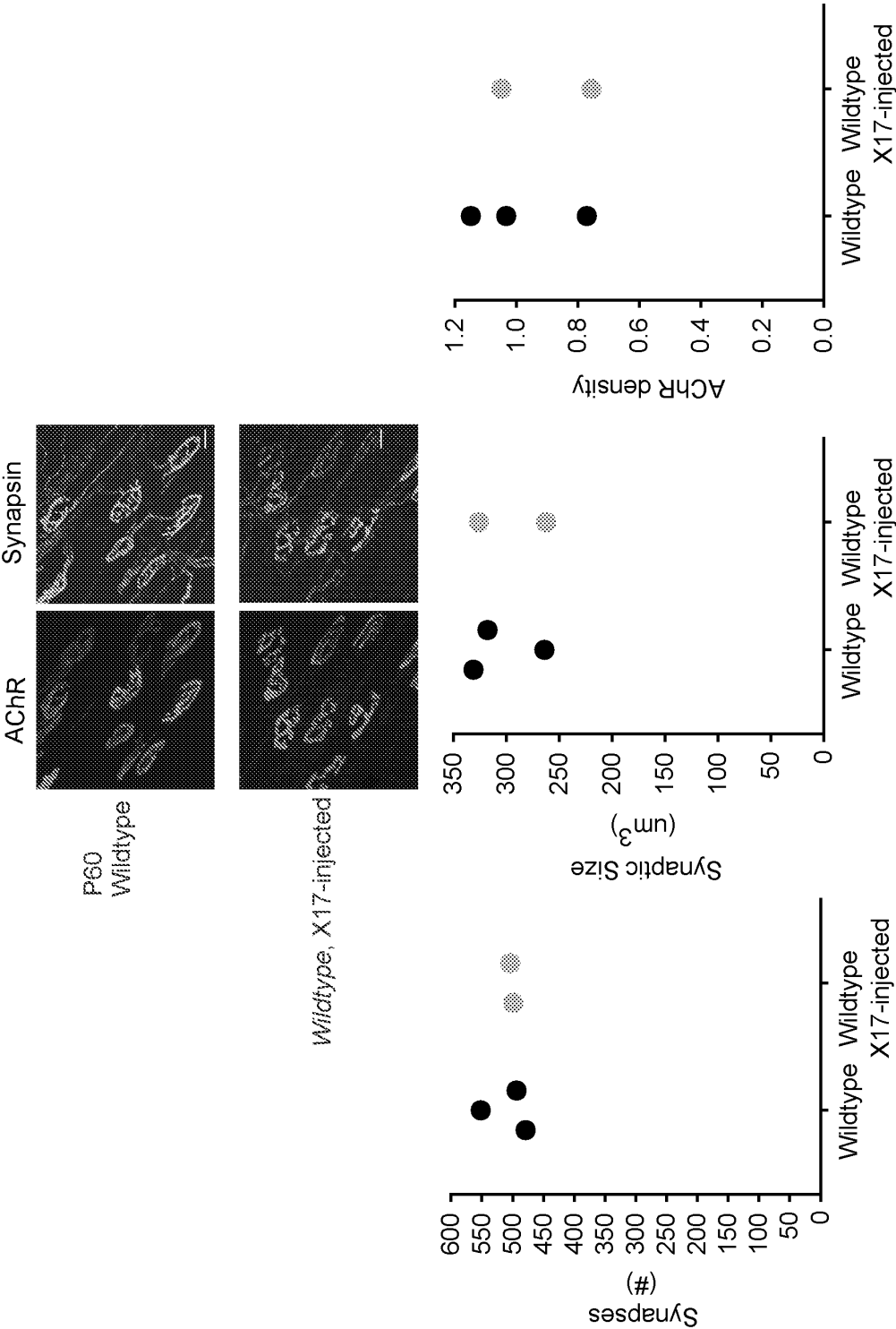
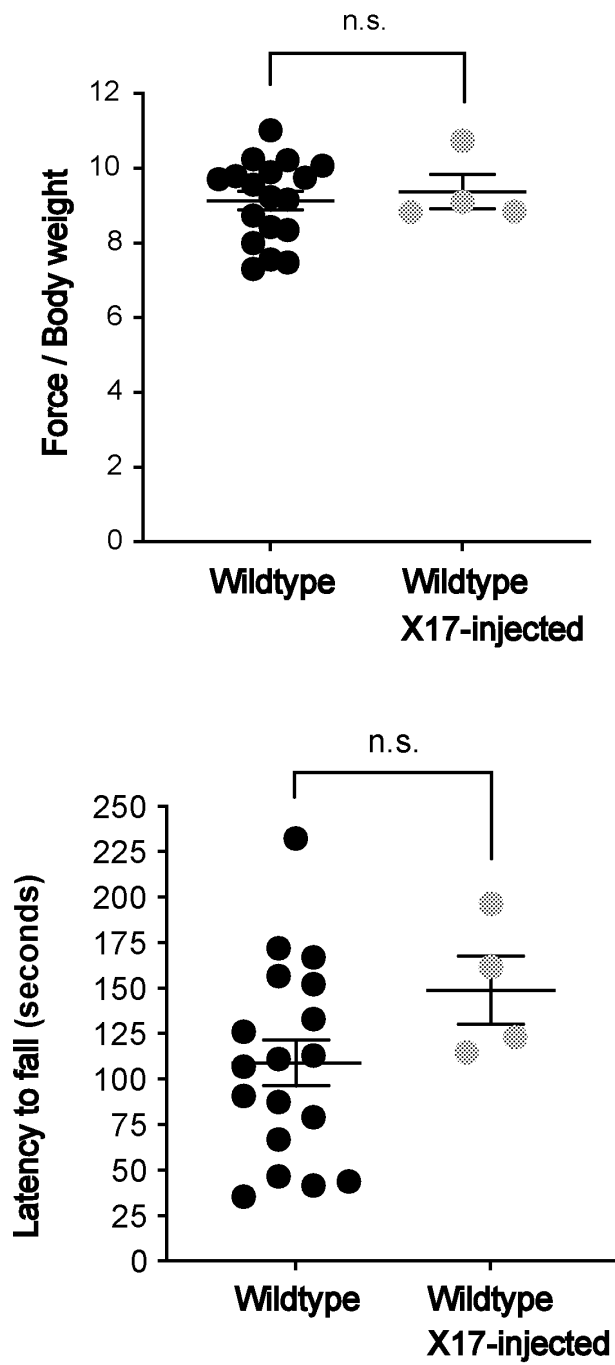


FIG. 13C

*FIG. 13D*

A

C57BL/6-CBA	Observed	Expected	χ^2
Wildtype	14	15	0.04
<i>Dok7^{CM/+}</i>	36	29	1.43
<i>Dok7^{CM/CM}</i>	9	15	2.24
Total χ^2			3.71
P-value			0.156

C57BL/6-FVB	Observed	Expected	χ^2
Wildtype	23	14	5.79
<i>Dok7^{CM/+}</i>	26	28	0.14
<i>Dok7^{CM/CM}</i>	7	14	3.50
Total χ^2			9.43
P-value			0.008

C57BL/6-129sv1	Observed	Expected	χ^2
Wildtype	10	9	0.06
<i>Dok7^{CM/+}</i>	22	19	0.66
<i>Dok7^{CM/CM}</i>	5	9	1.95
Total χ^2			2.68
P-value			0.262

C57BL/6-BalbC	Observed	Expected	χ^2
Wildtype	15	10	3.18
<i>Dok7^{CM/+}</i>	20	19	0.05
<i>Dok7^{CM/CM}</i>	3	9	4.45
Total χ^2			7.68
P-value			0.021

B

Strain	Maximum Survival	Average Survival	SEM	N
C57BL/6	5		0	1
C57BL/6-CBA	21	11.2	2.28	14
C57BL/6-FVB	17	11.5	1.38	7
C57BL/6-129sv1	17	15.2	1.32	5
C57BL/6-BalbC	15	12.5	1.38	3

FIGs. 14A-14B

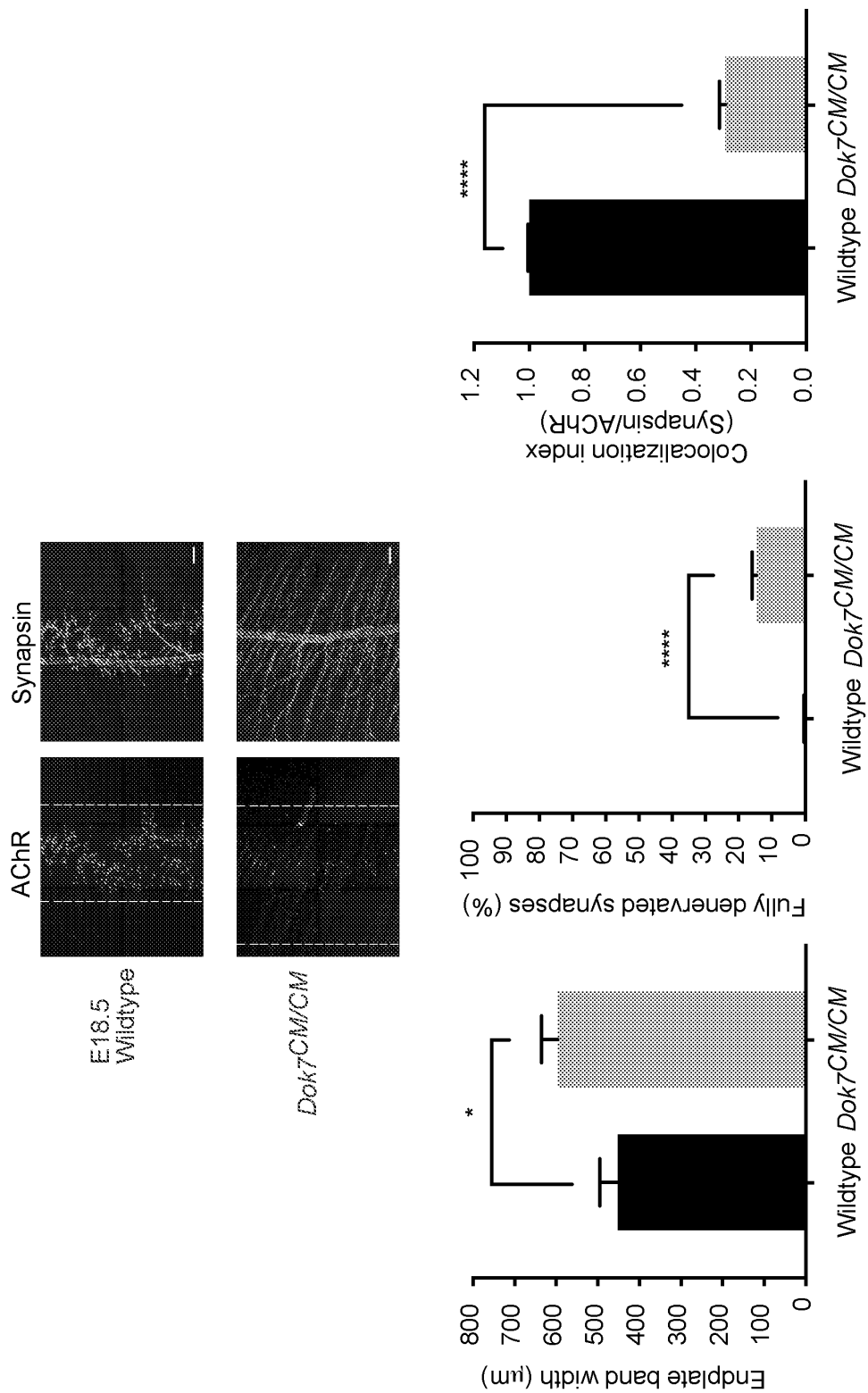


FIG. 15A

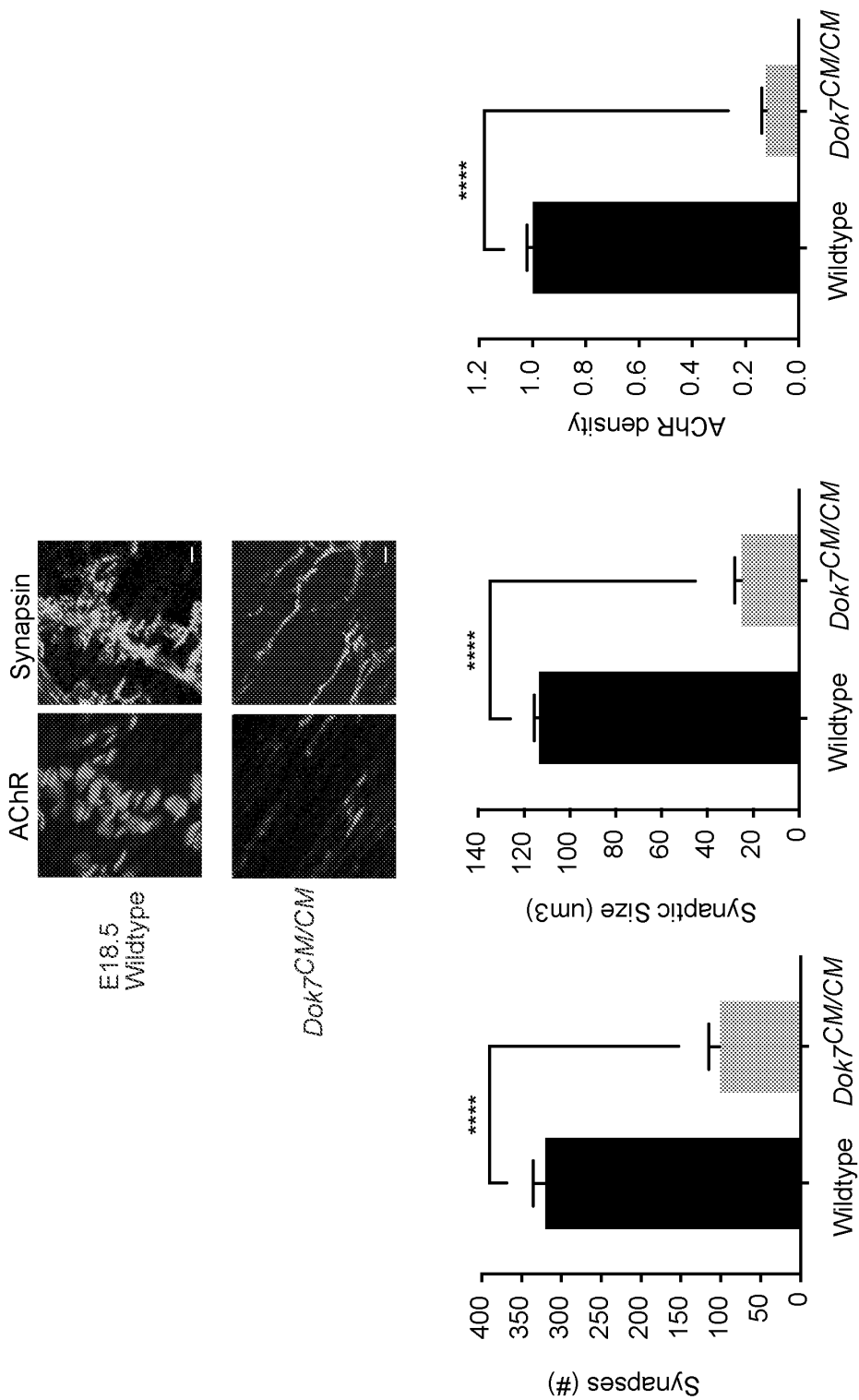


FIG. 15B

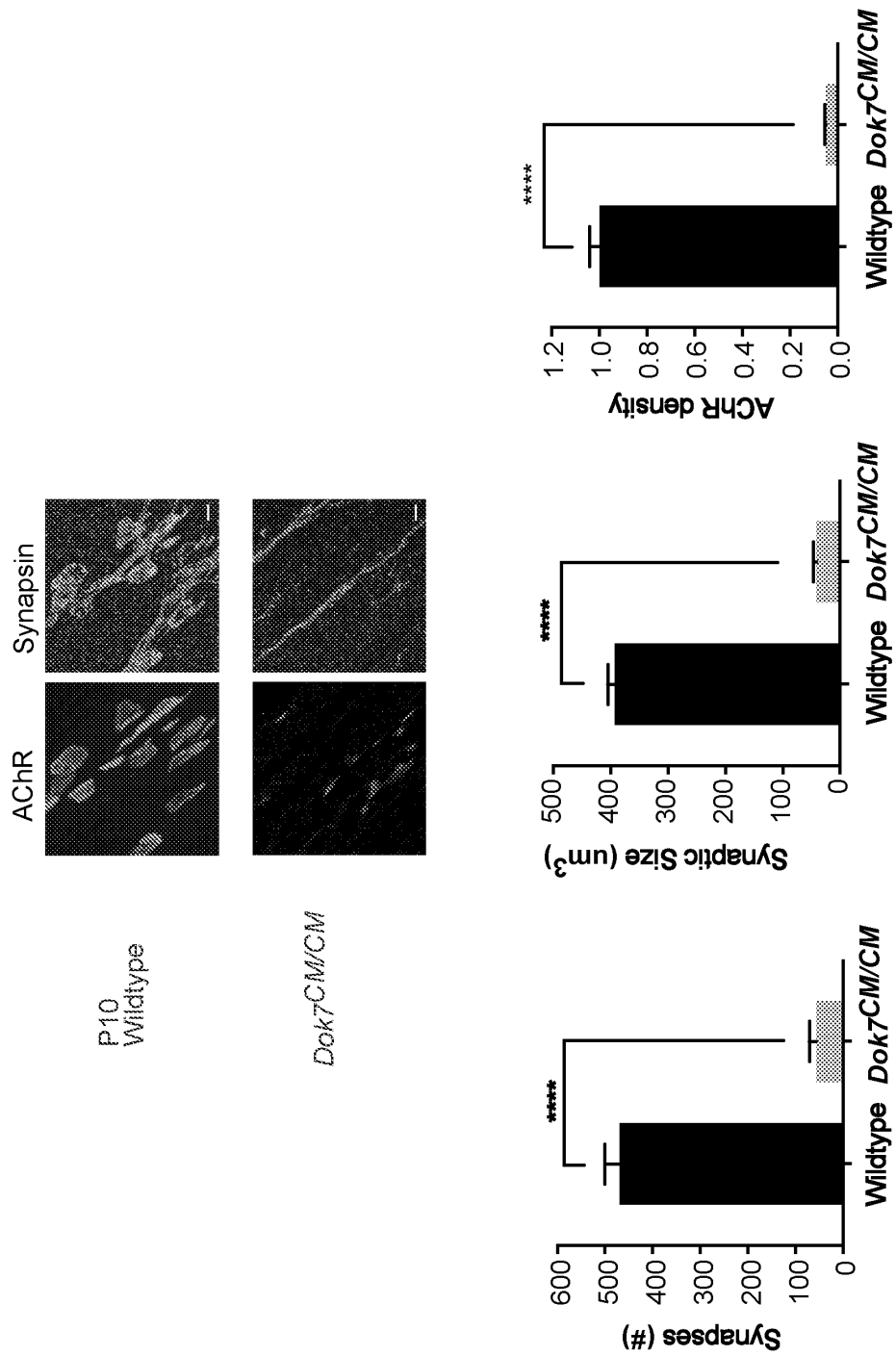
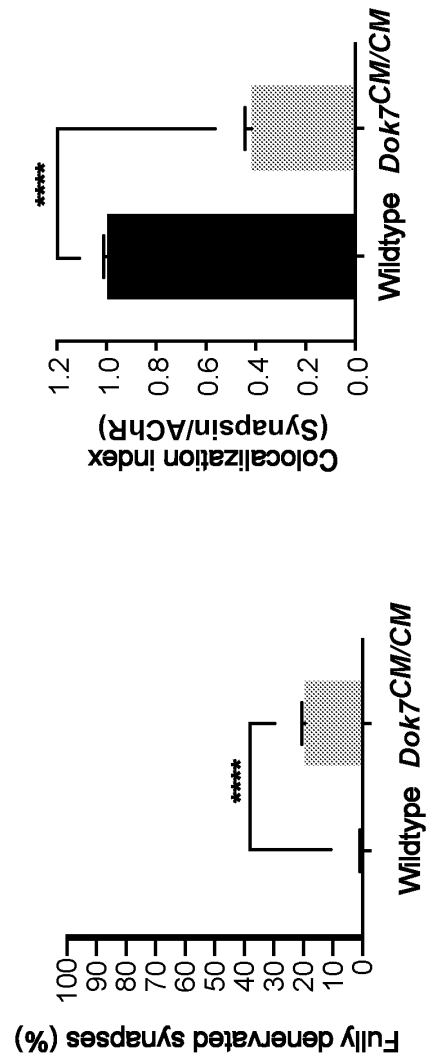
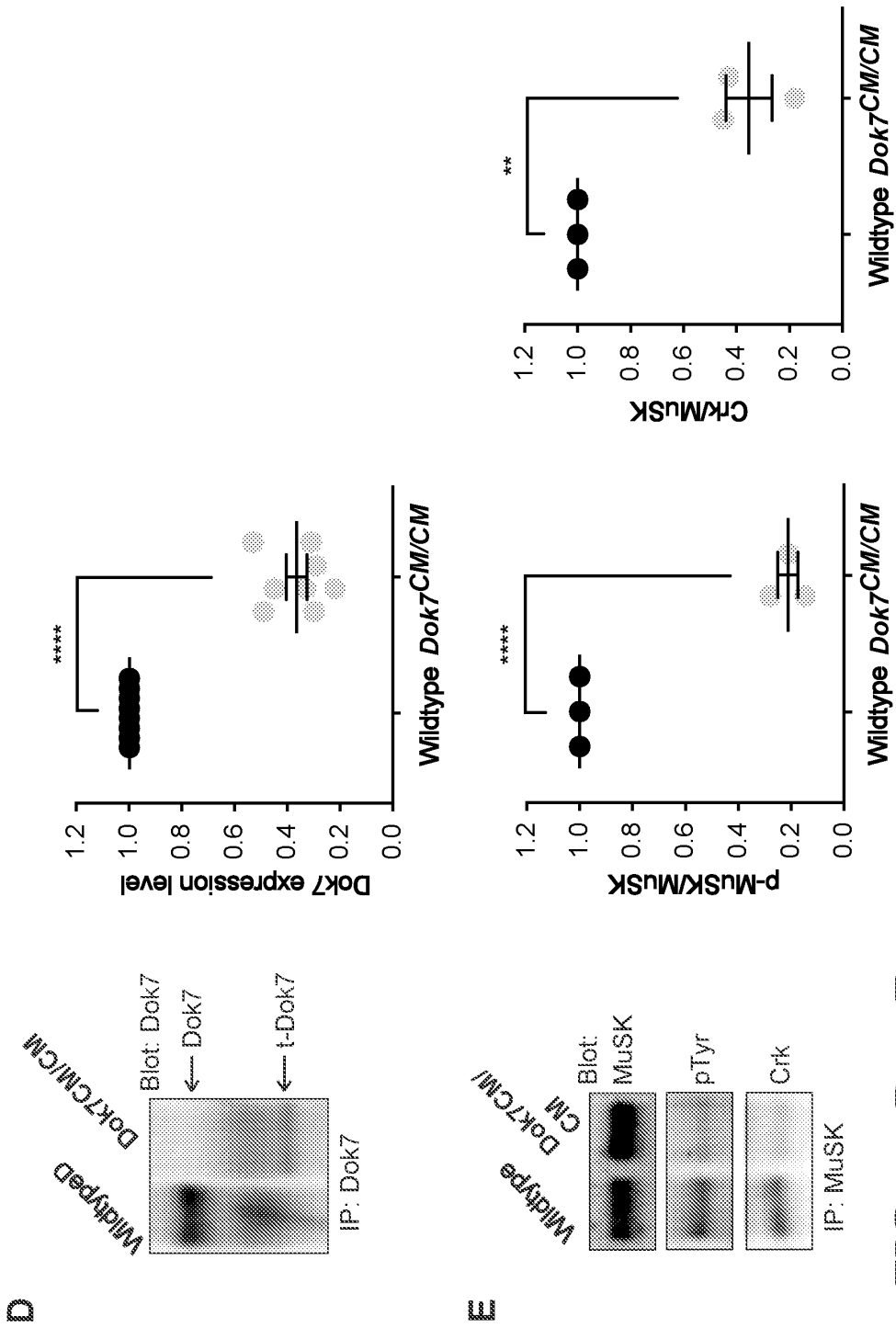


FIG. 15C

*FIG. 15C (continued)*



A Potential off-targets in *Dok7* CM mice

Off-target	Sequence	Score	Mismatches	Sequence ID	Locus
1	GCCCTGCACAGTCTGCCCCCTGG	2.6	3MMs [1:3:8]	AL645994.7	Chr11:-9049672
2	GCACTGCACAGTCTGCCCCCTGG	2.6	3MMs [1:3:8]	AC129606.4	Chr8:+97387576
3	TTTATGCTCTGTCTGCCCCCAAG	2.5	3MMs [2:4:10]	AC103939.9	Chr18:+28885886
4	GGCTGCTCAGTCTGCCCCCTGG	2.3	3MMs [1:2:3]	AC154126.2	Chr7:+36061330
5	TCAGTCCTCAGTCTGCCCCCTGG	1.4	3MMs [3:4:6]	CT033750.18	Chr17:-15692194

B Potential off-targets in *Dok7* 2YF mice

Off-target	Sequence	Score	Mismatches	Sequence ID	Locus
1	GAATTCTAGGTGTGTCATAGAGG	1.7	3MMs [2:3:7]	AC113509.14	Chr1:+183488722
2	GGATTCTAGGTGTGTCATCGCGG	0.7	3MMs [3:7:19]	AC120877.15	Chr6:+16848270
3	GGGTTCAATTTGTGTCATAGCAG	0.5	4MMs [3:7:4:10]	AC129777.4	Chr8:+117950828
4	AGCTGCTAGGTATGTCATAGTGG	0.5	4MMs [1:5:7:12]	AL596263.8	Chr2:+161115283
5	CACTTGGAGGGGTGTCATAGAGG	0.5	4MMs [1:2:6:11]	AL772268.6	Chr11:-55192181

FIGs. 16A-16B

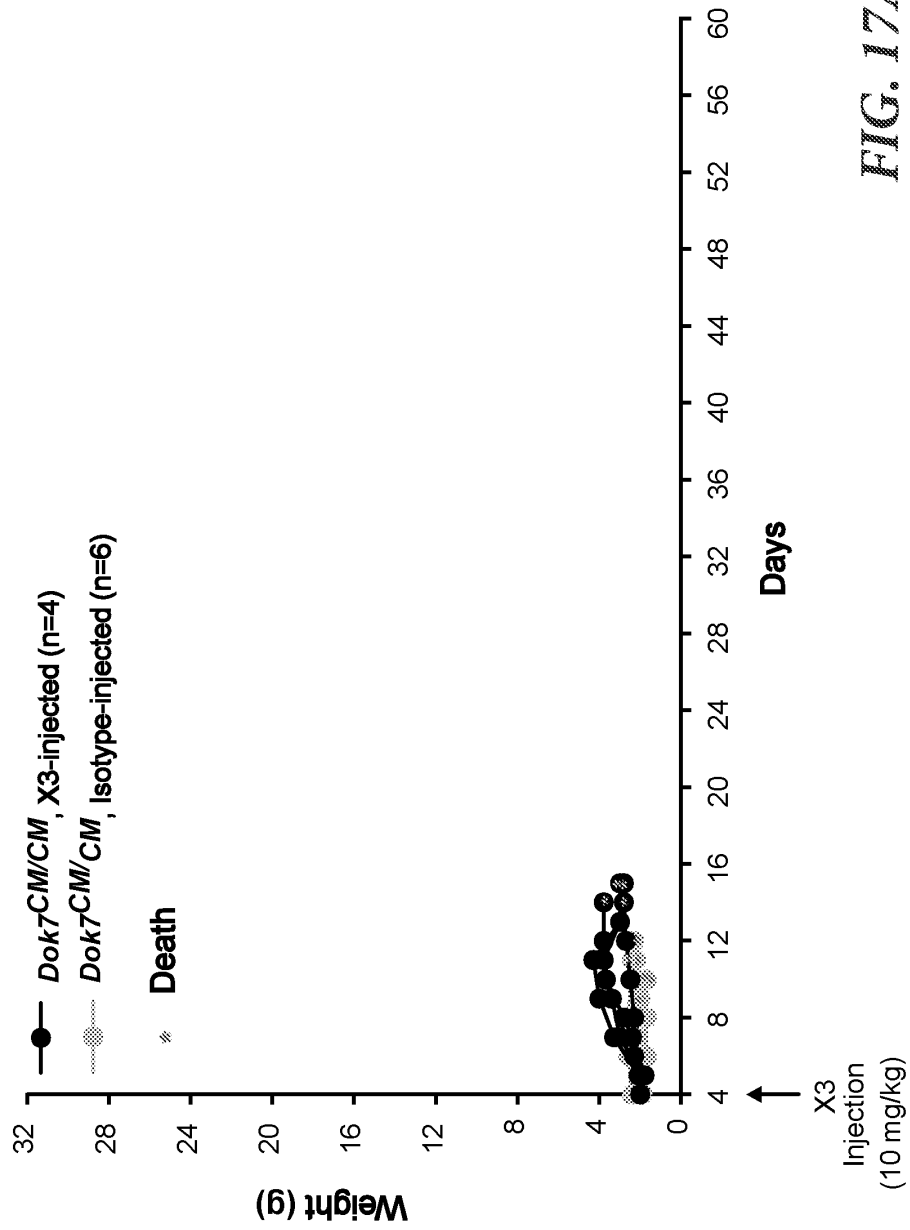
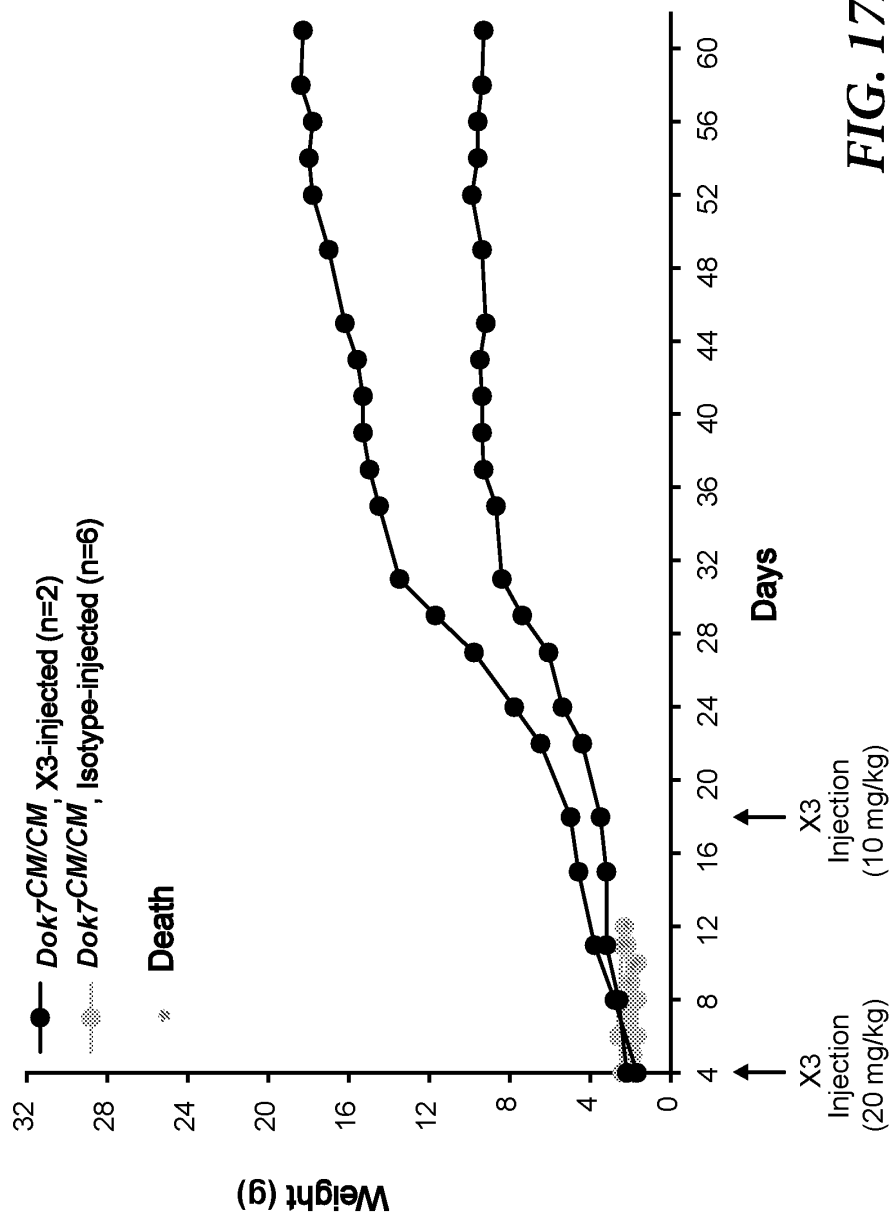


FIG. 17A

**FIG. 17B**

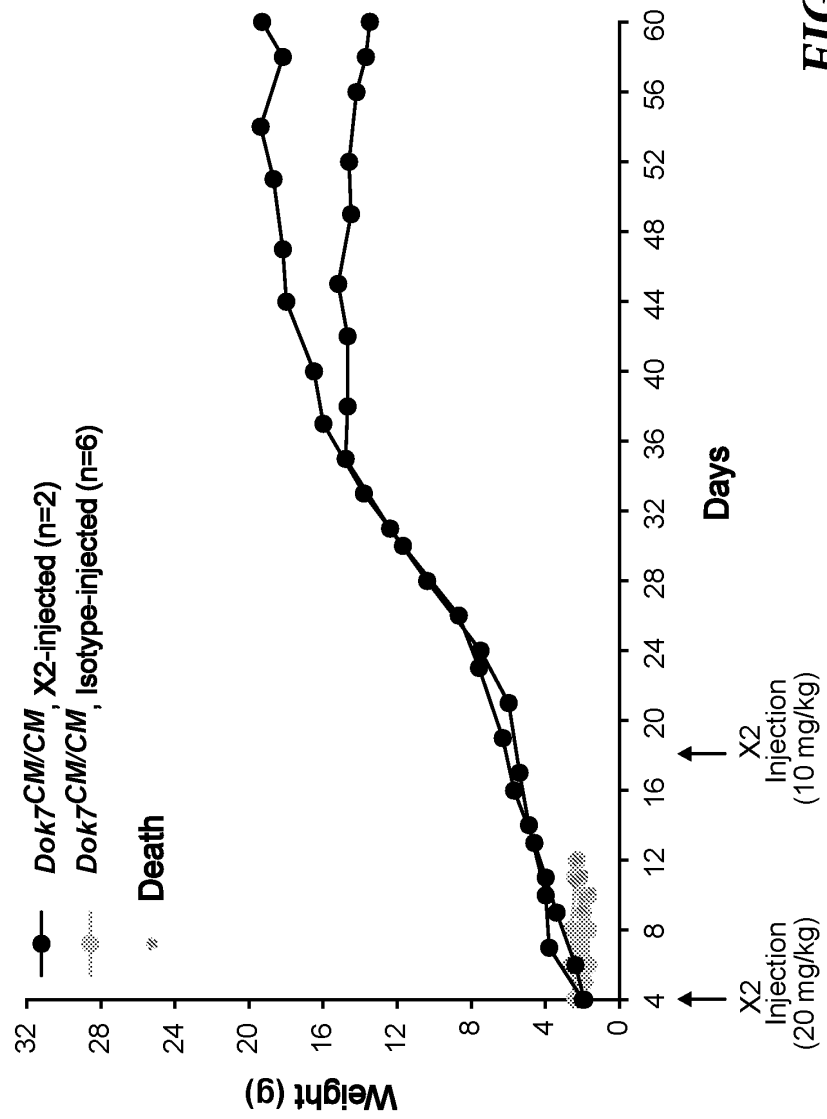


FIG. 17C

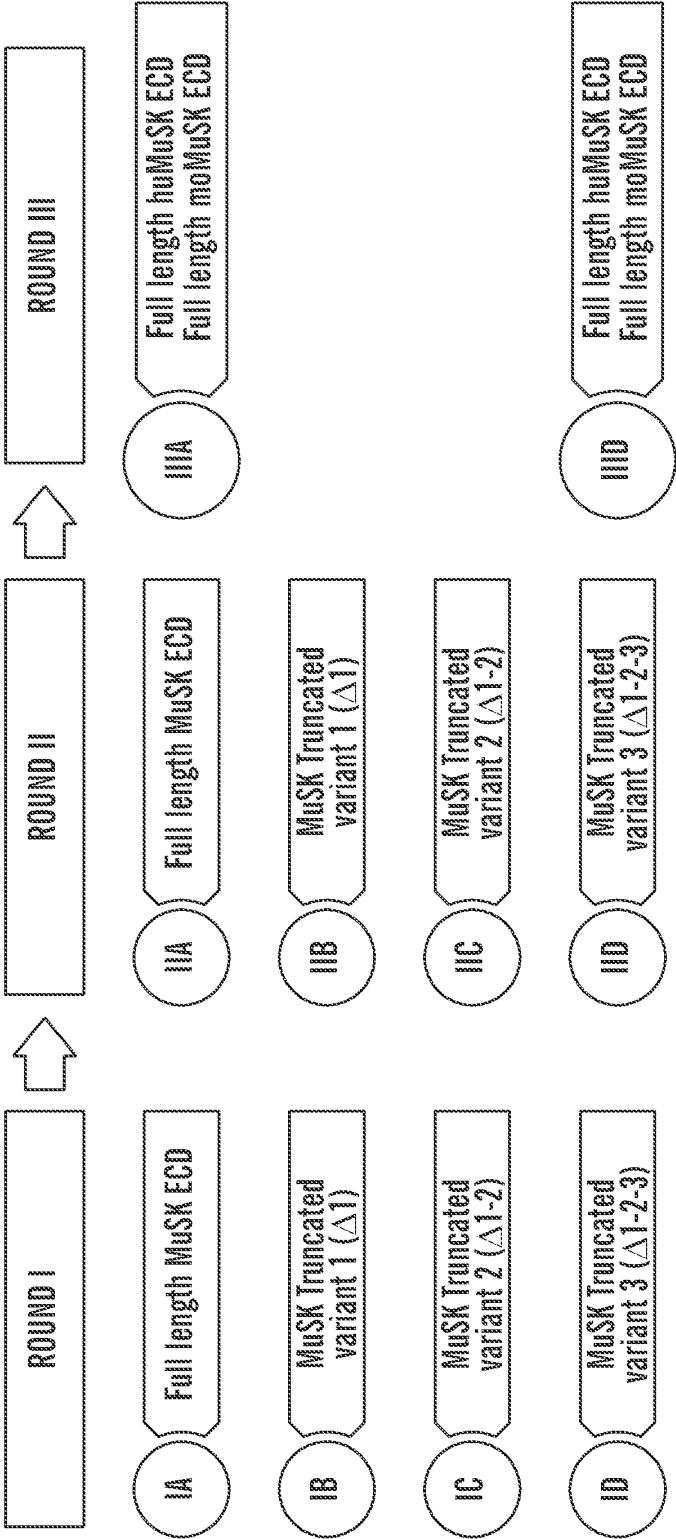
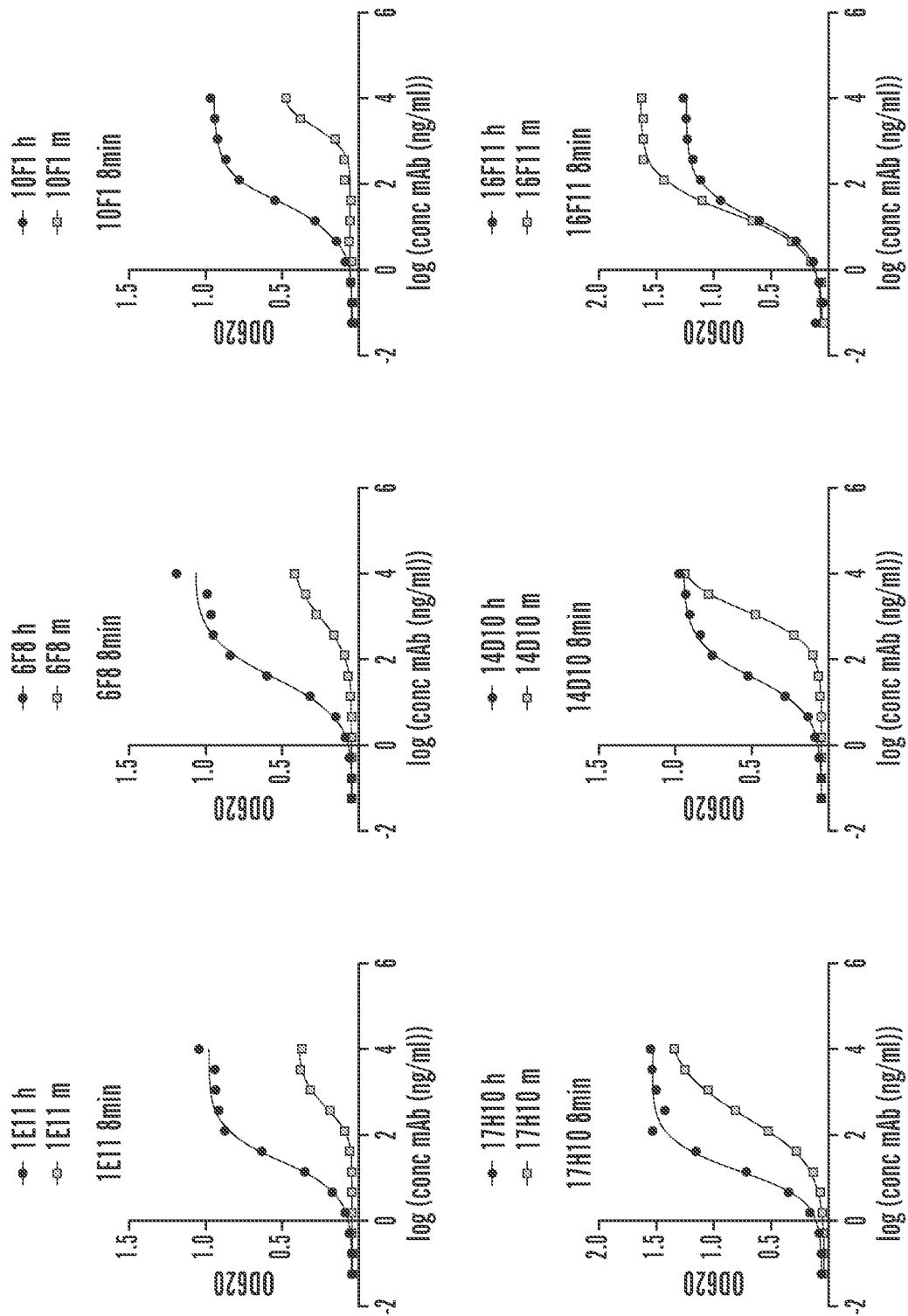
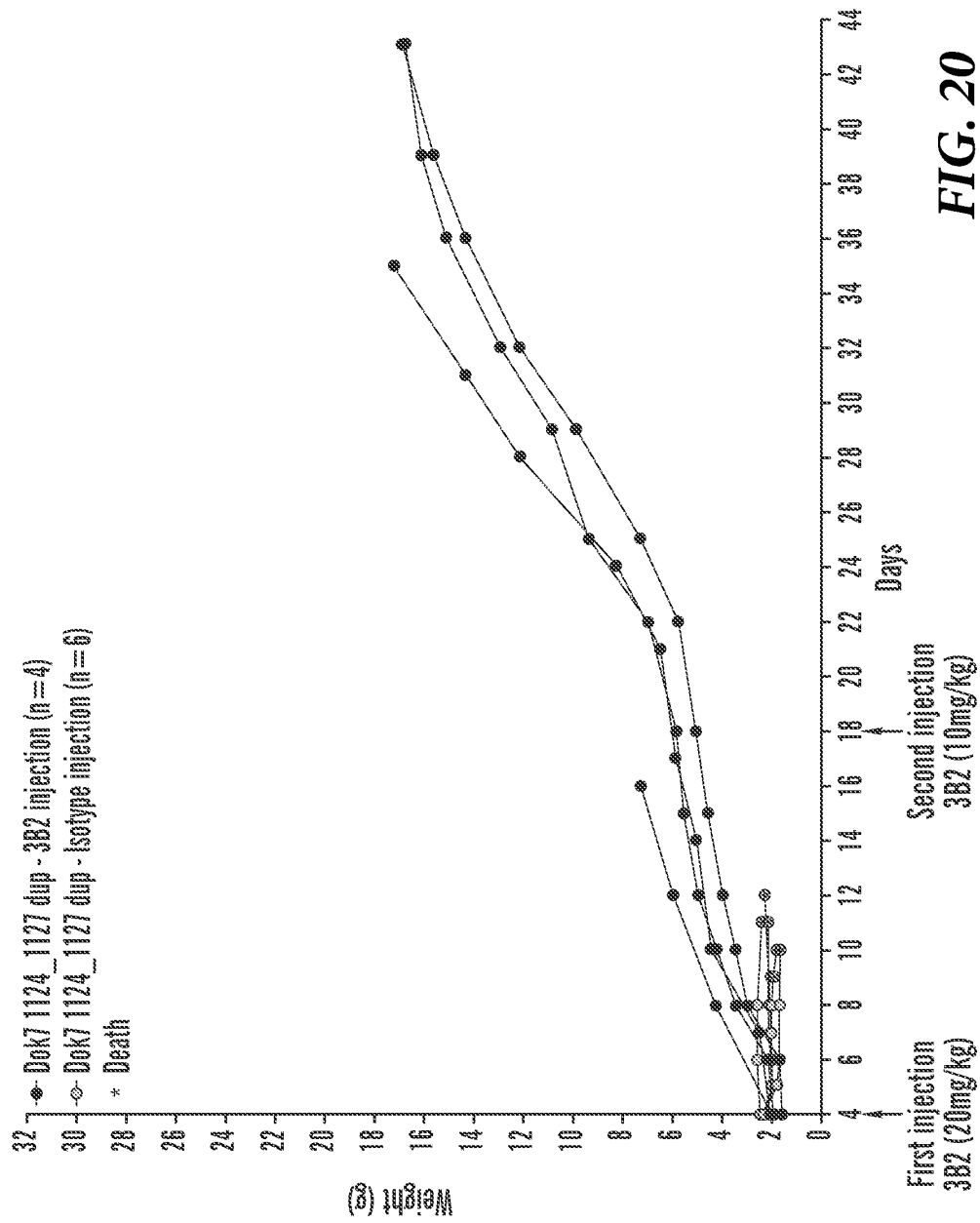


FIG. 18

**FIG. 19**



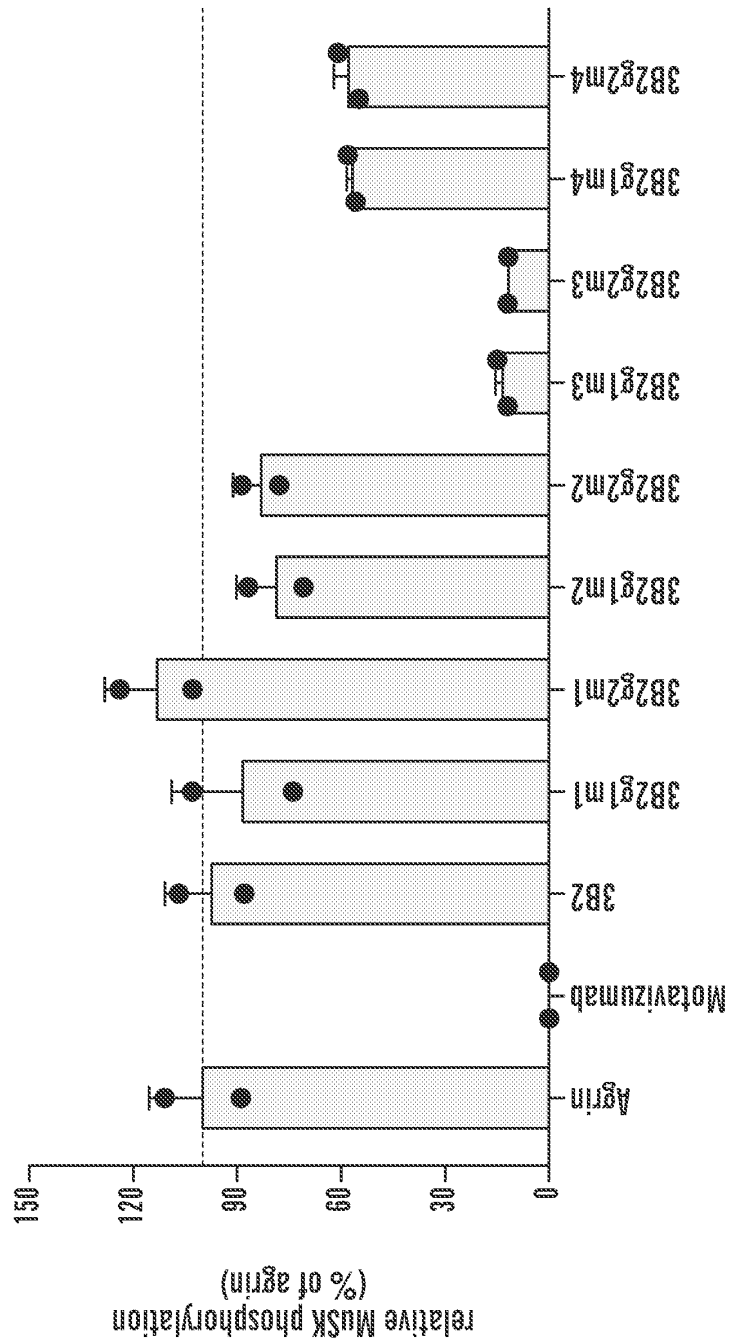
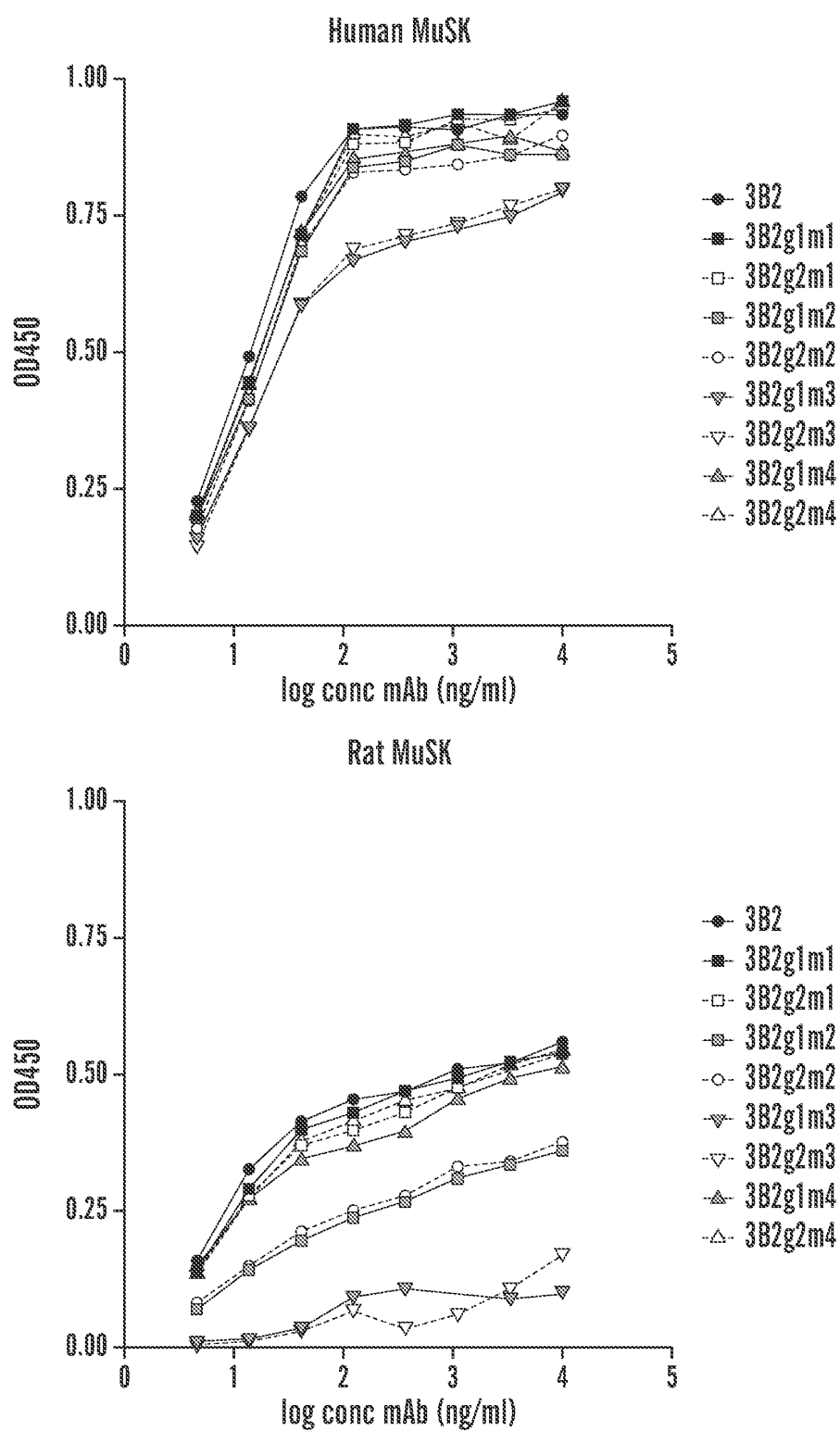
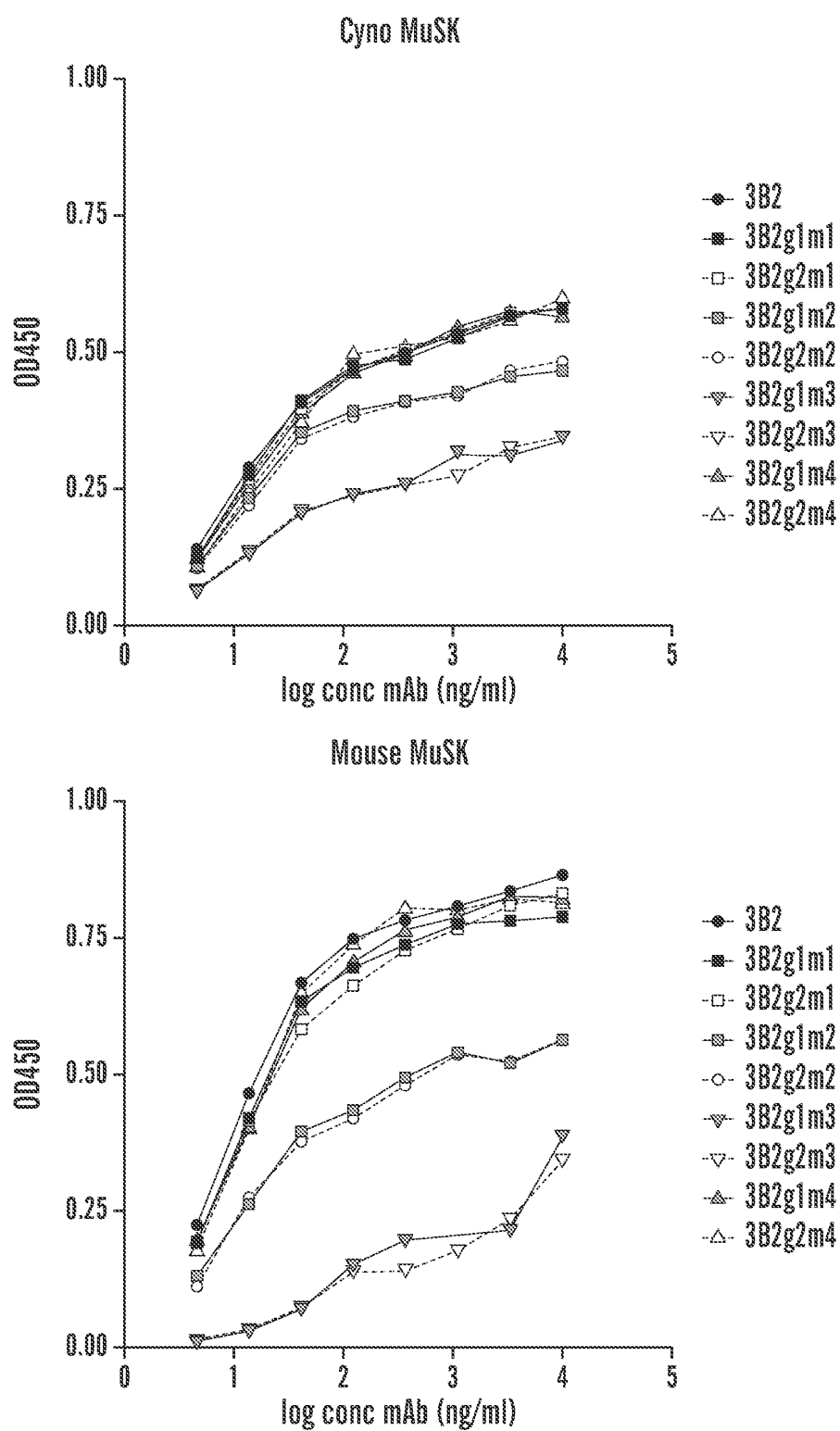
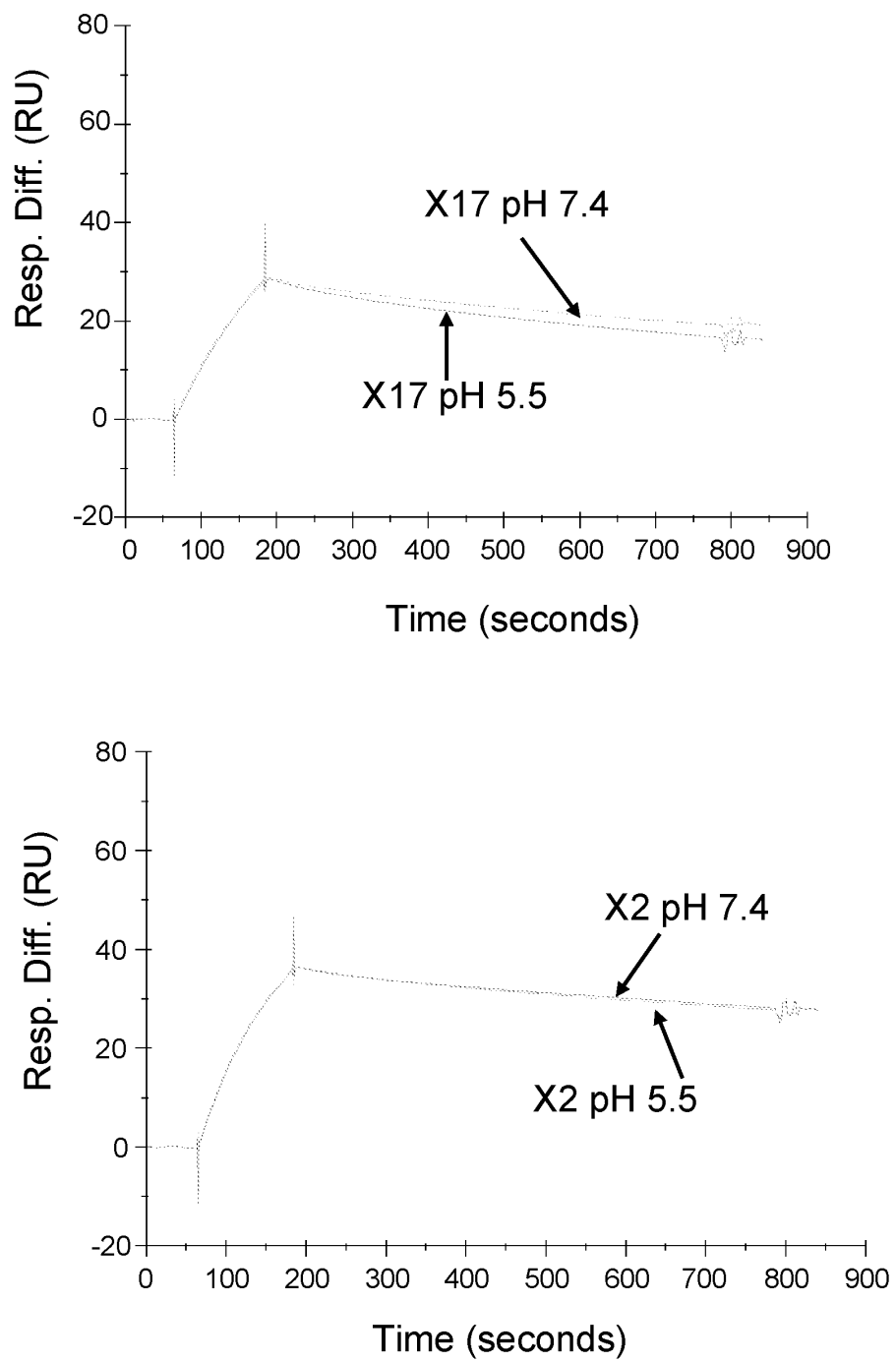
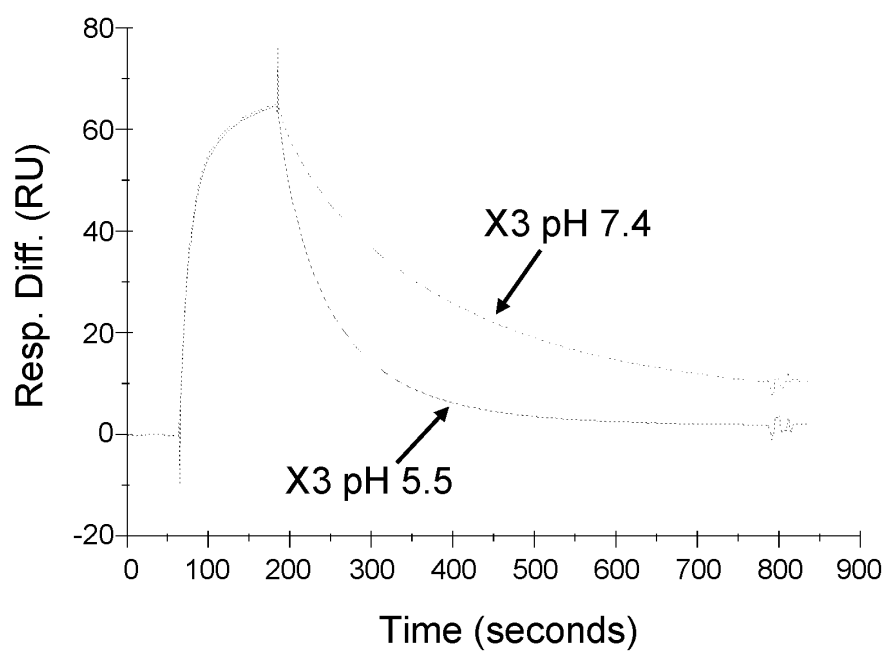
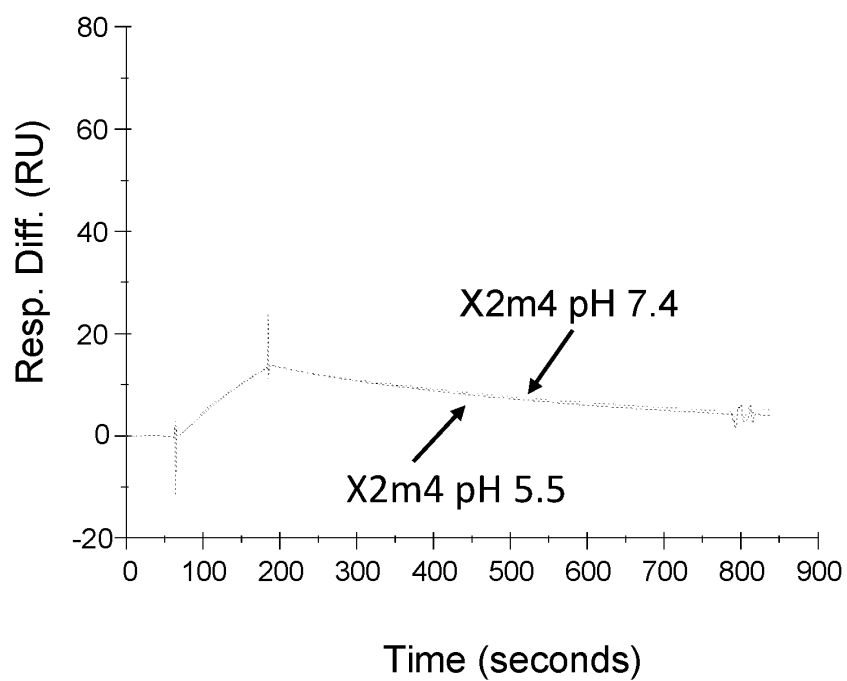


FIG. 21



**FIG. 22 (continued)**

**FIG. 23**

**FIG. 23 (continued)**

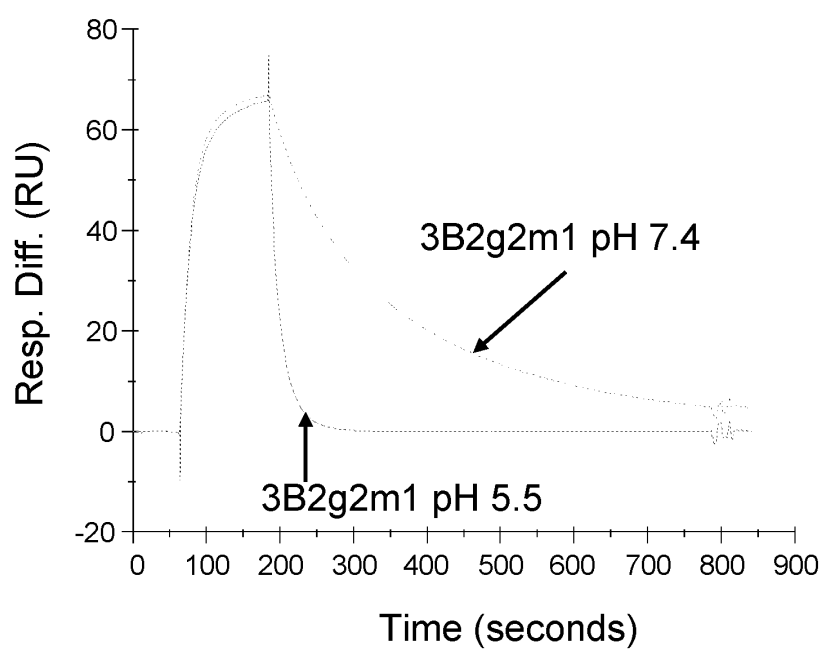
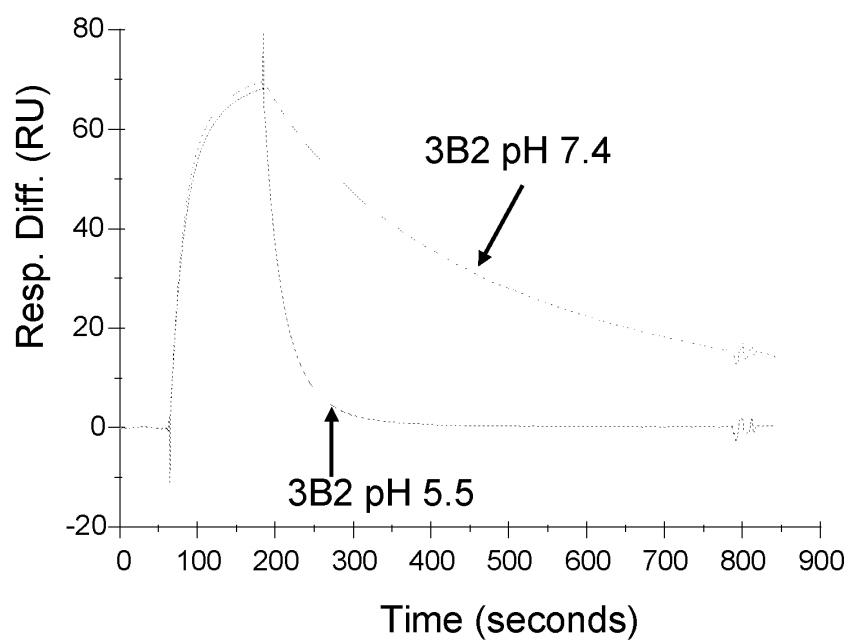


FIG. 23 (continued)

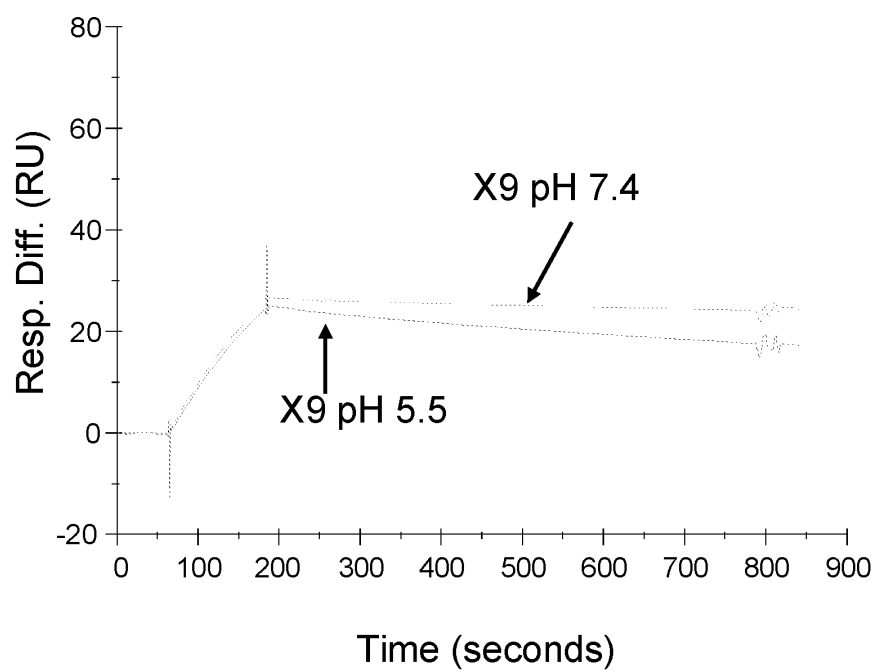


FIG. 23 (continued)

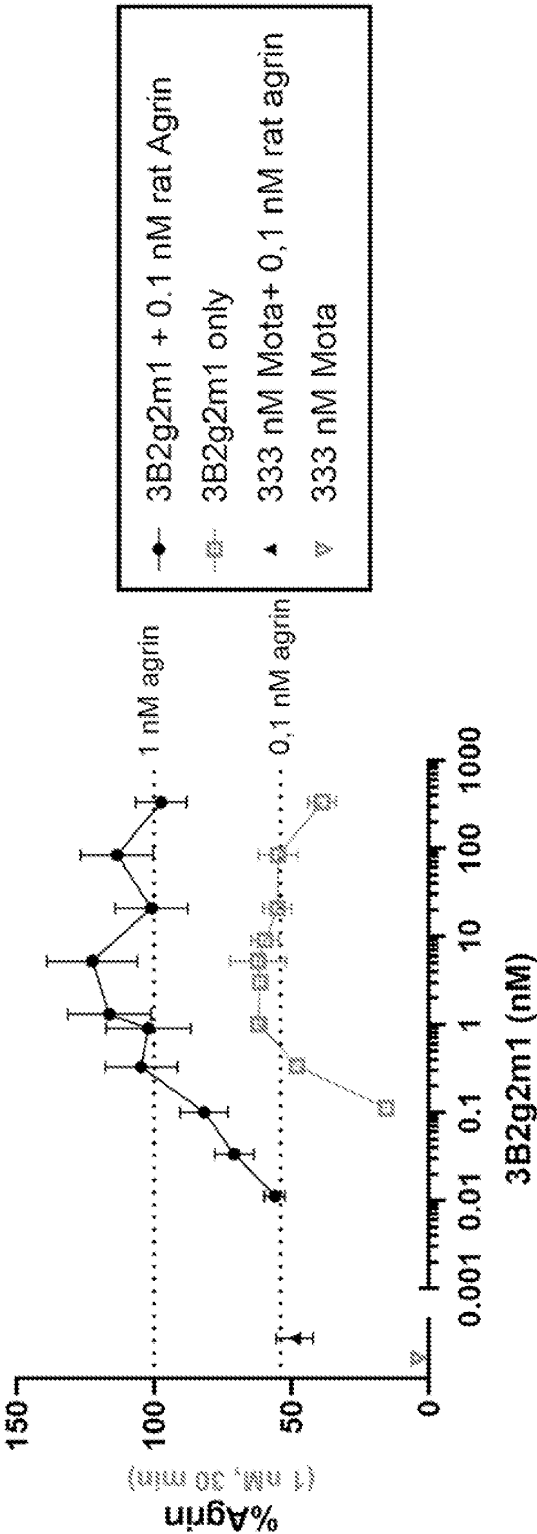
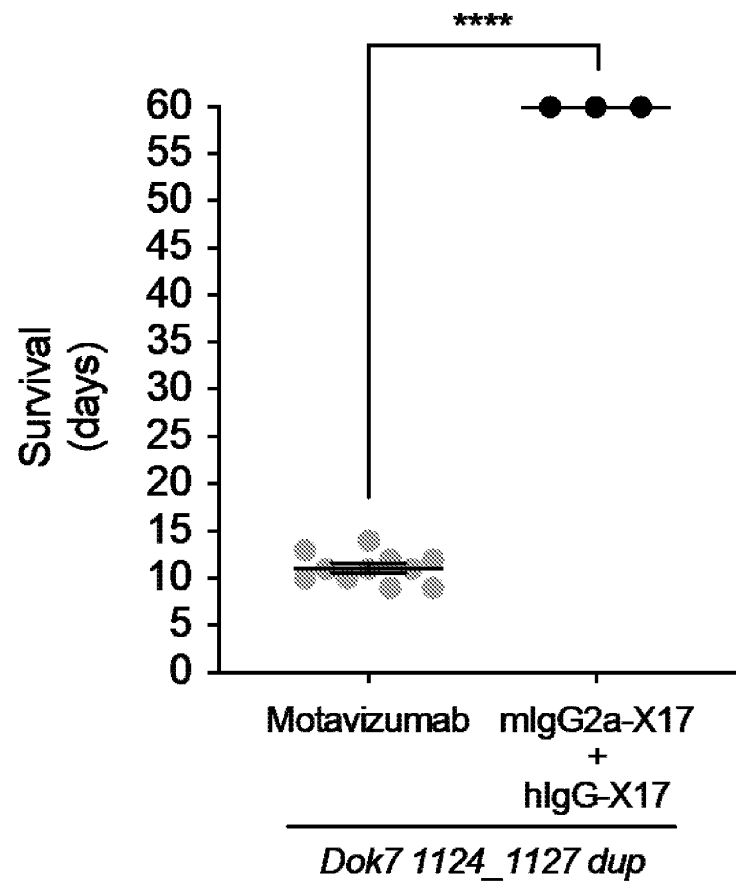
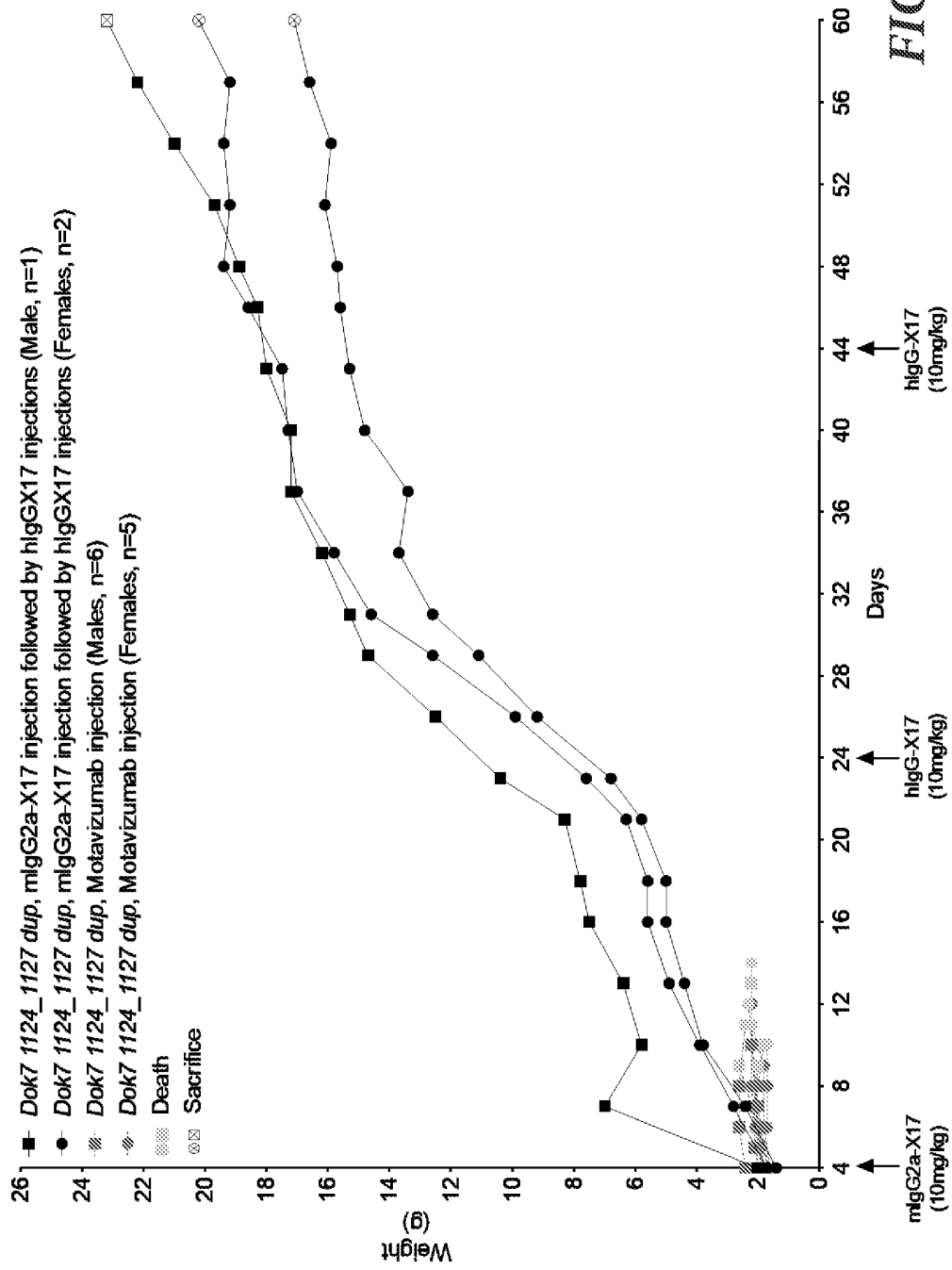


FIG. 24

**FIG. 25A**



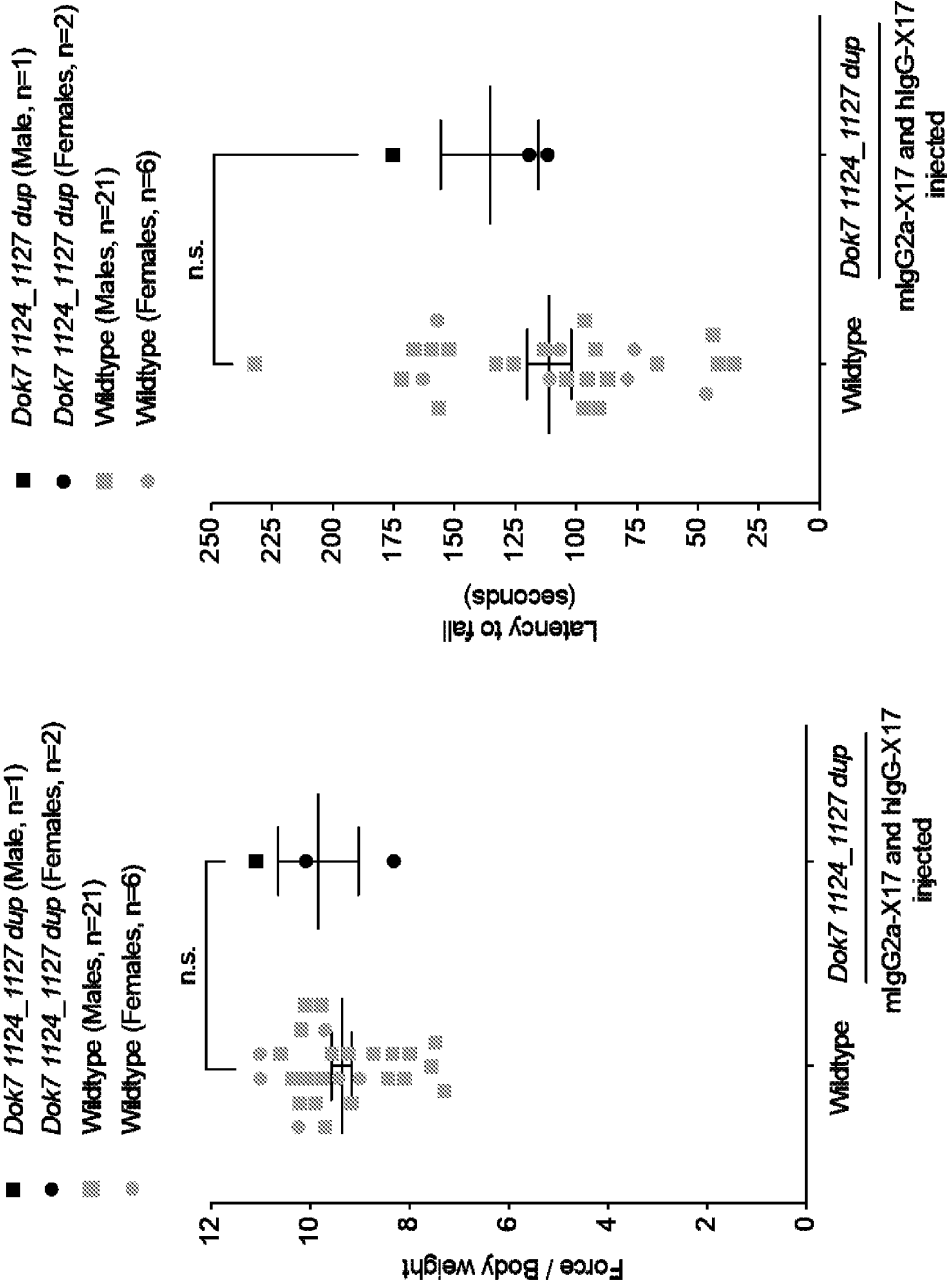


FIG. 26

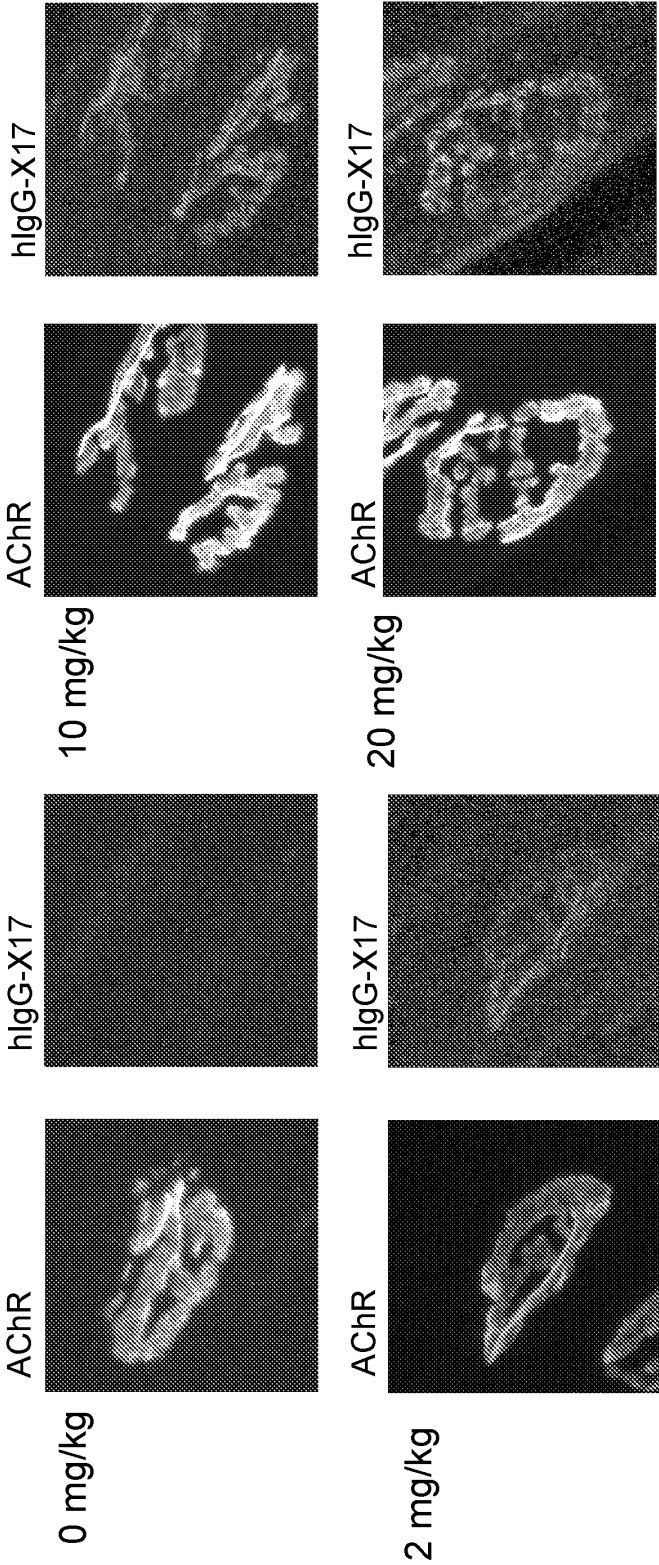
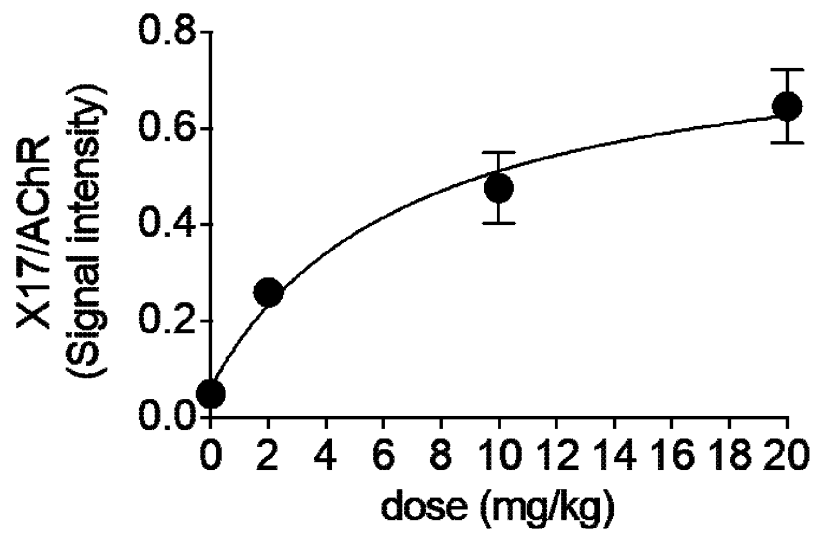
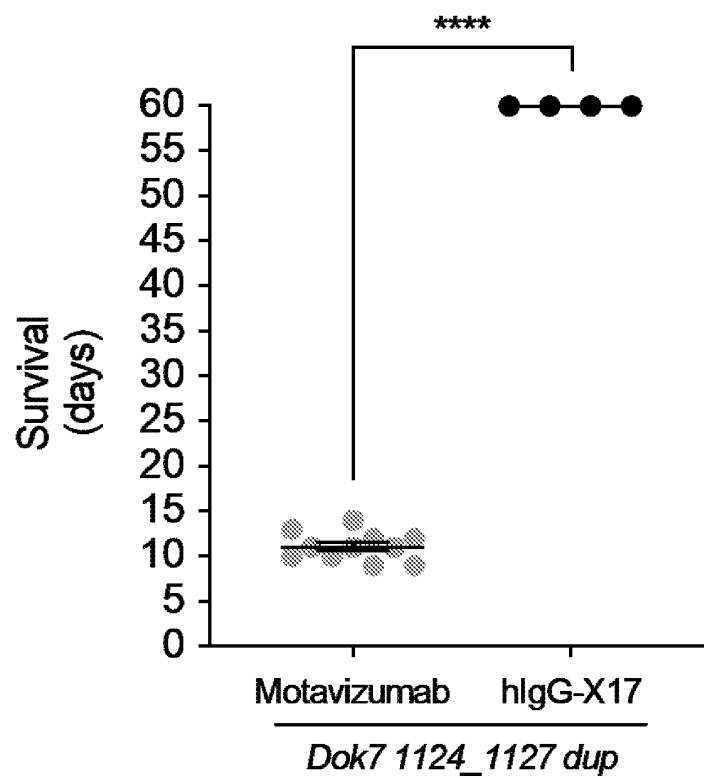
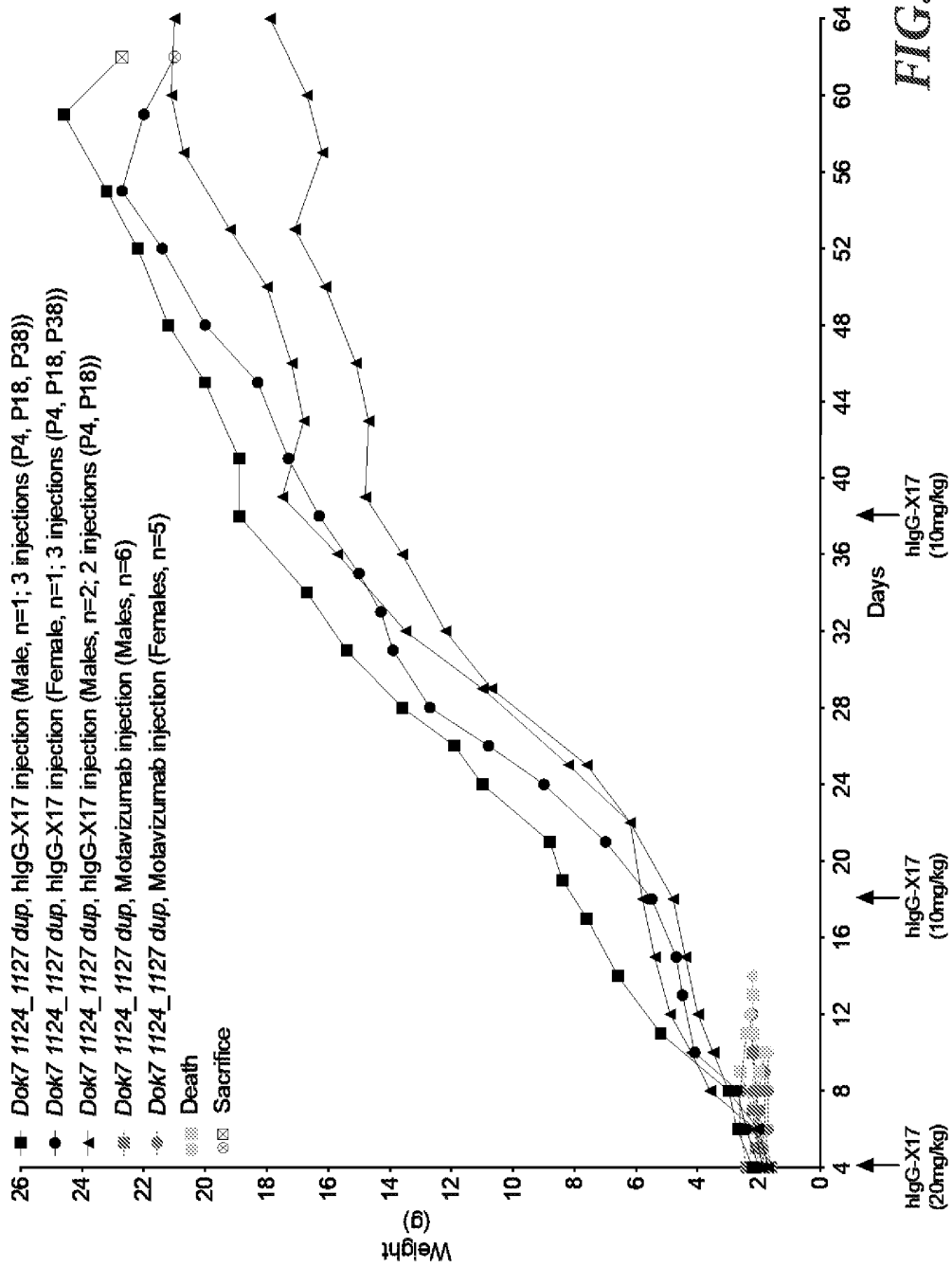
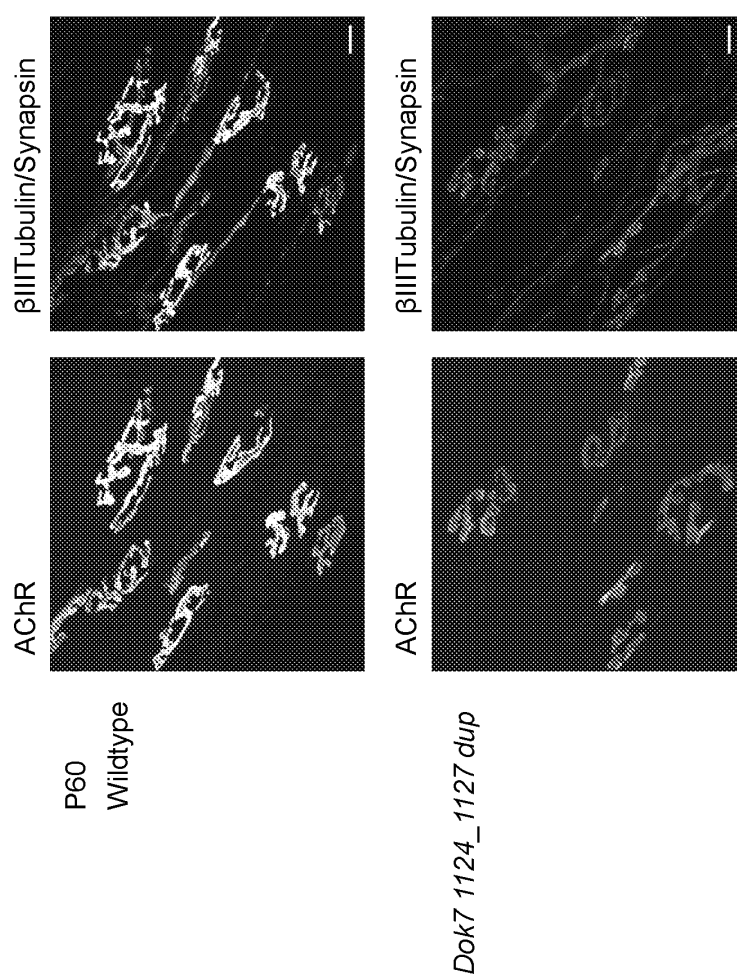


FIG. 27

*FIG. 27 (continued)**FIG. 28A*





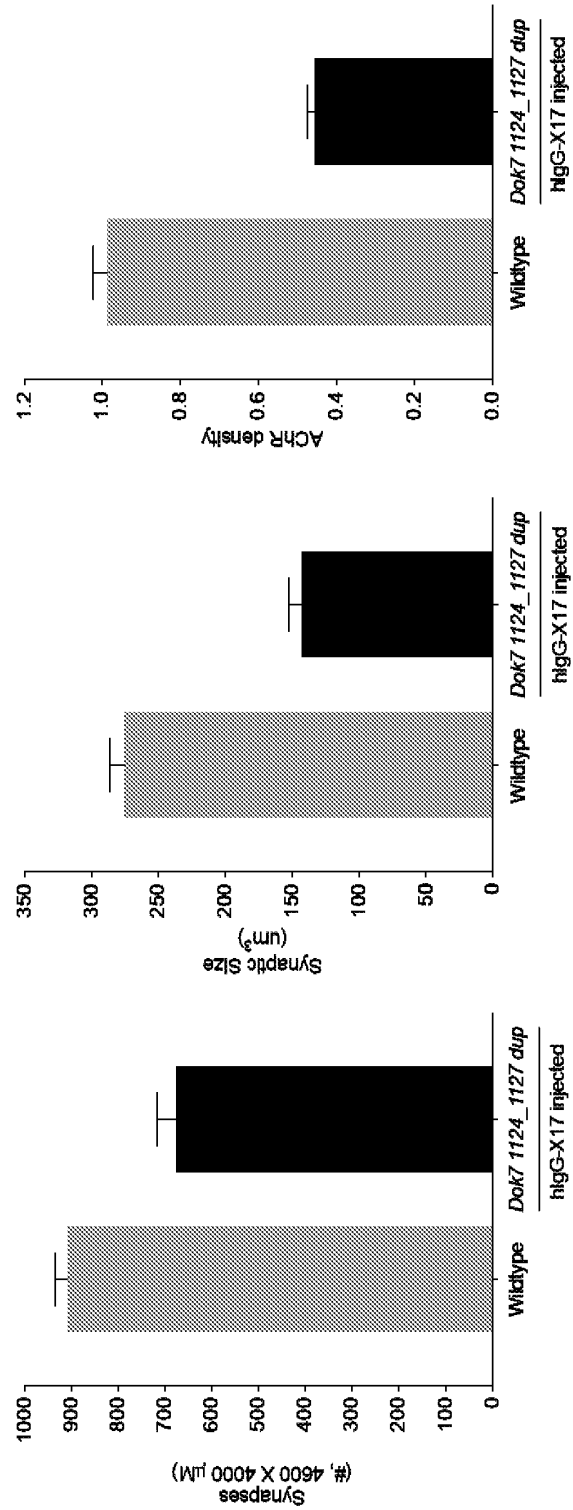


FIG. 29 (continued)

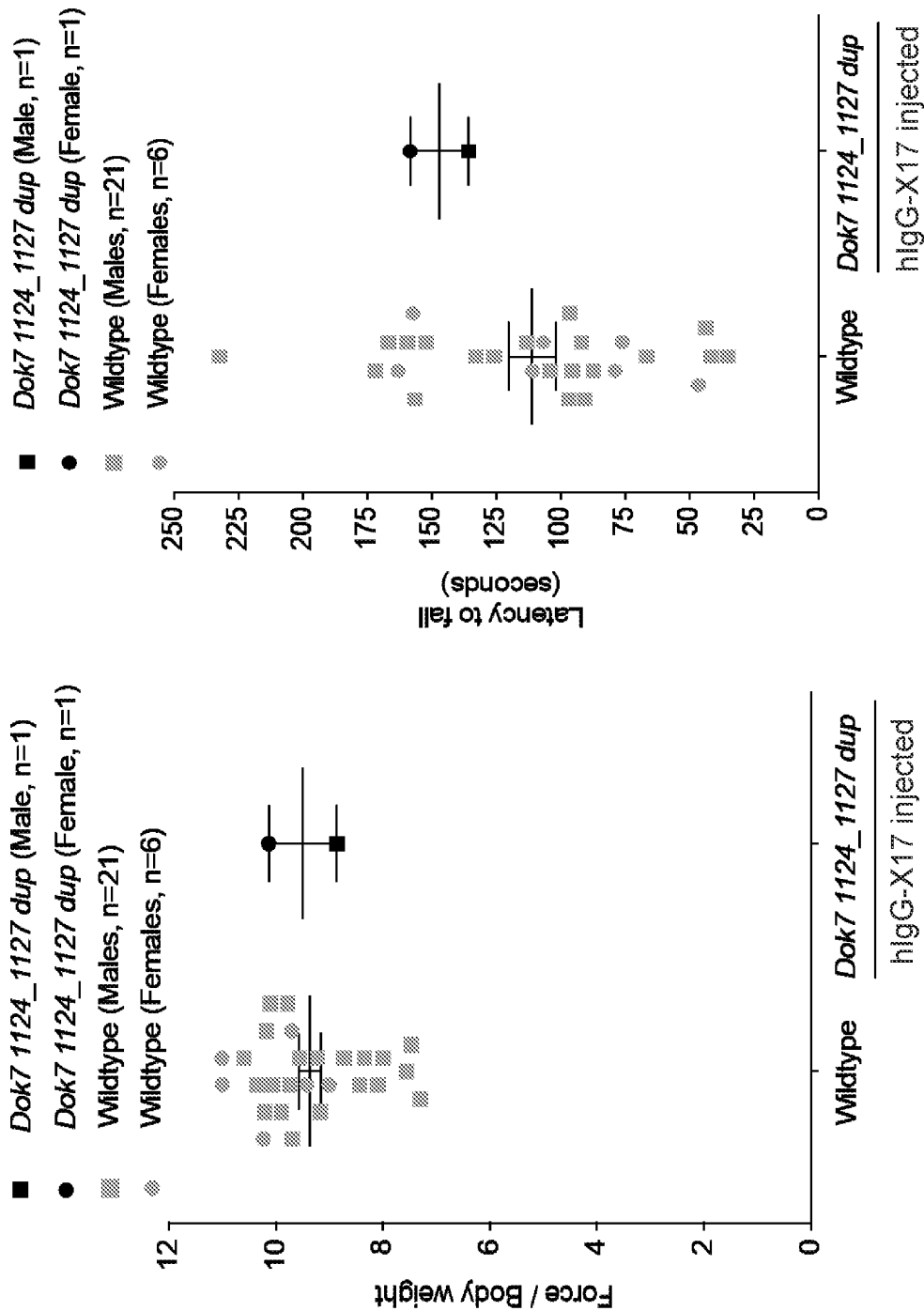
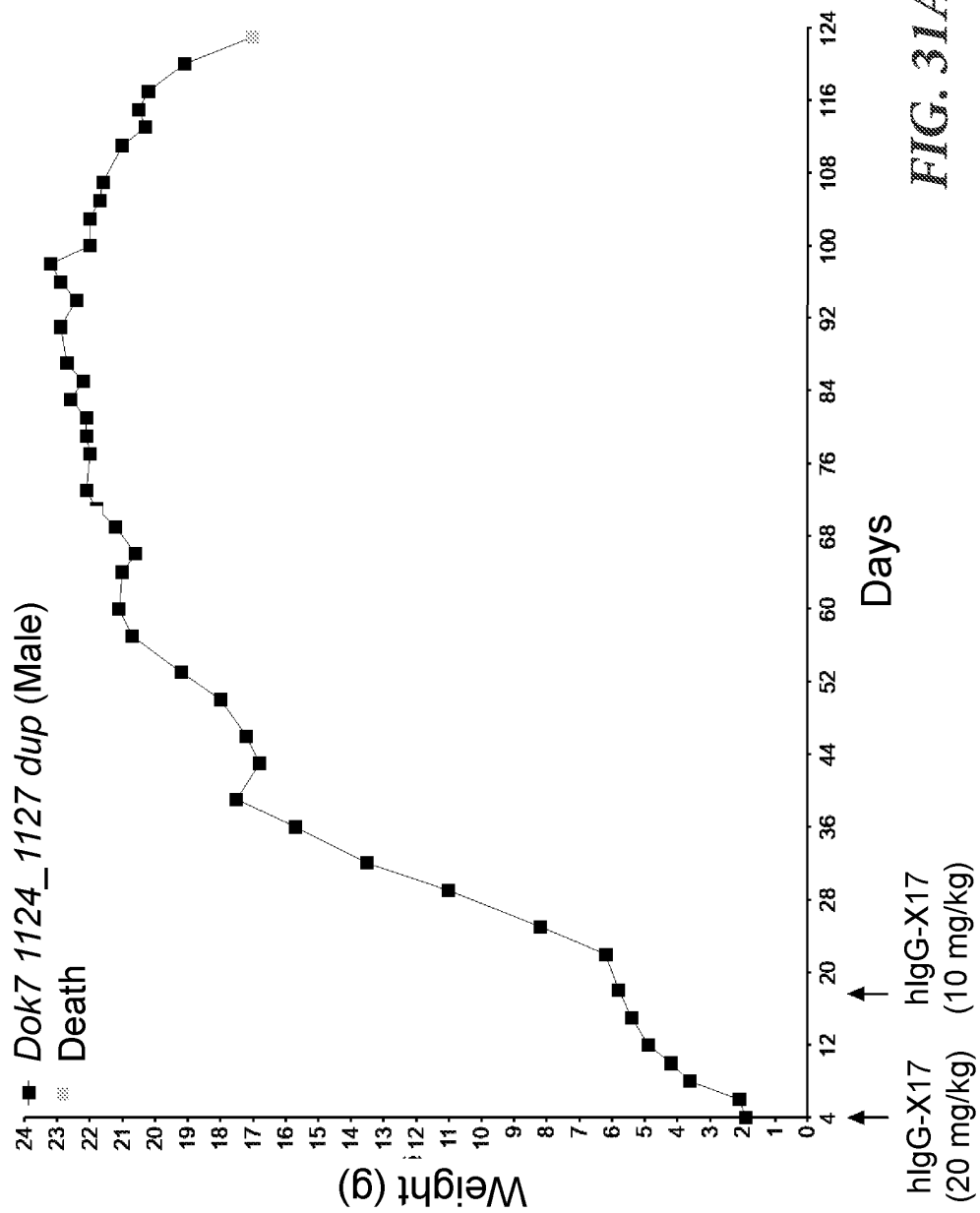


FIG. 30



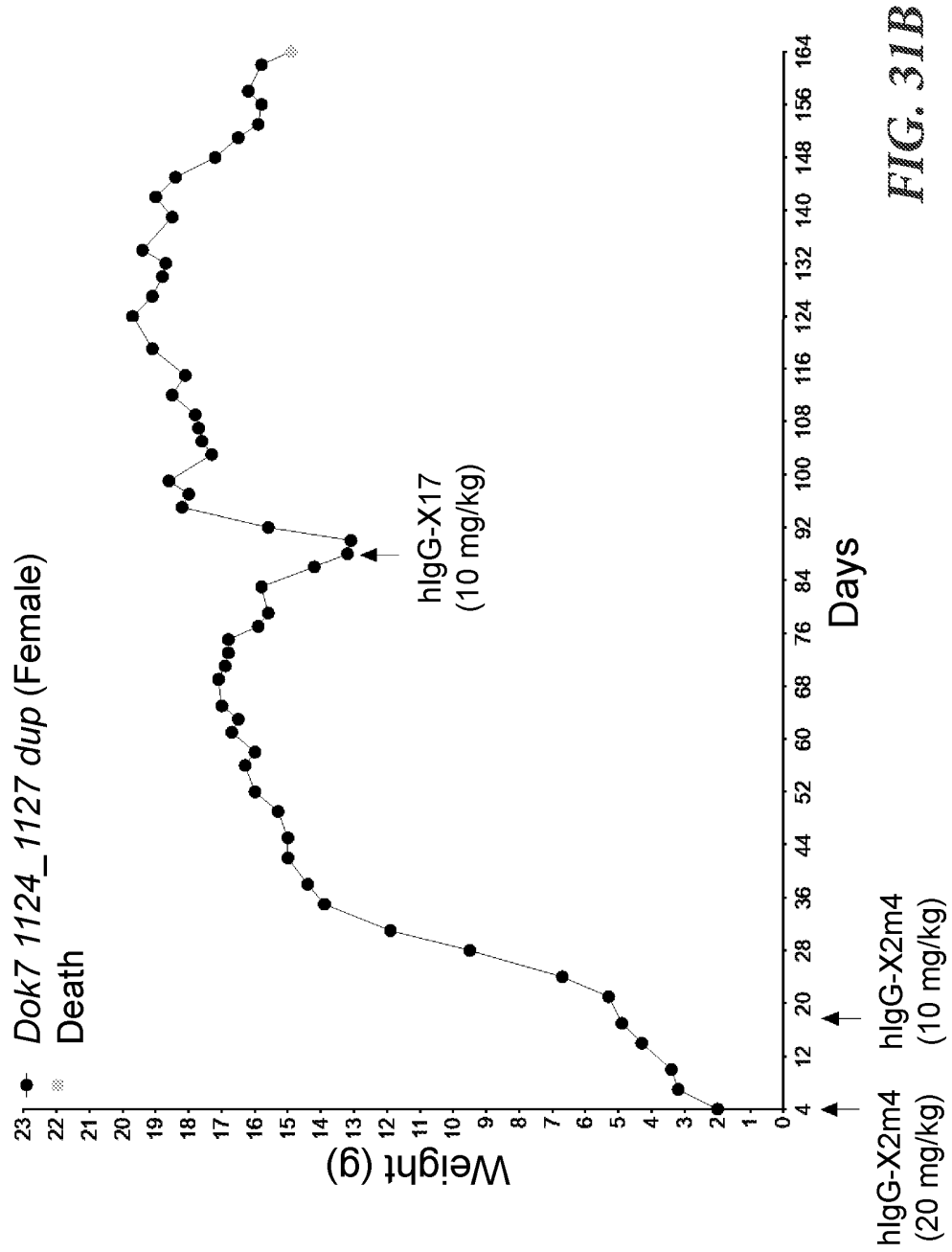
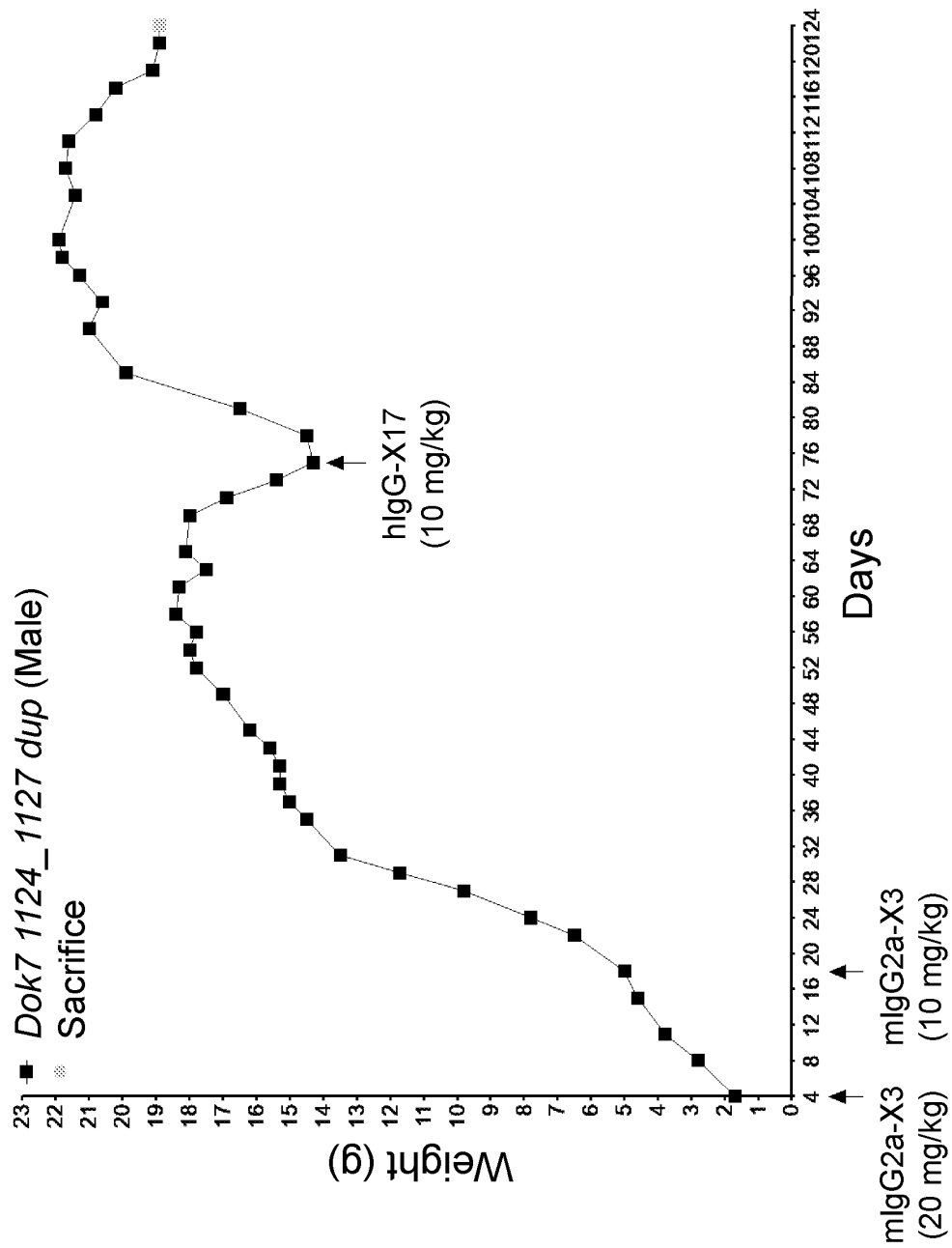
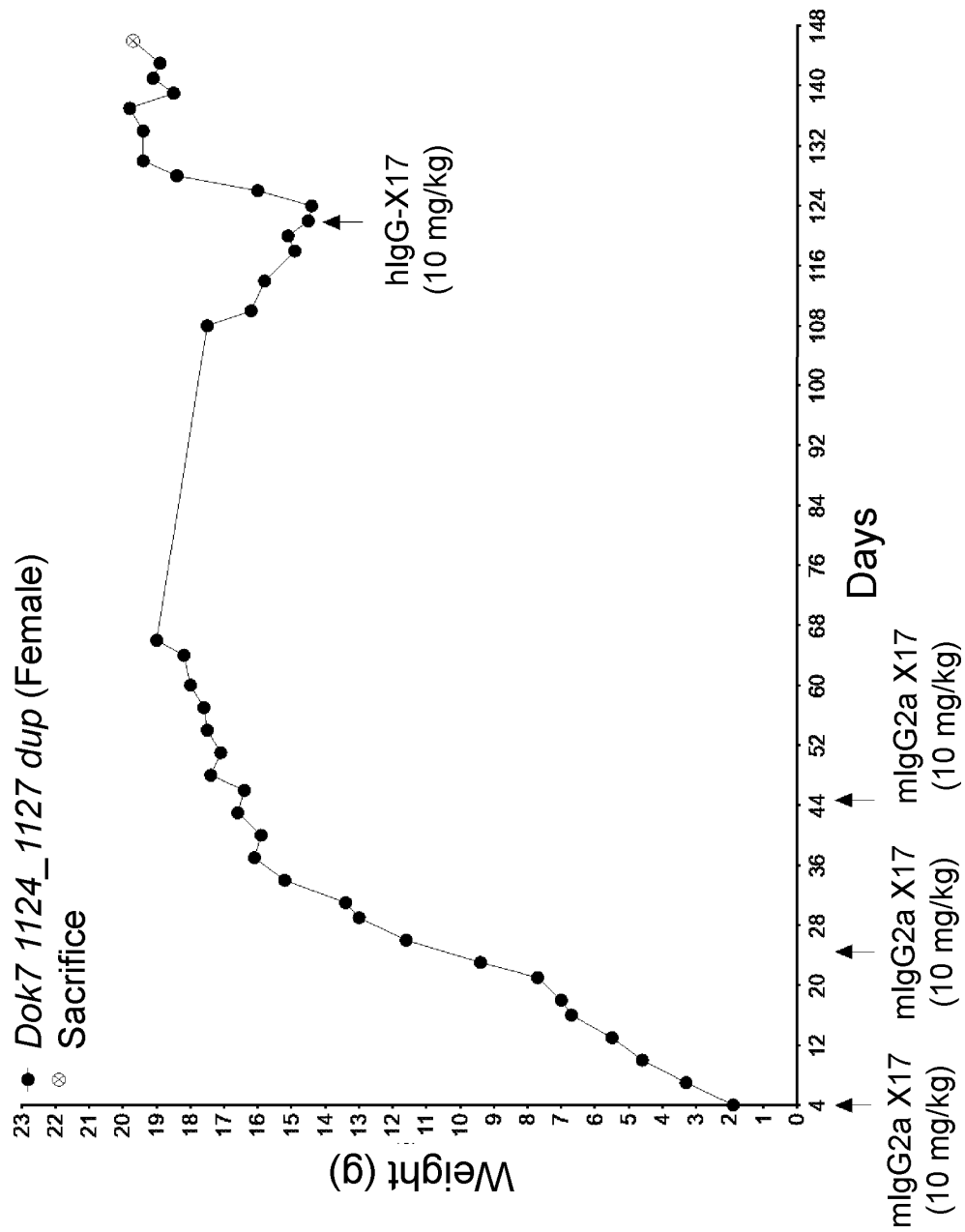


FIG. 31B

**FIG. 31B (continued)**

*FIG. 31B (continued)*

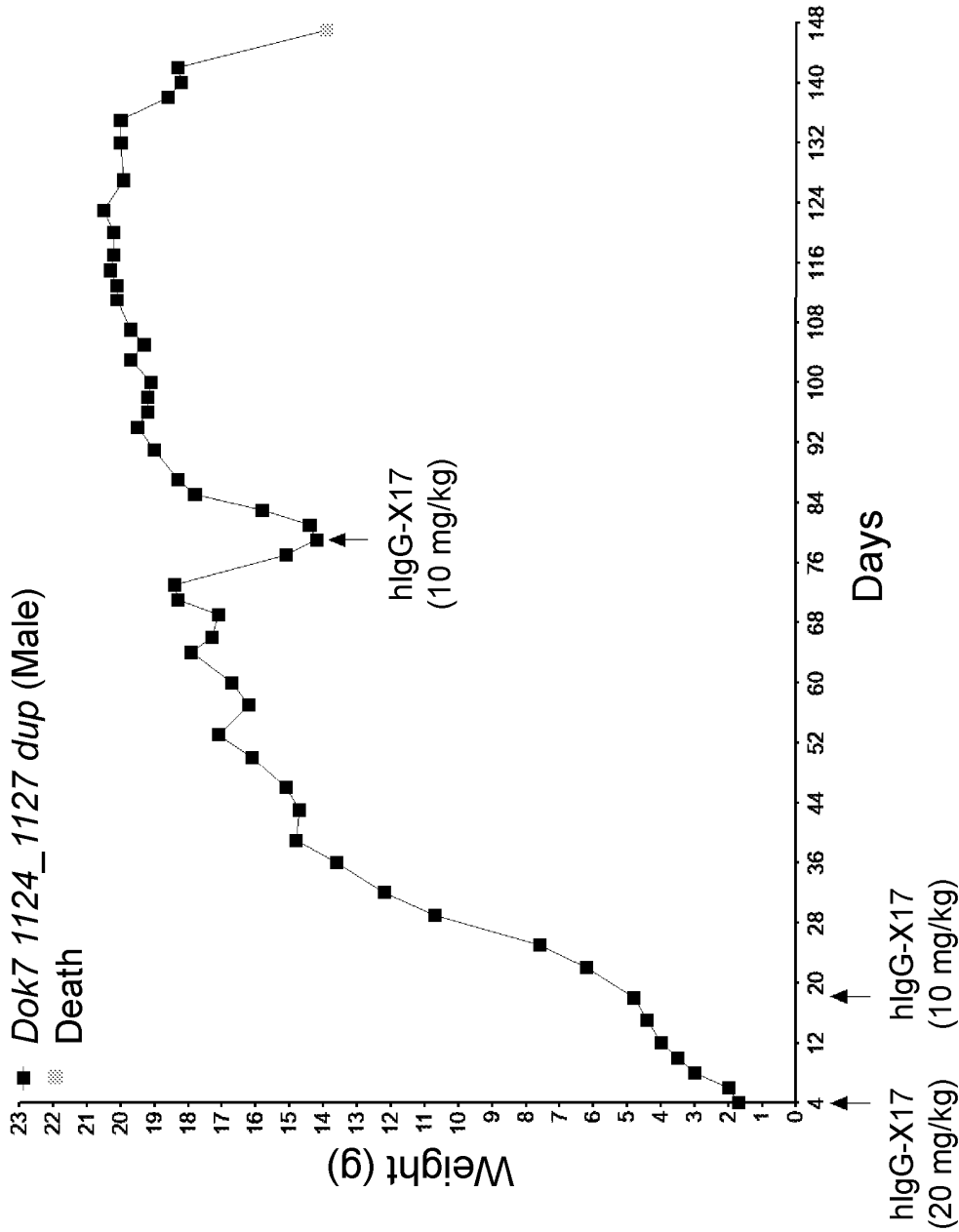
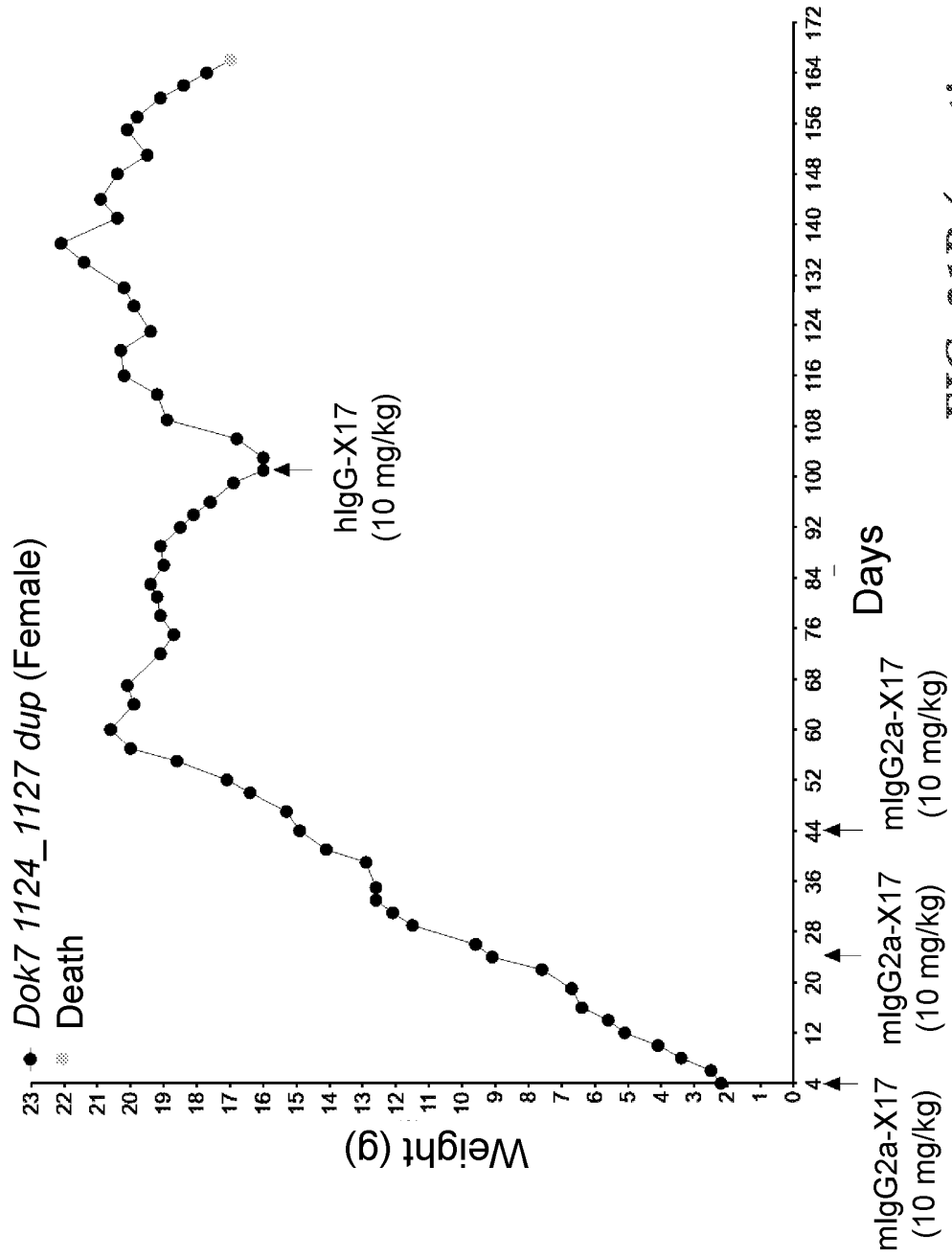


FIG. 31B (continued)

*FIG. 31B (continued)*

- *Dok7* 1124_1127 dup (Male, n=1)
- *Dok7* 1124_1127 dup (Females, n=2)
- ▤ Wildtype (Males, n=2)
- Wildtype (Females, n=2)

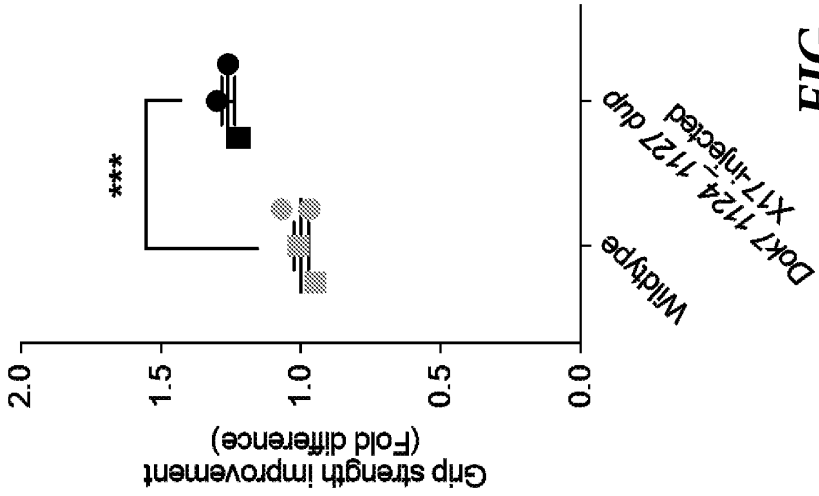
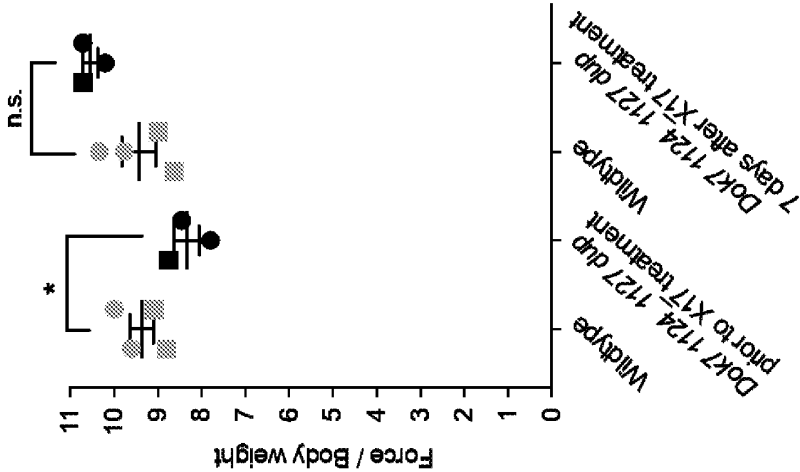


FIG. 31C

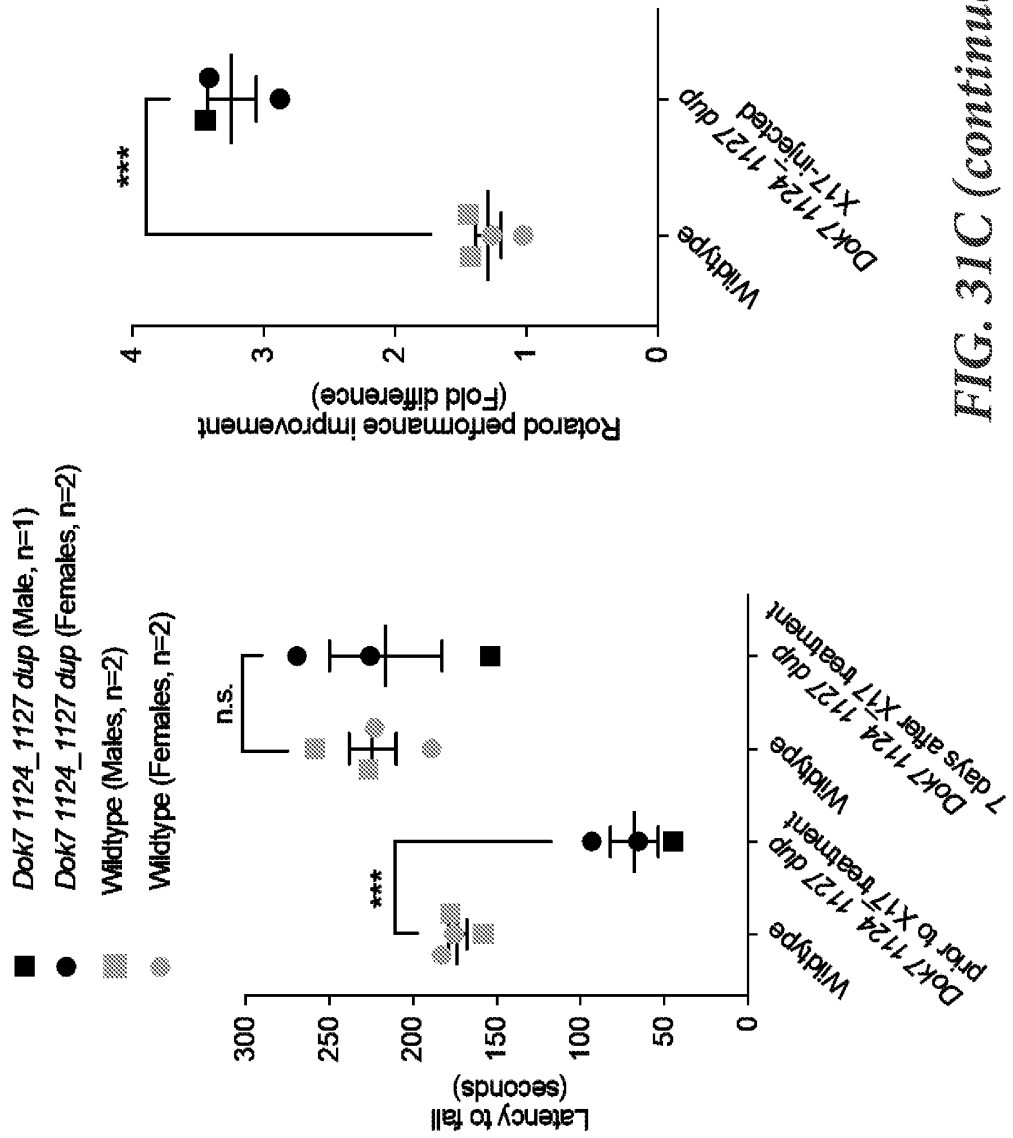
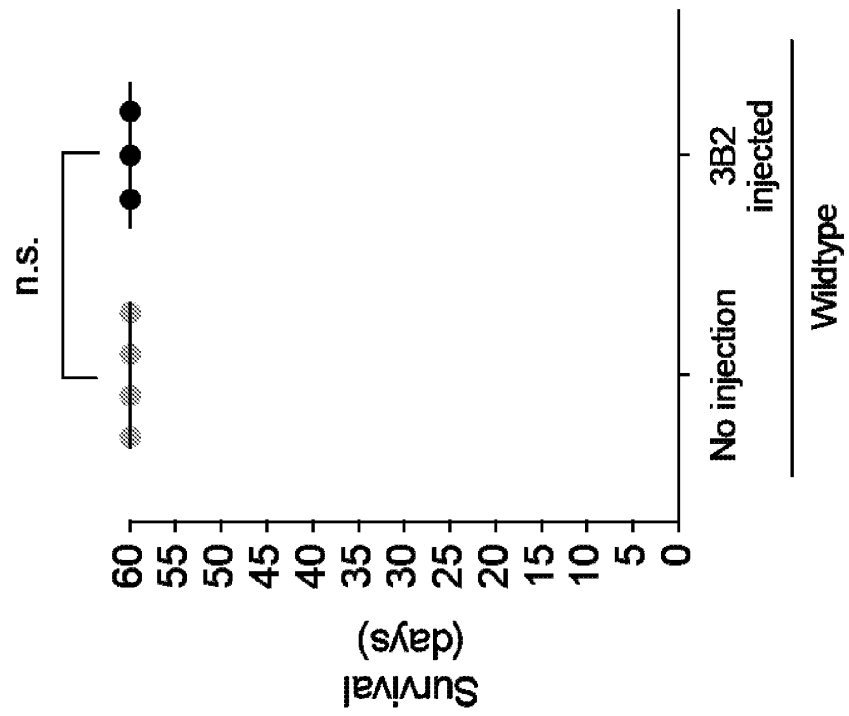


FIG. 31C (continued)

**FIG. 32A**

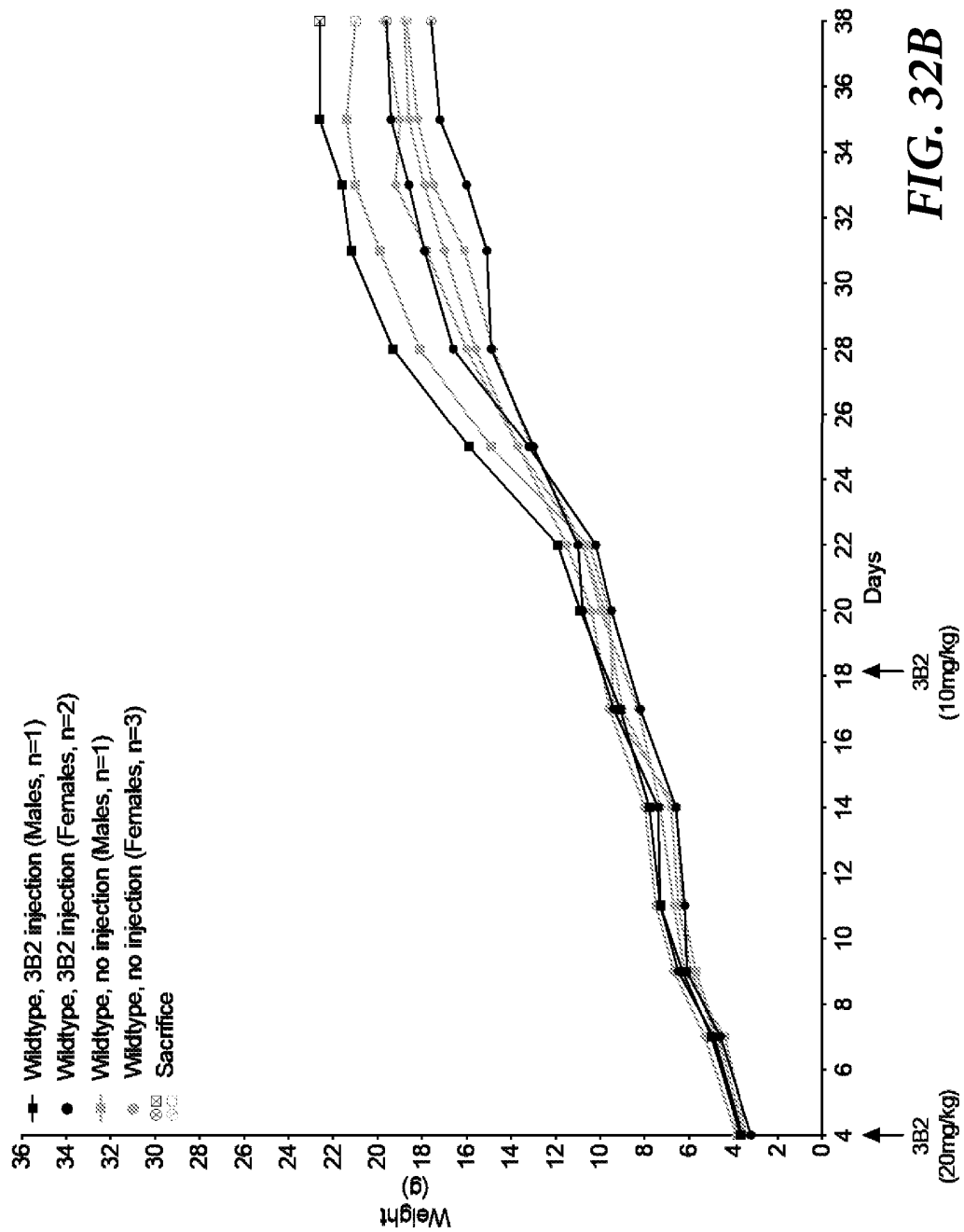
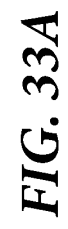
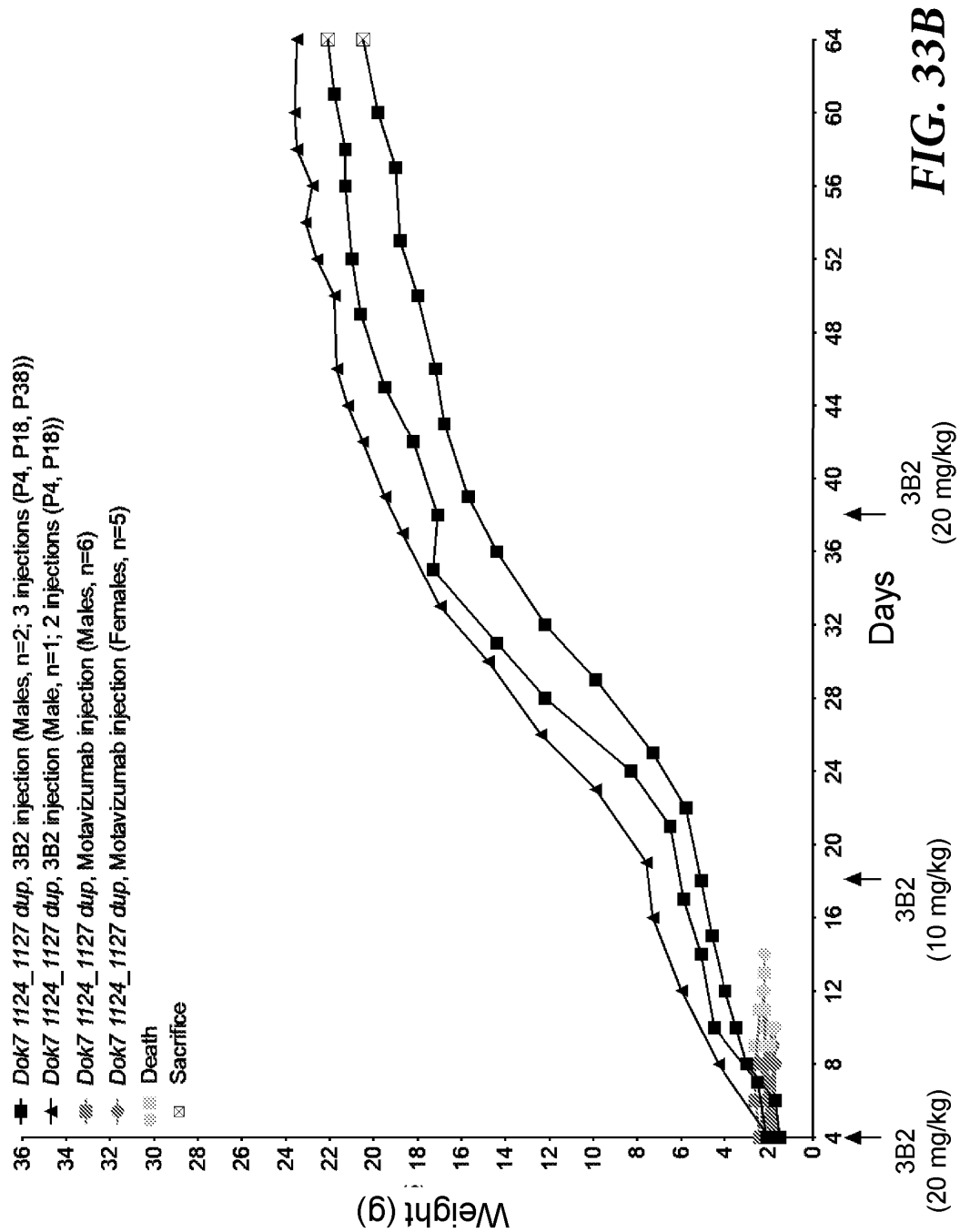
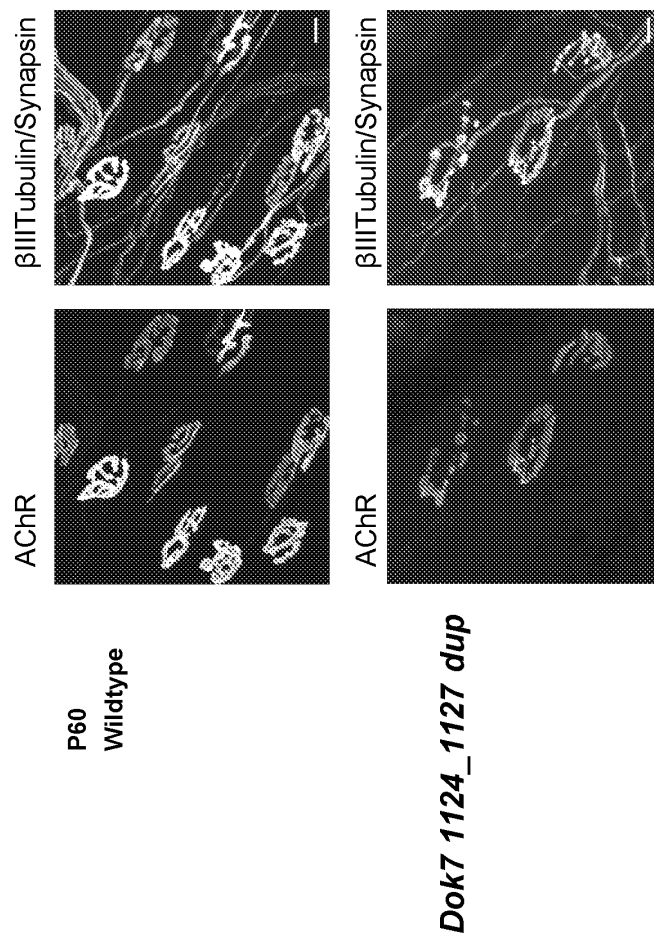


FIG. 32B





**FIG. 34**

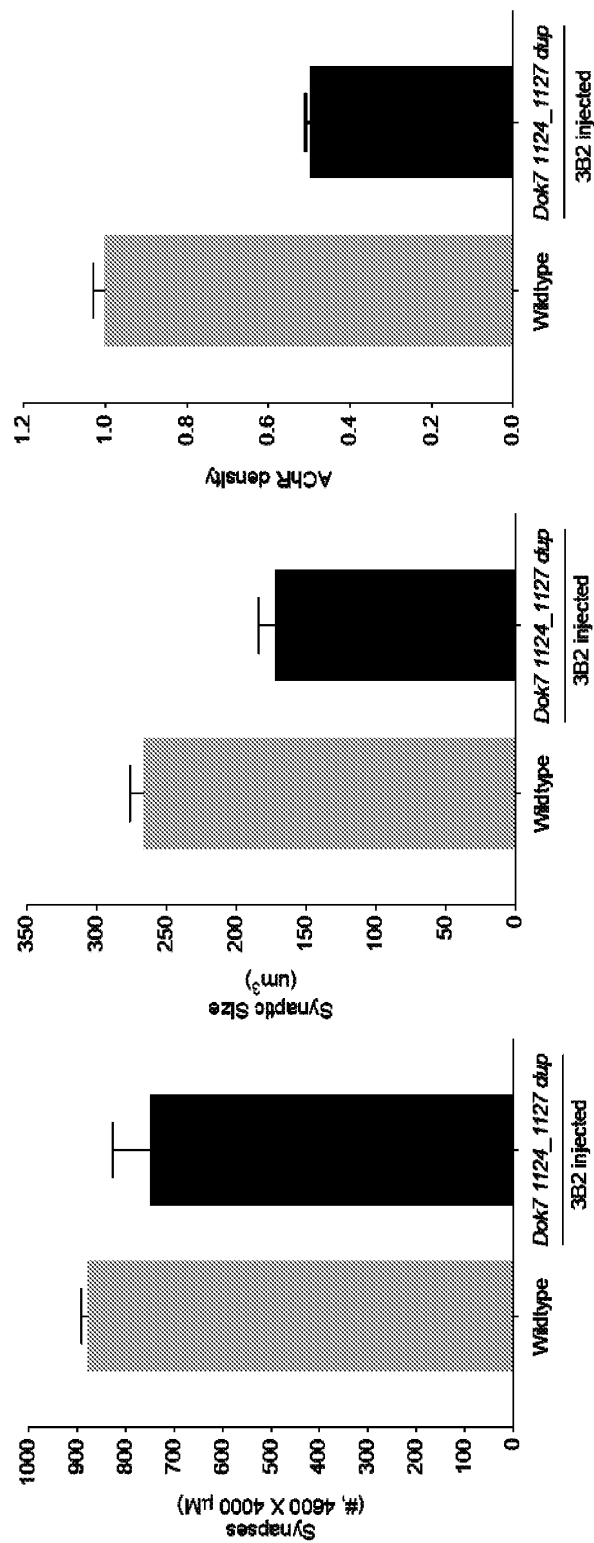


FIG. 34 (continued)

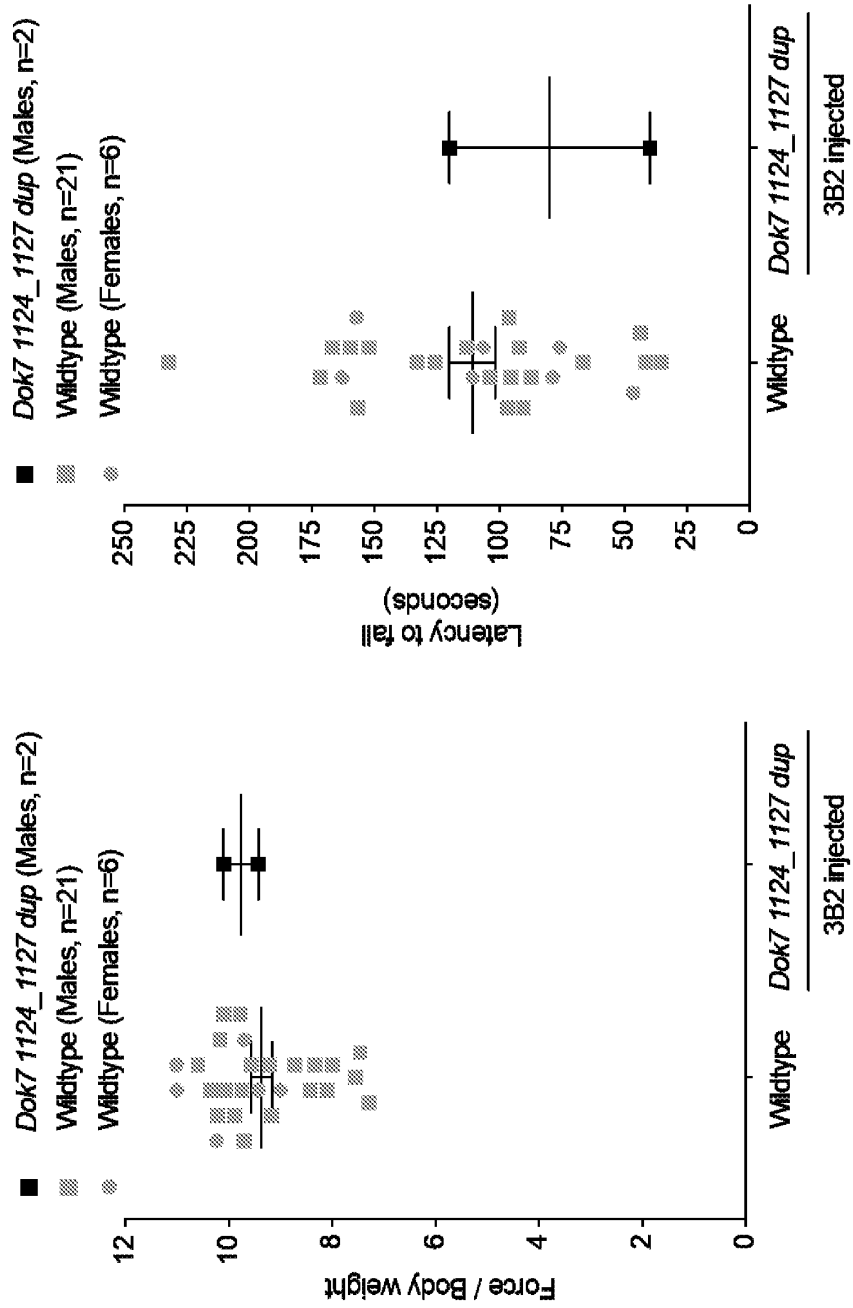


FIG. 35

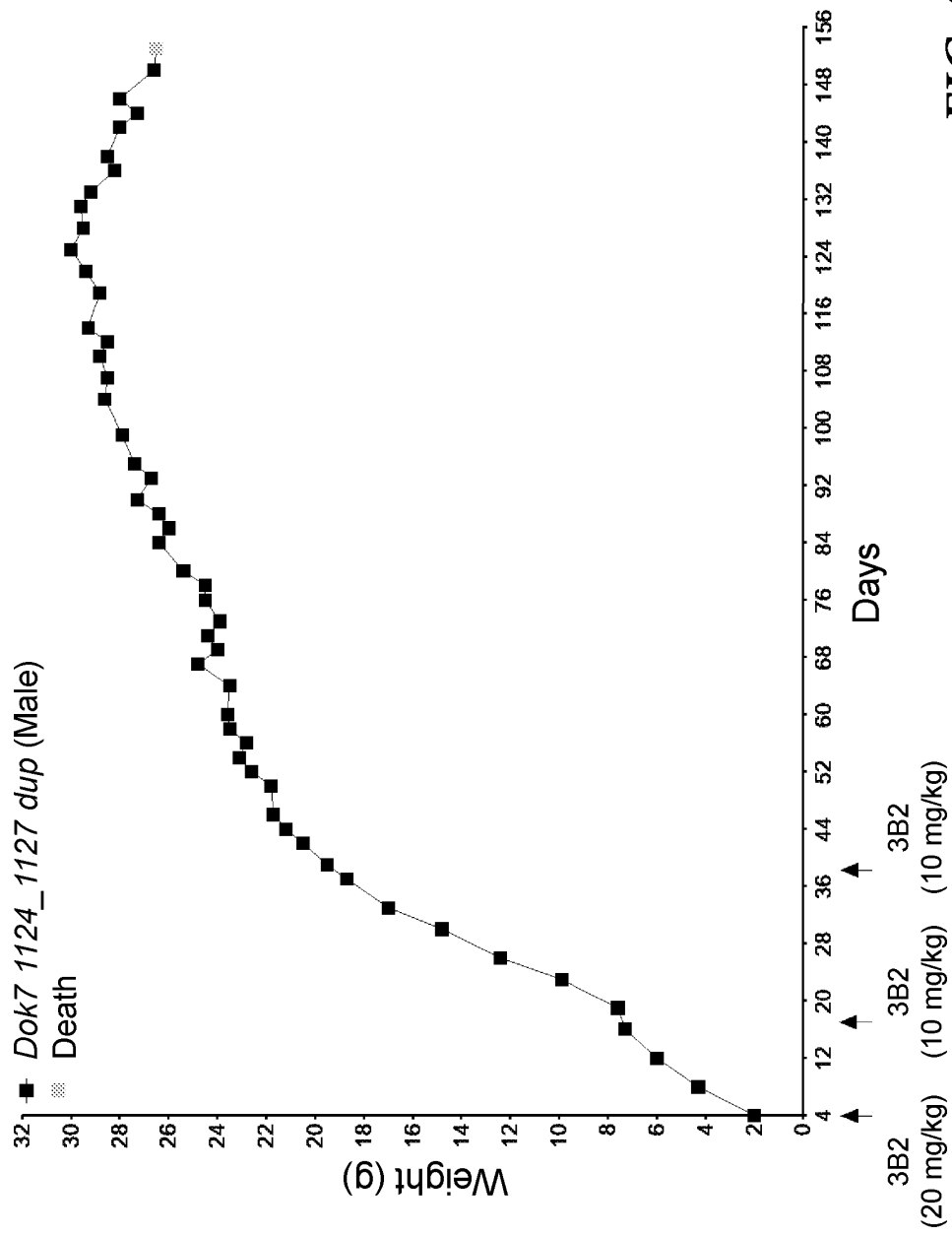
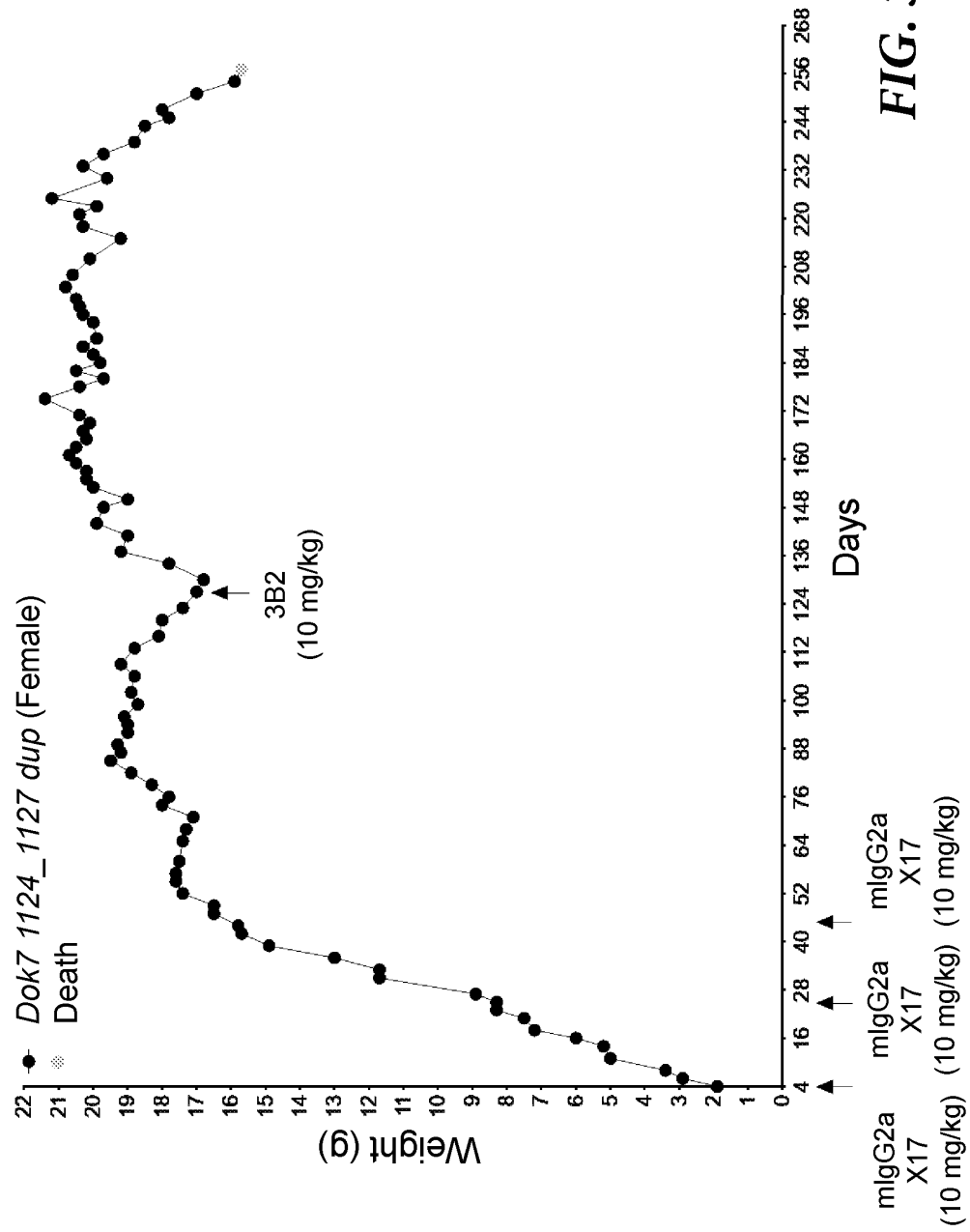


FIG. 36



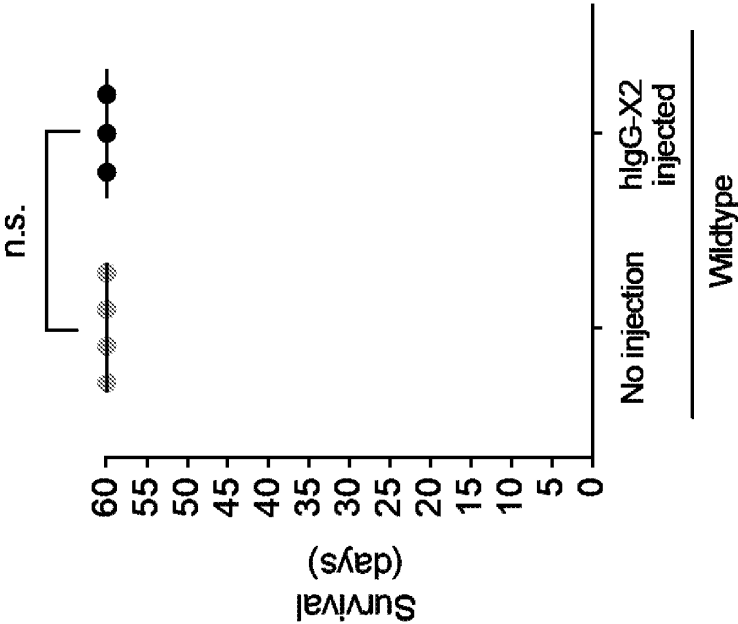


FIG. 38A

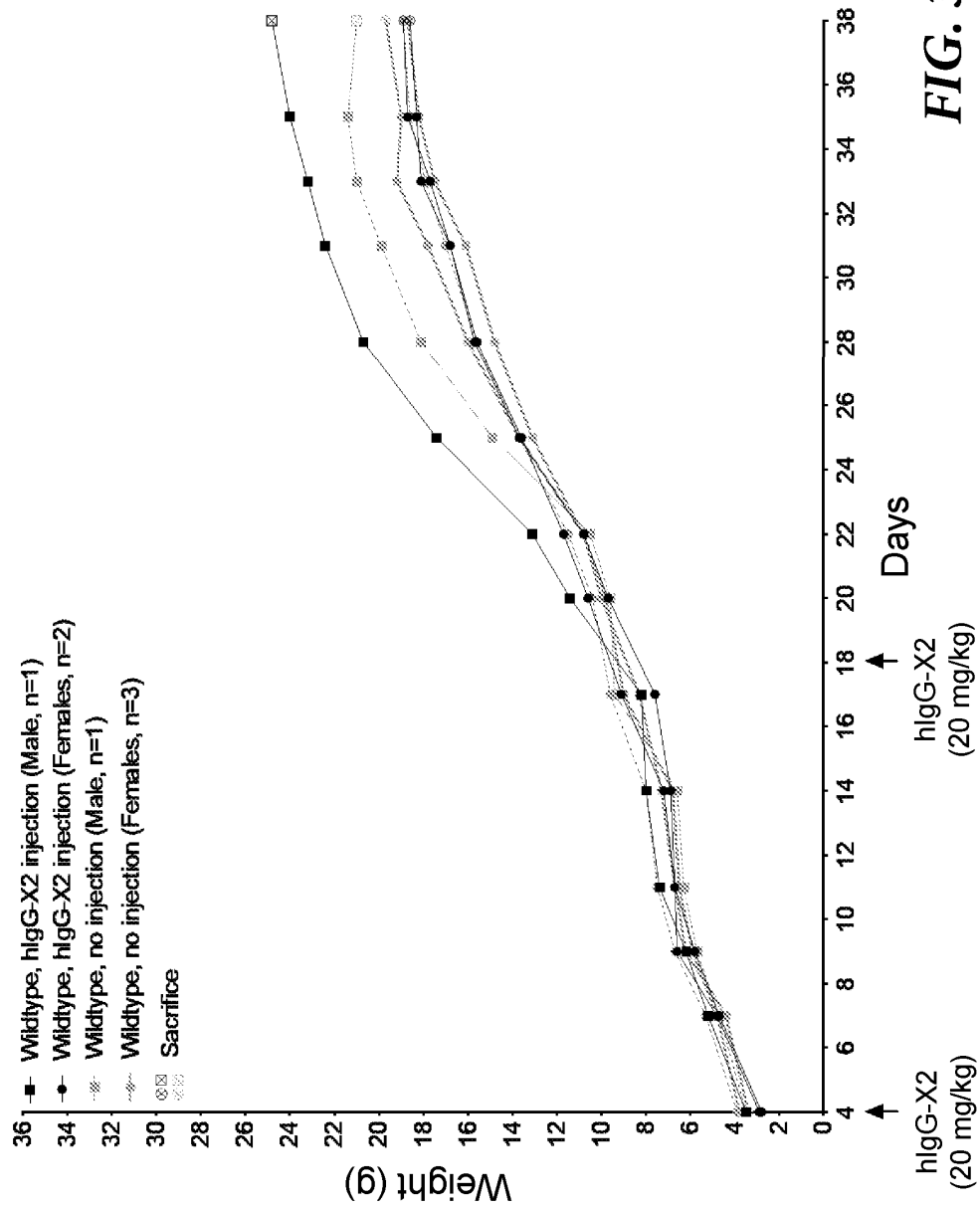


FIG. 38B

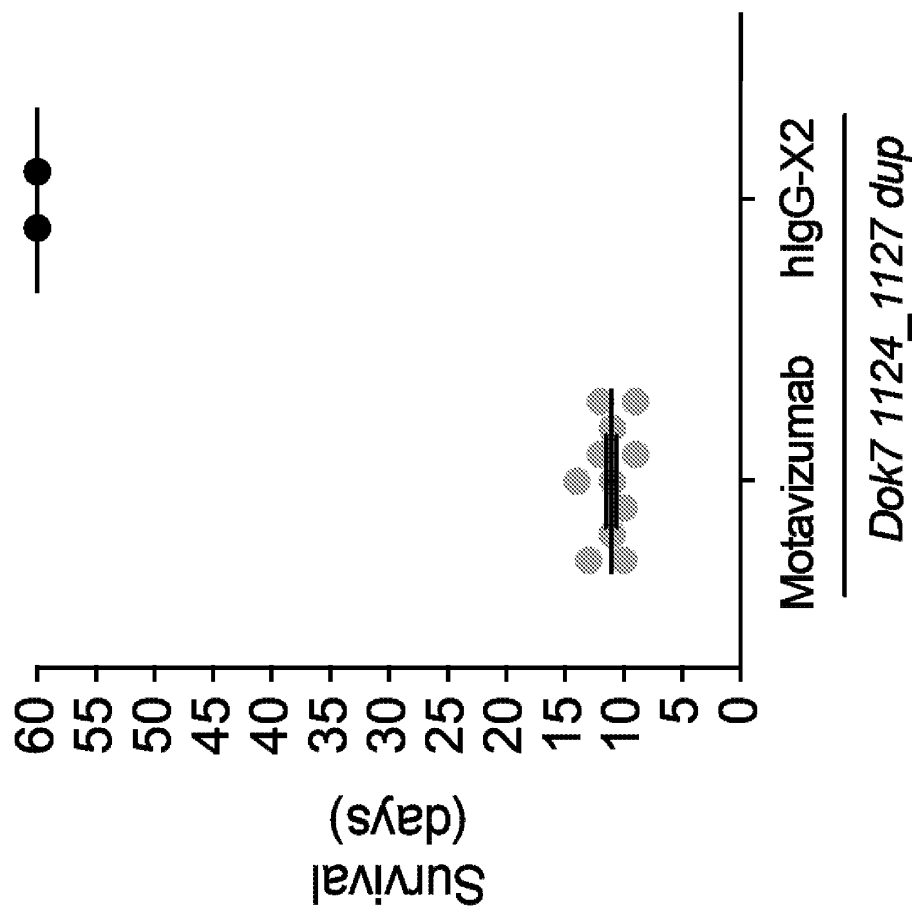


FIG. 39A

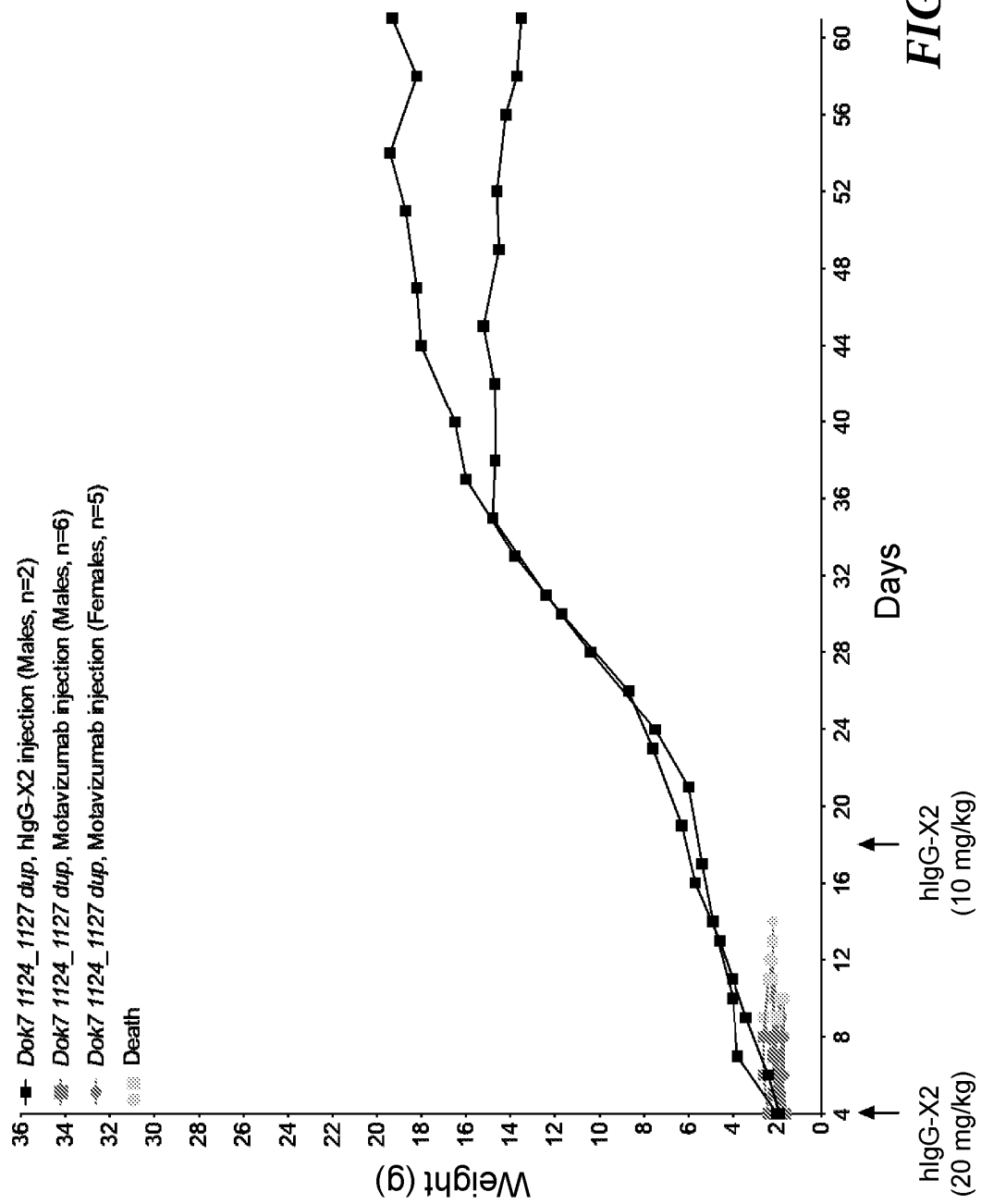
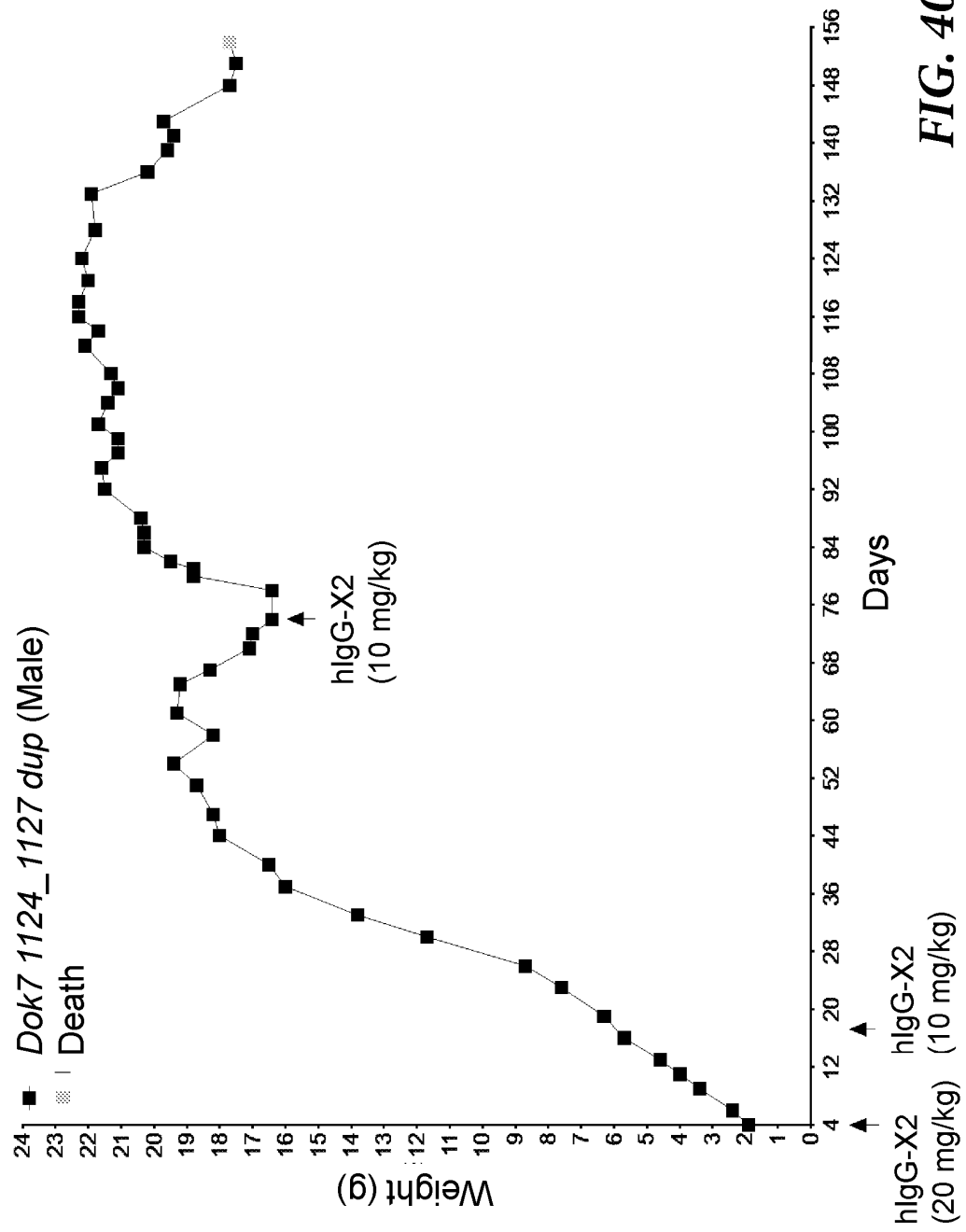
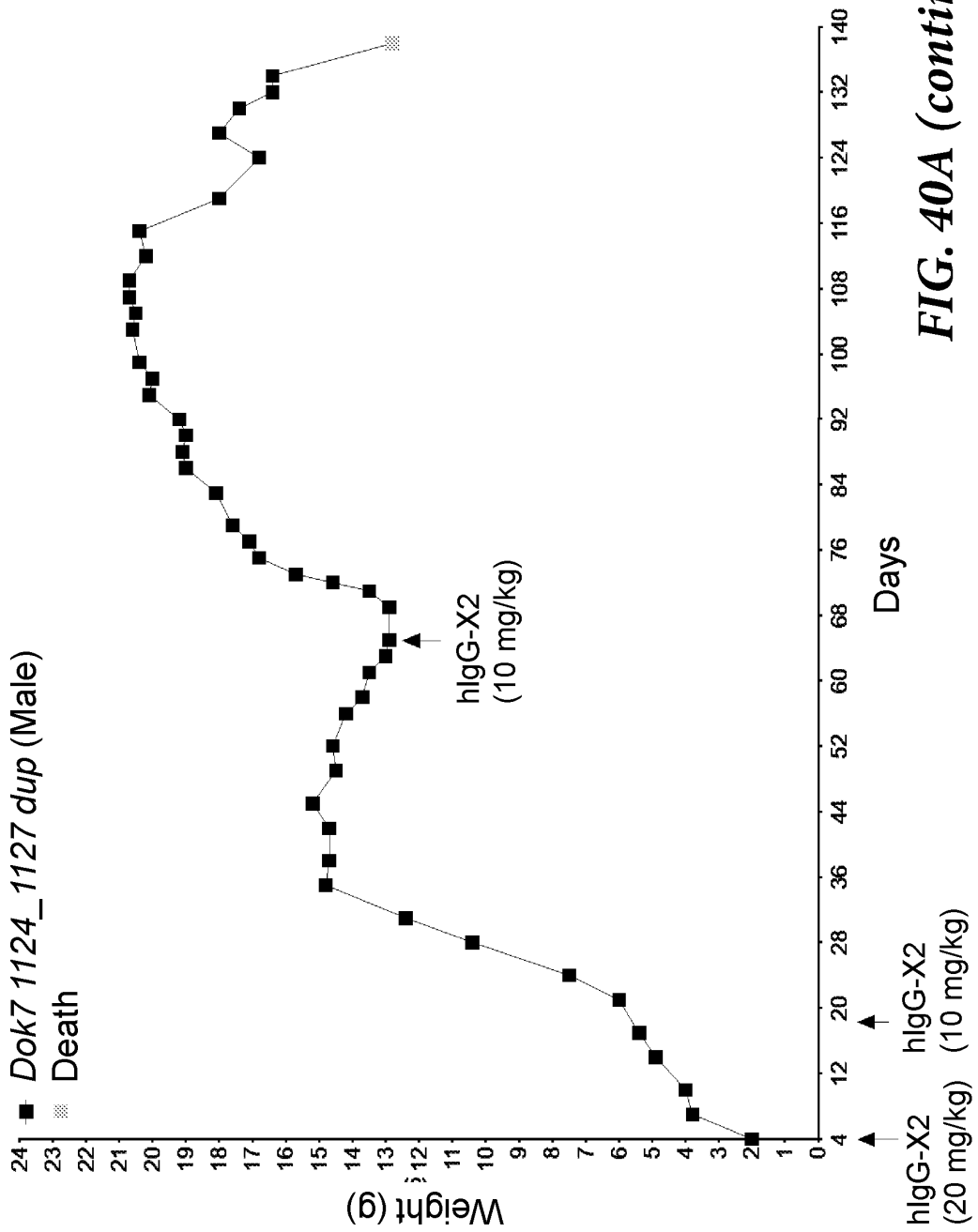


FIG. 39B

**FIG. 40A**

**FIG. 40A (continued)**

(b)

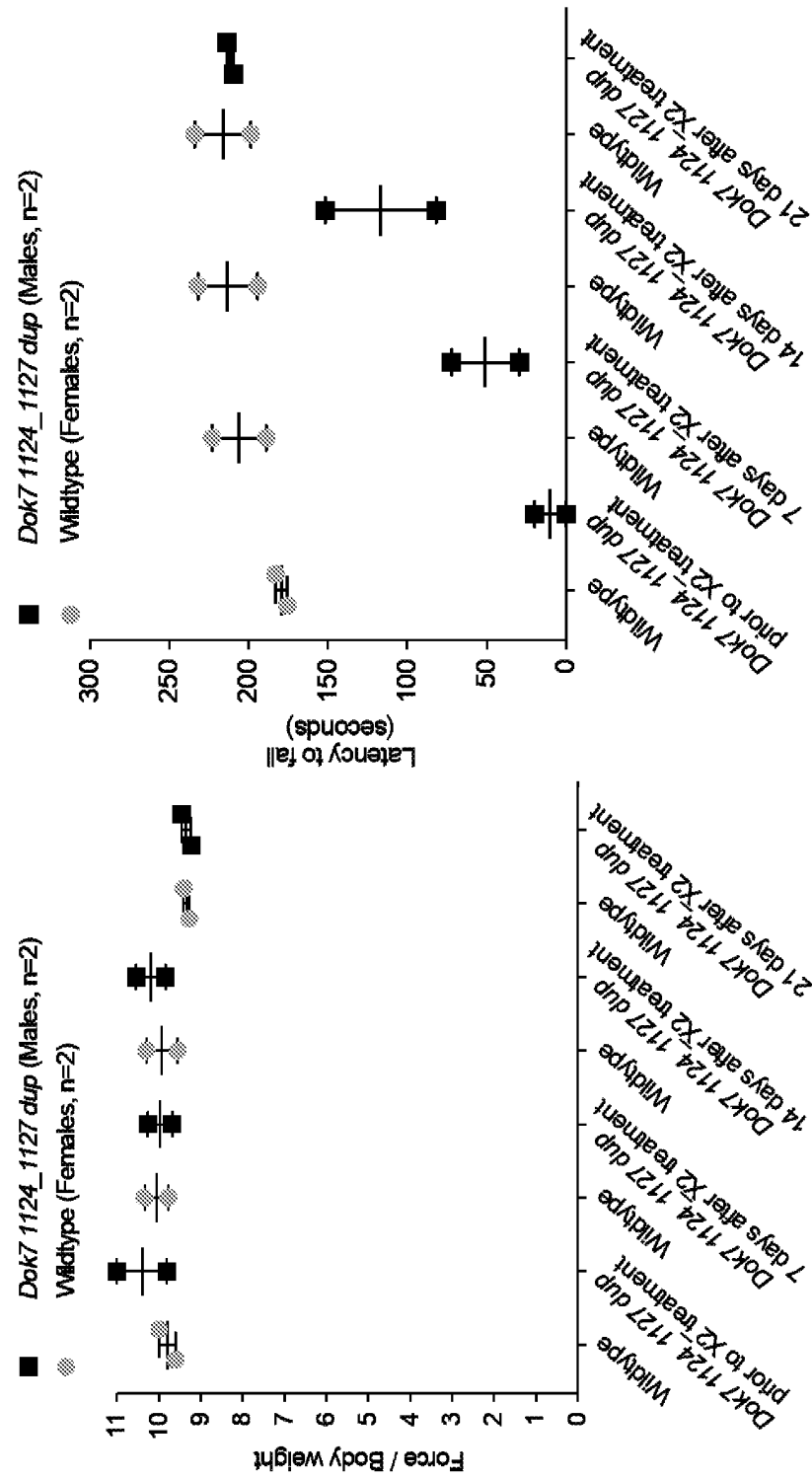


FIG. 40B

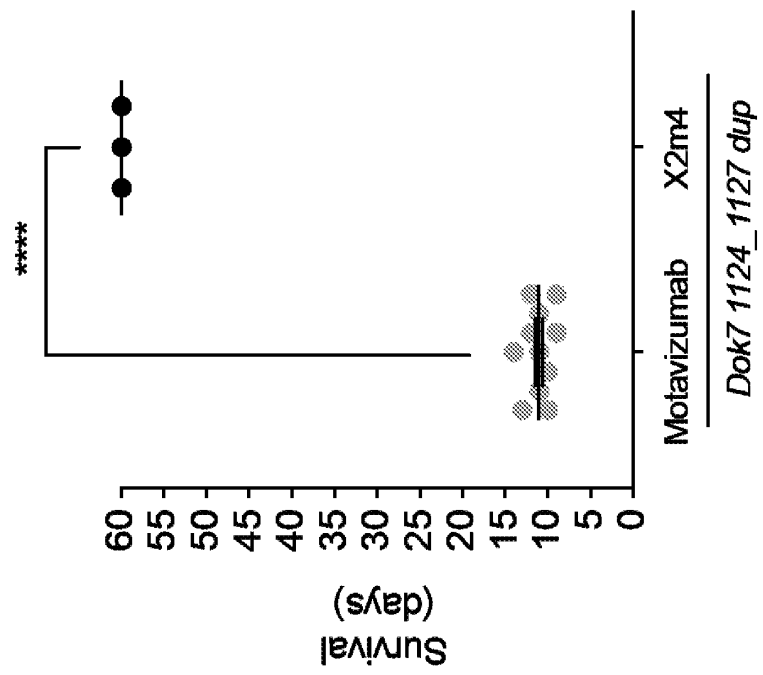
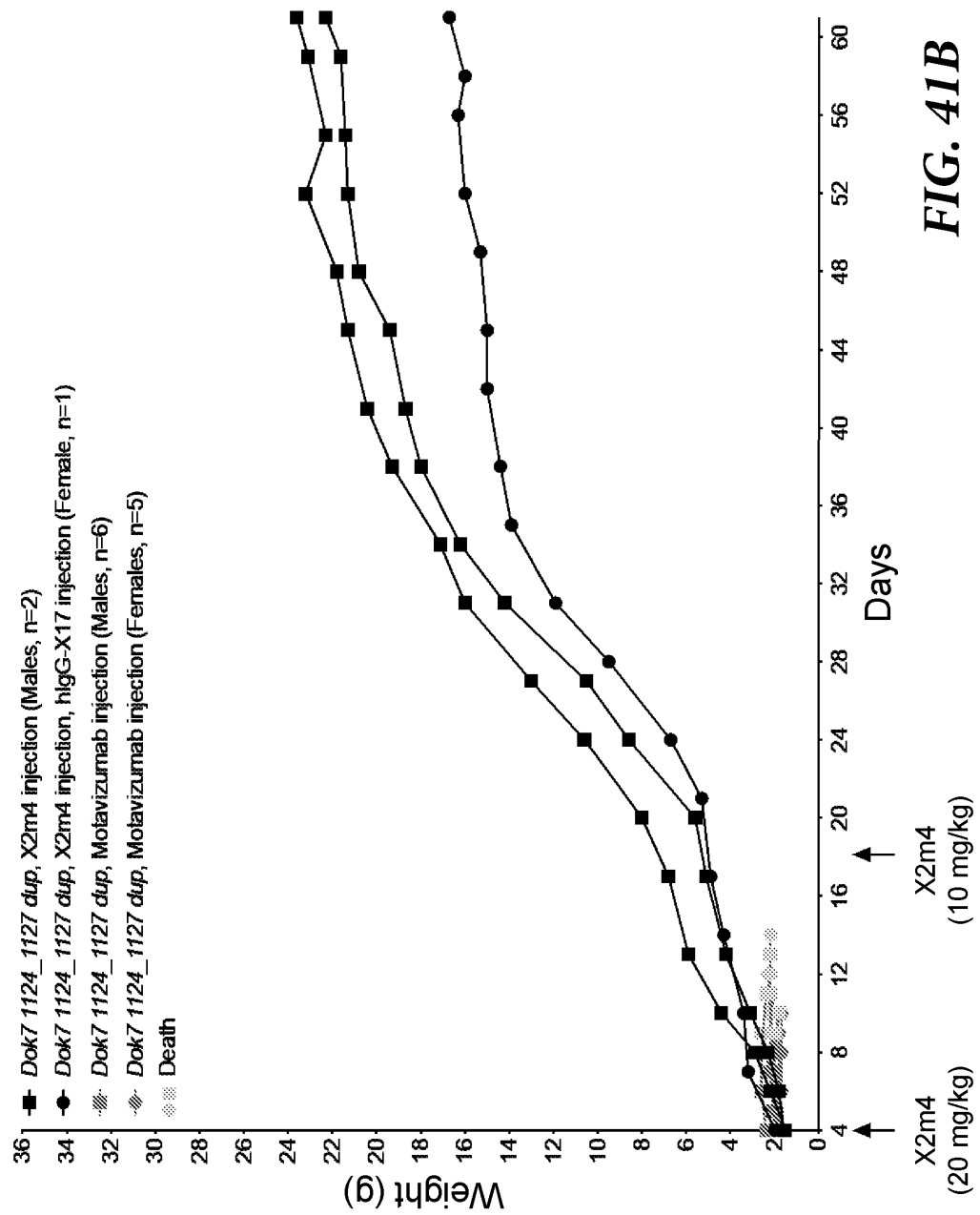
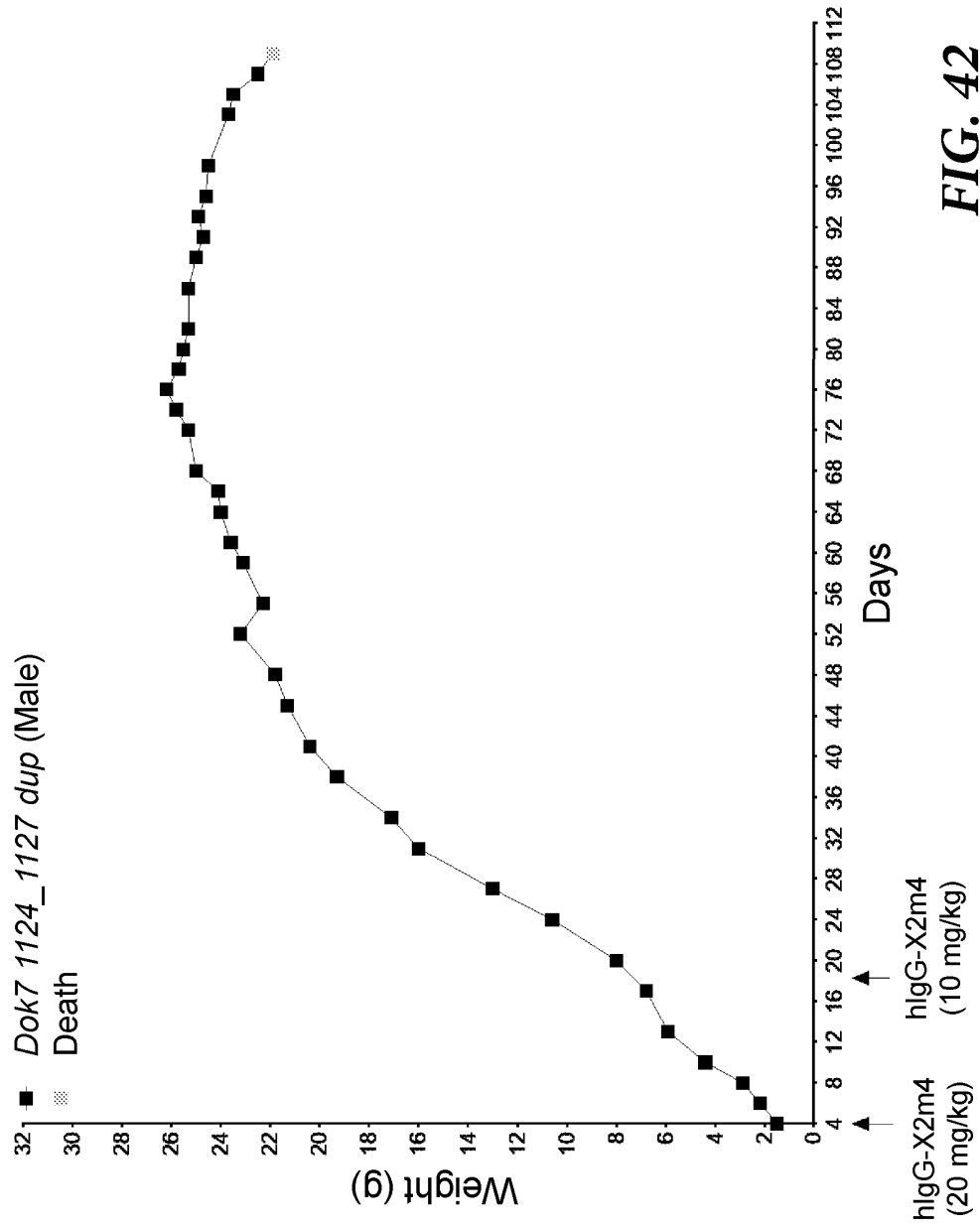
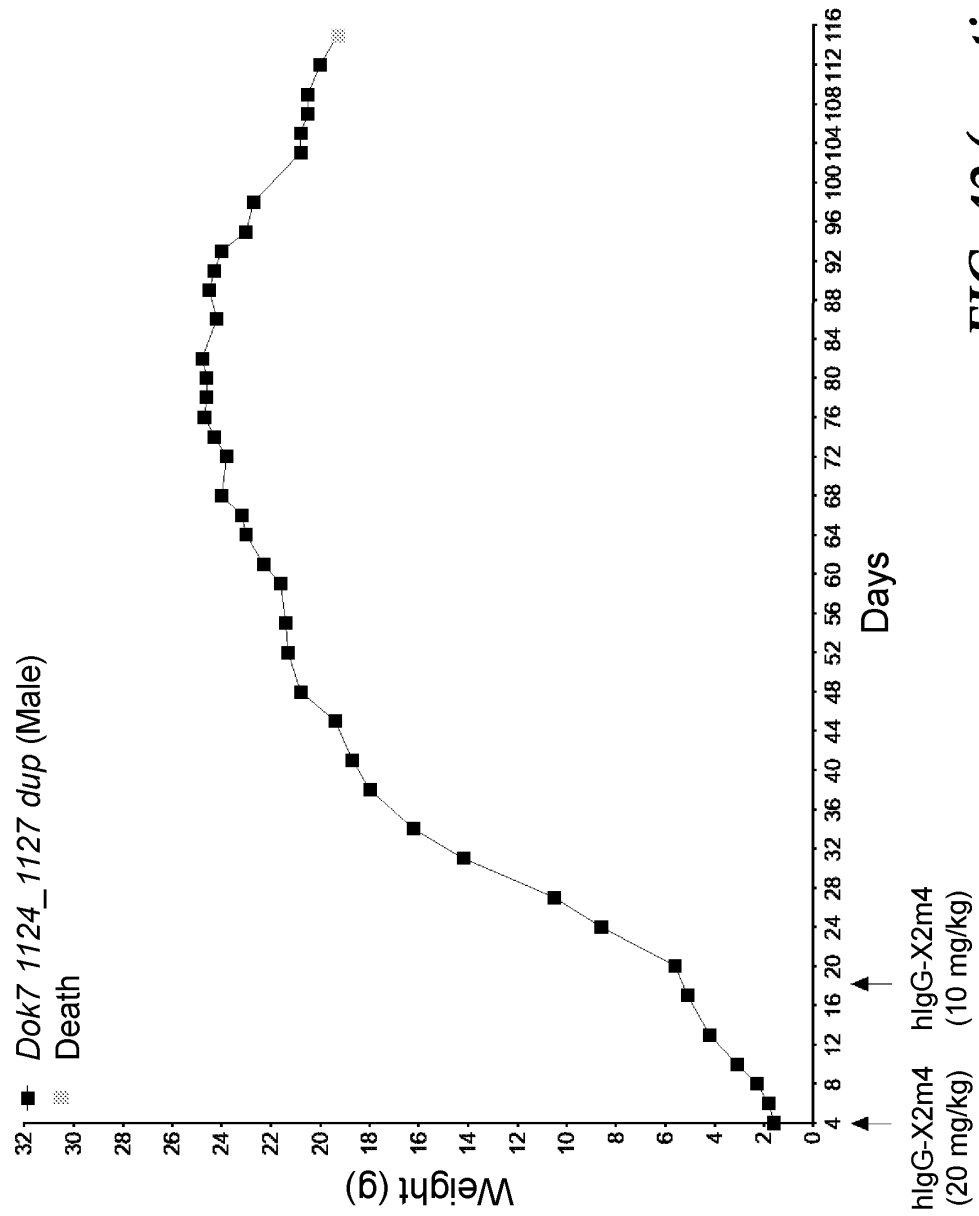
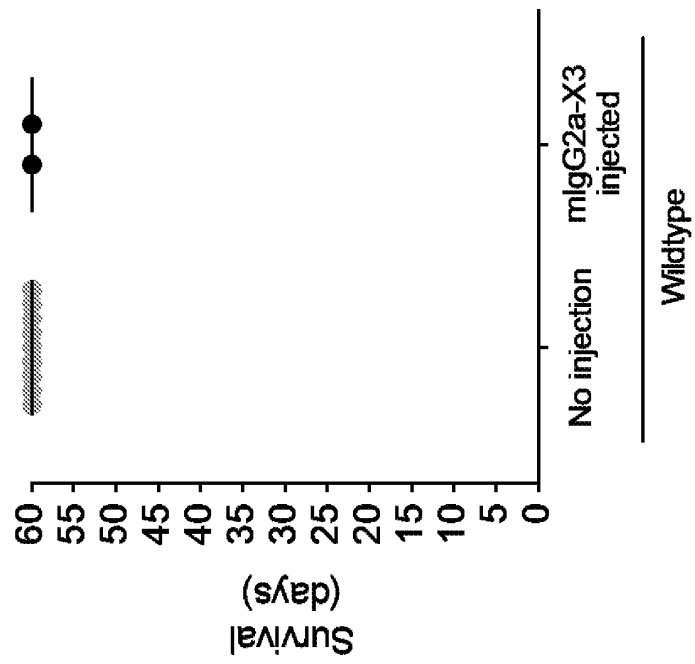


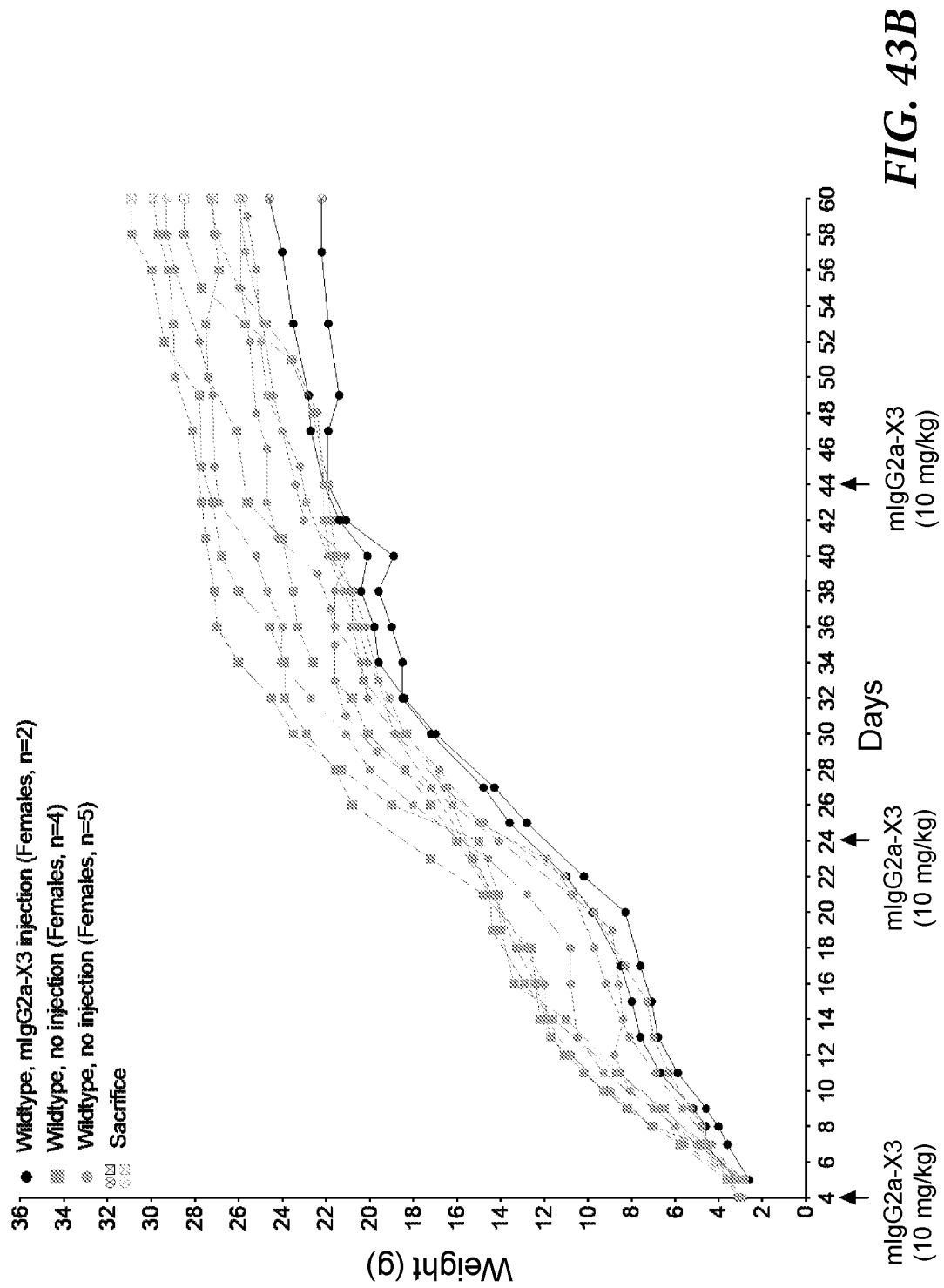
FIG. 41A





**FIG. 42 (continued)**

**FIG. 43A**



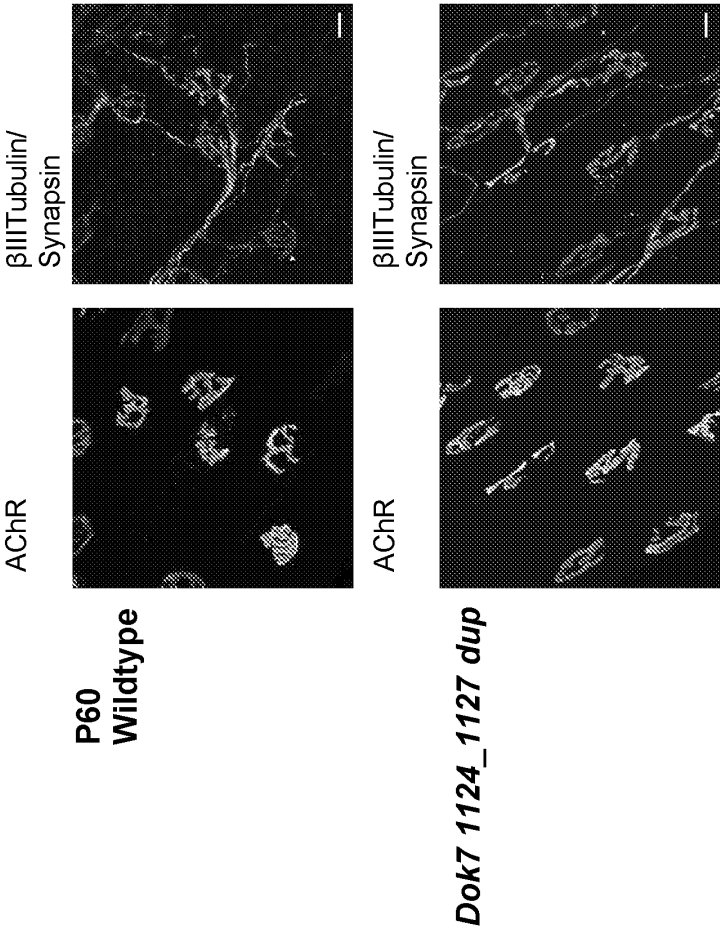


FIG. 44

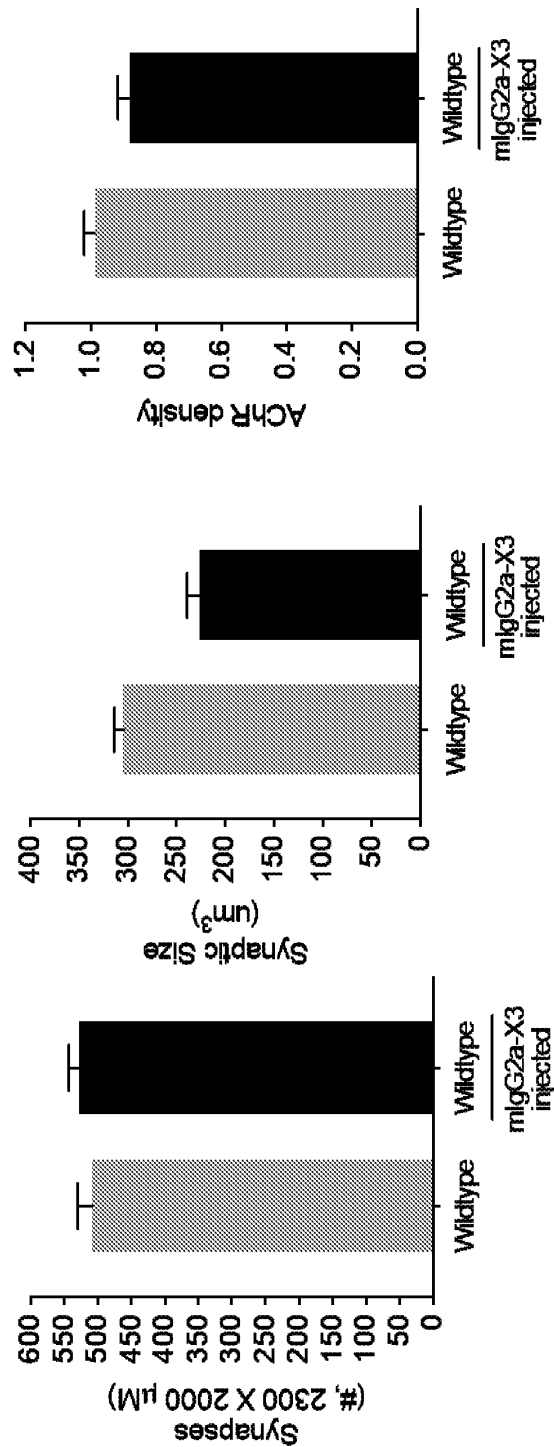


FIG. 44 (continued)

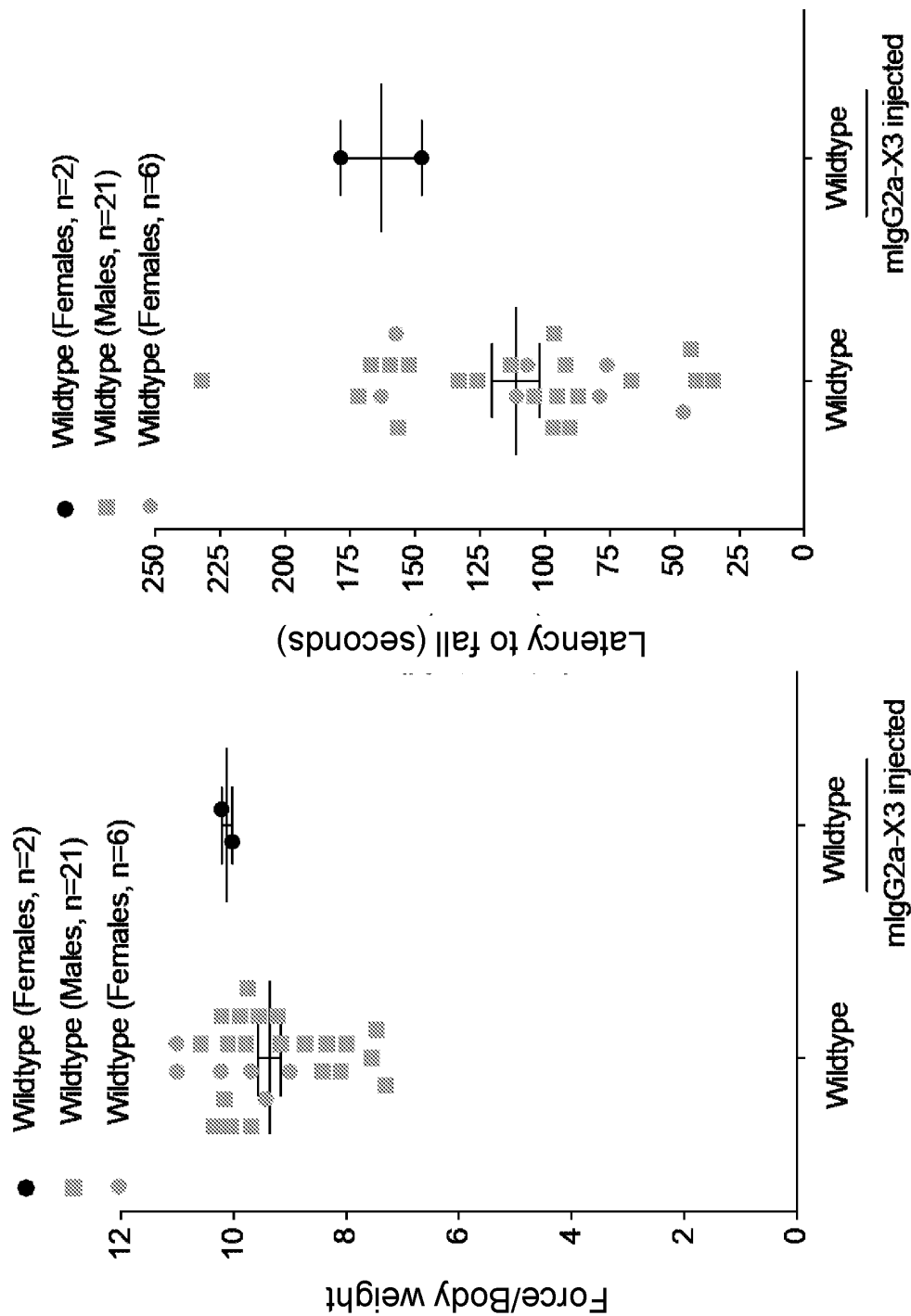


FIG. 45

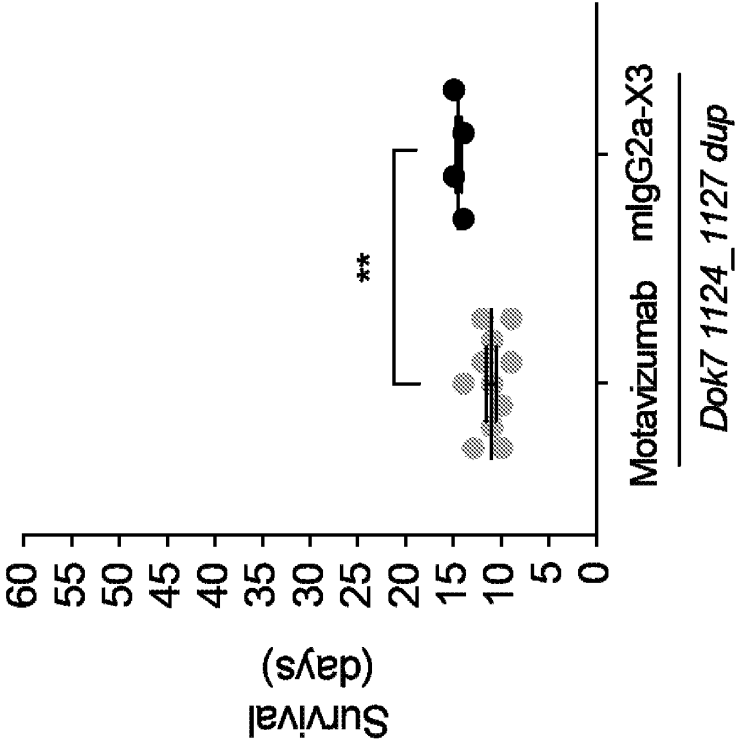


FIG. 46A

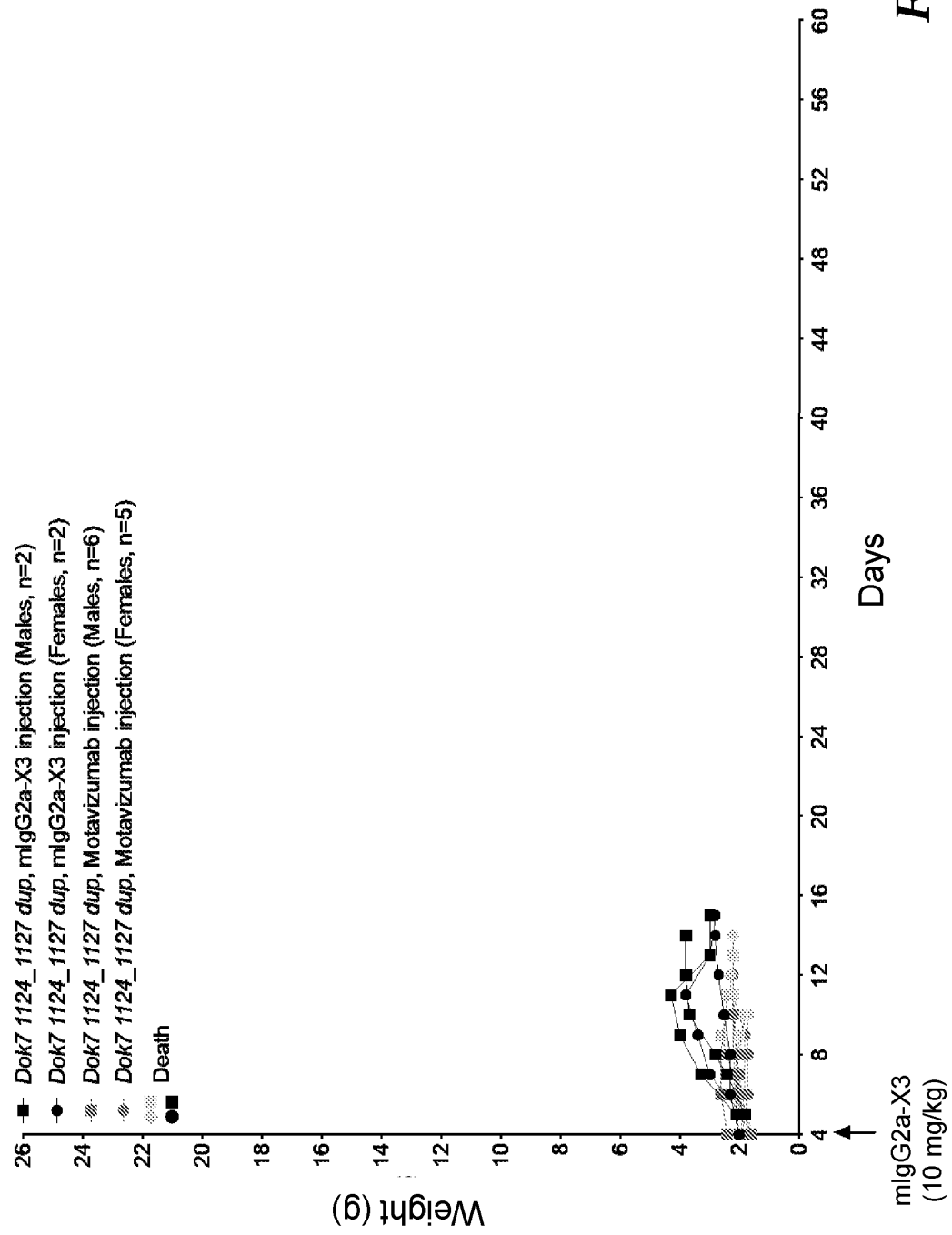
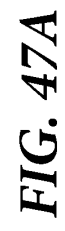


FIG. 46B



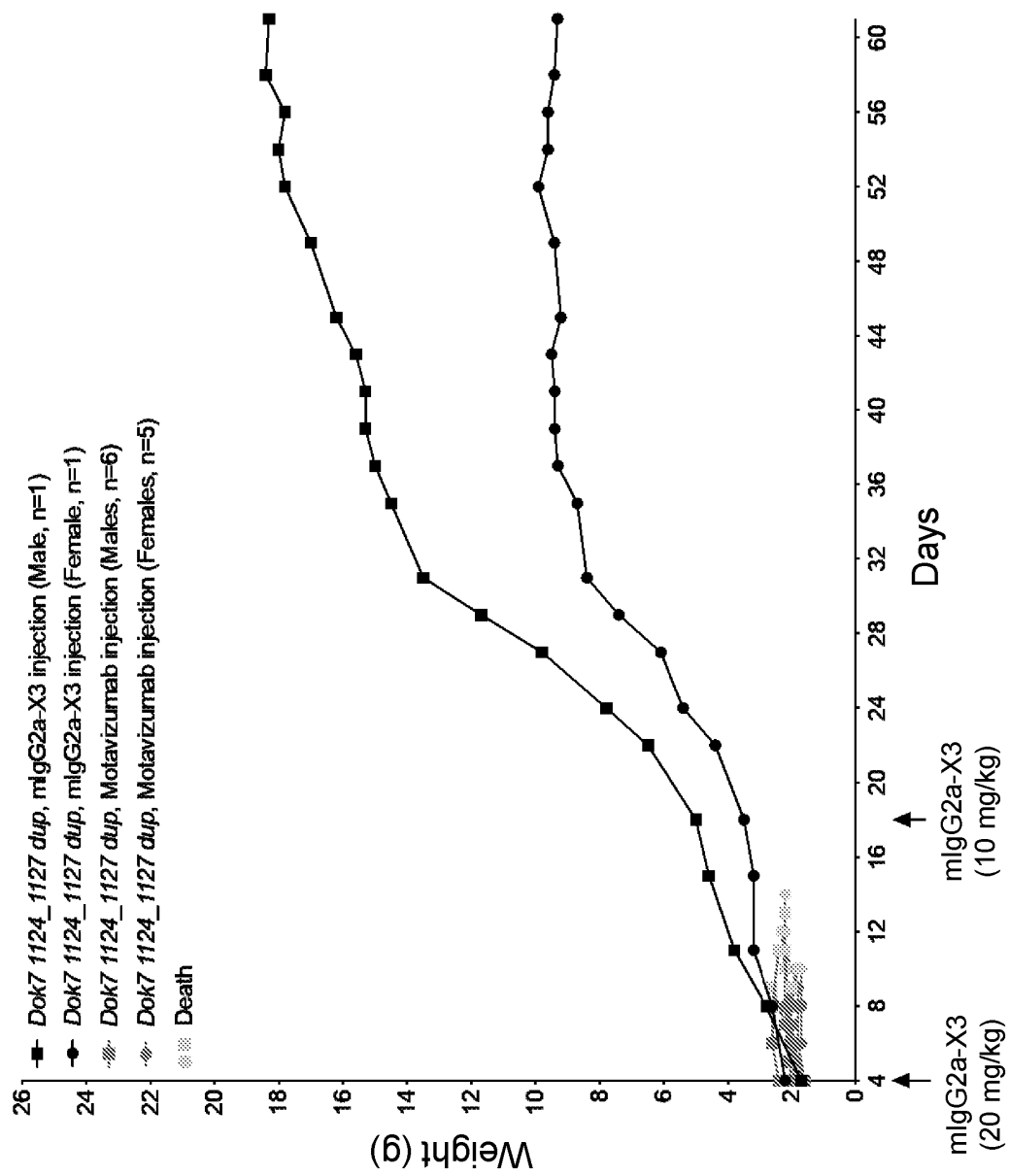
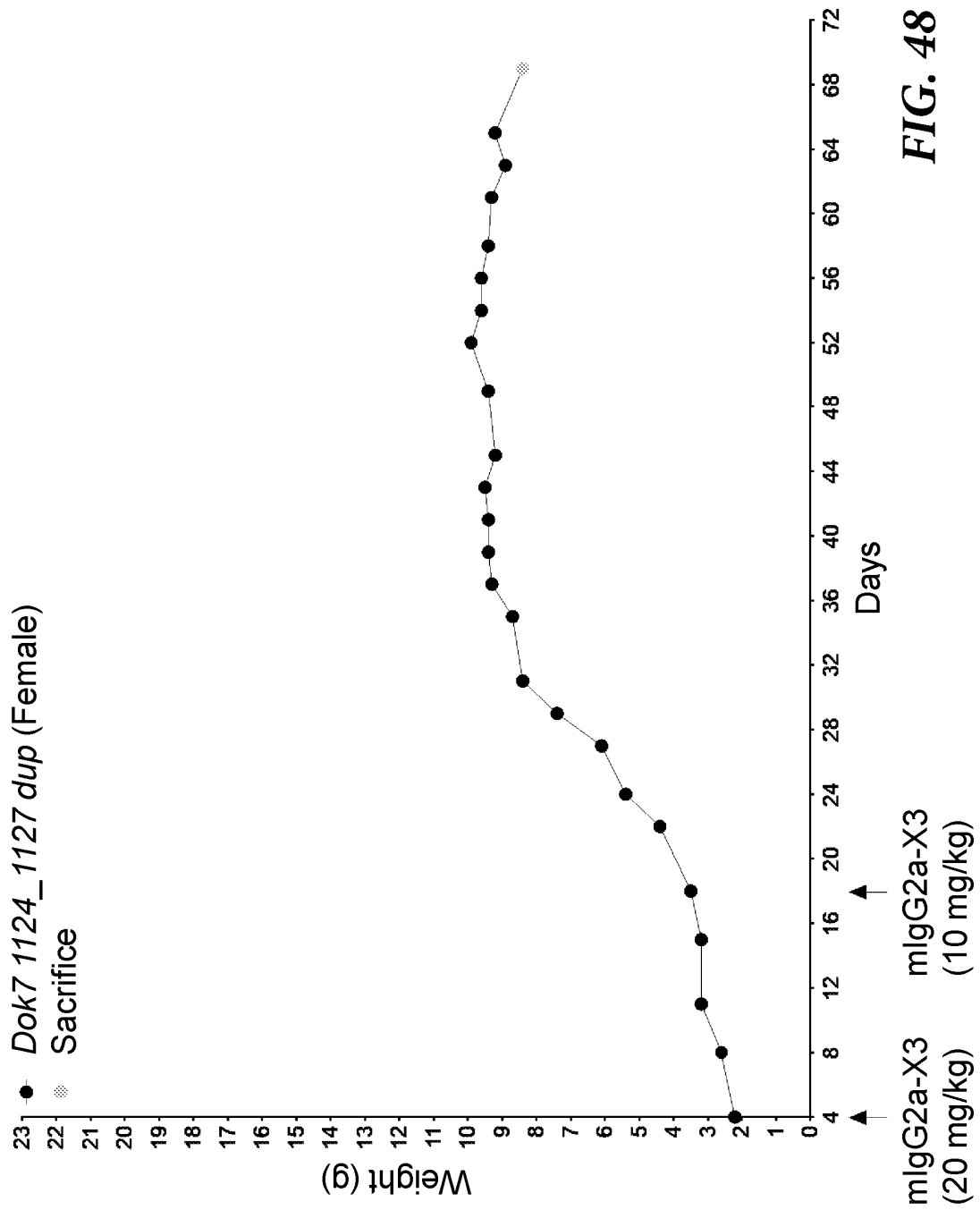


FIG. 47B



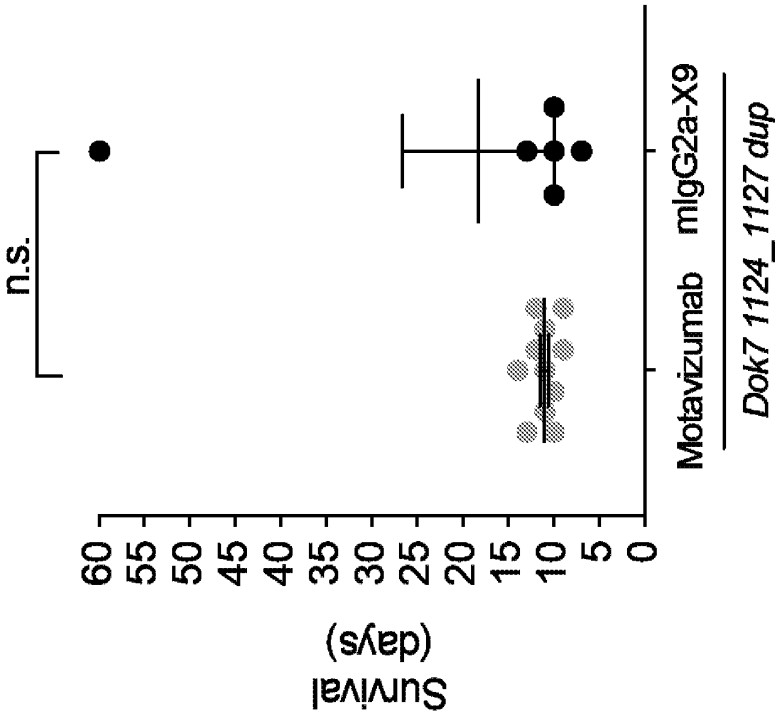
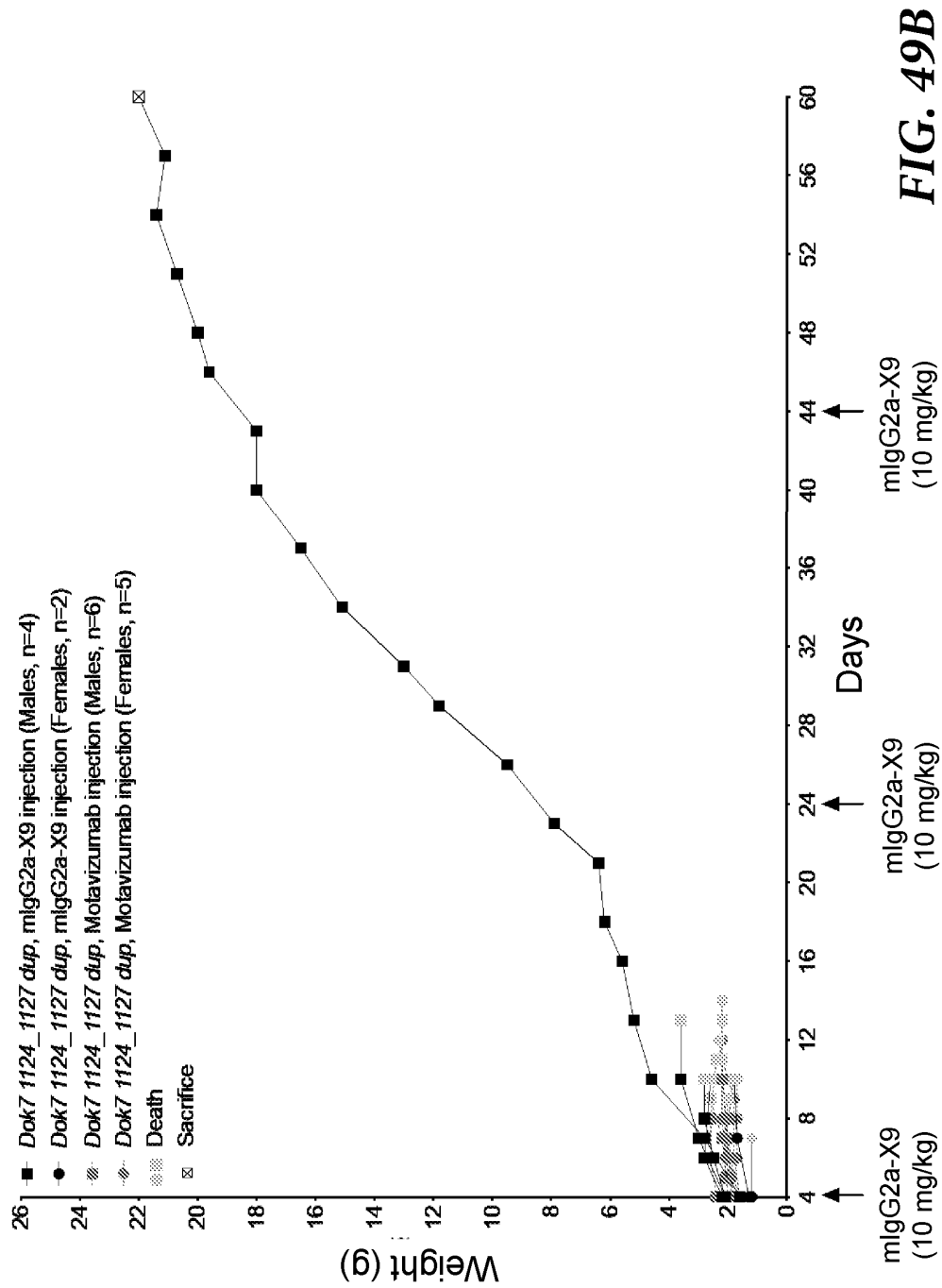


FIG. 49A



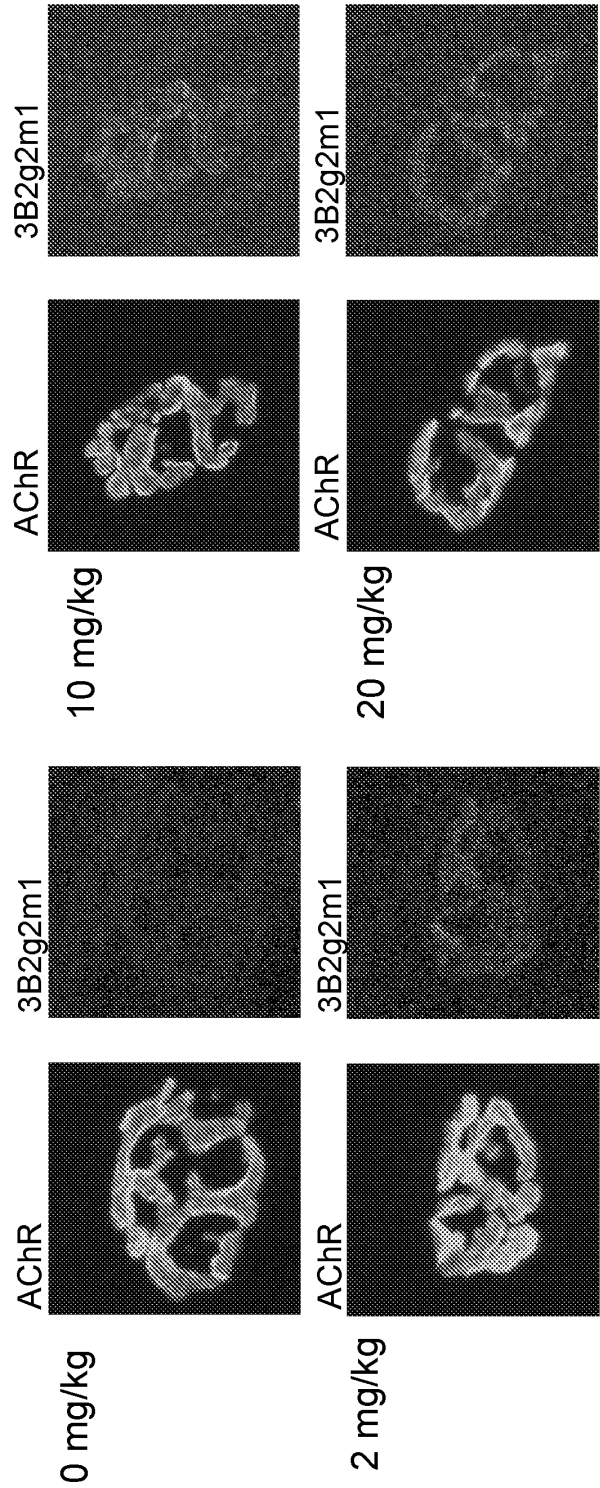


FIG. 50

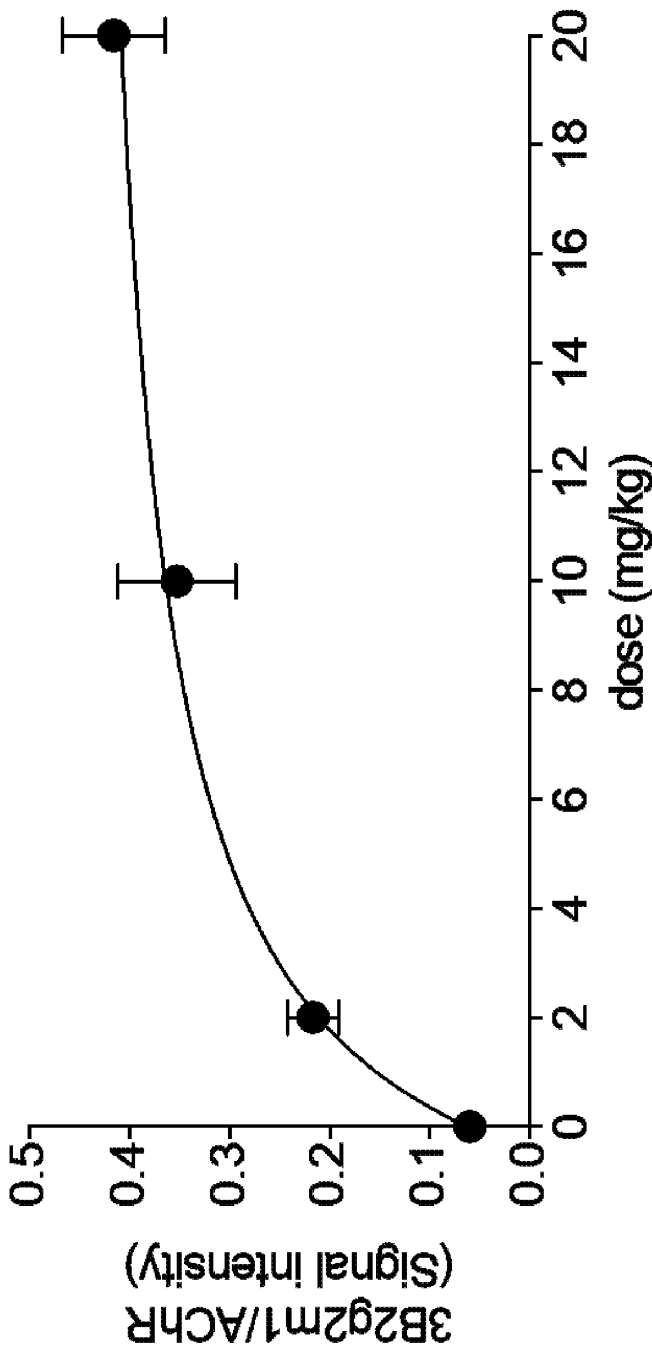
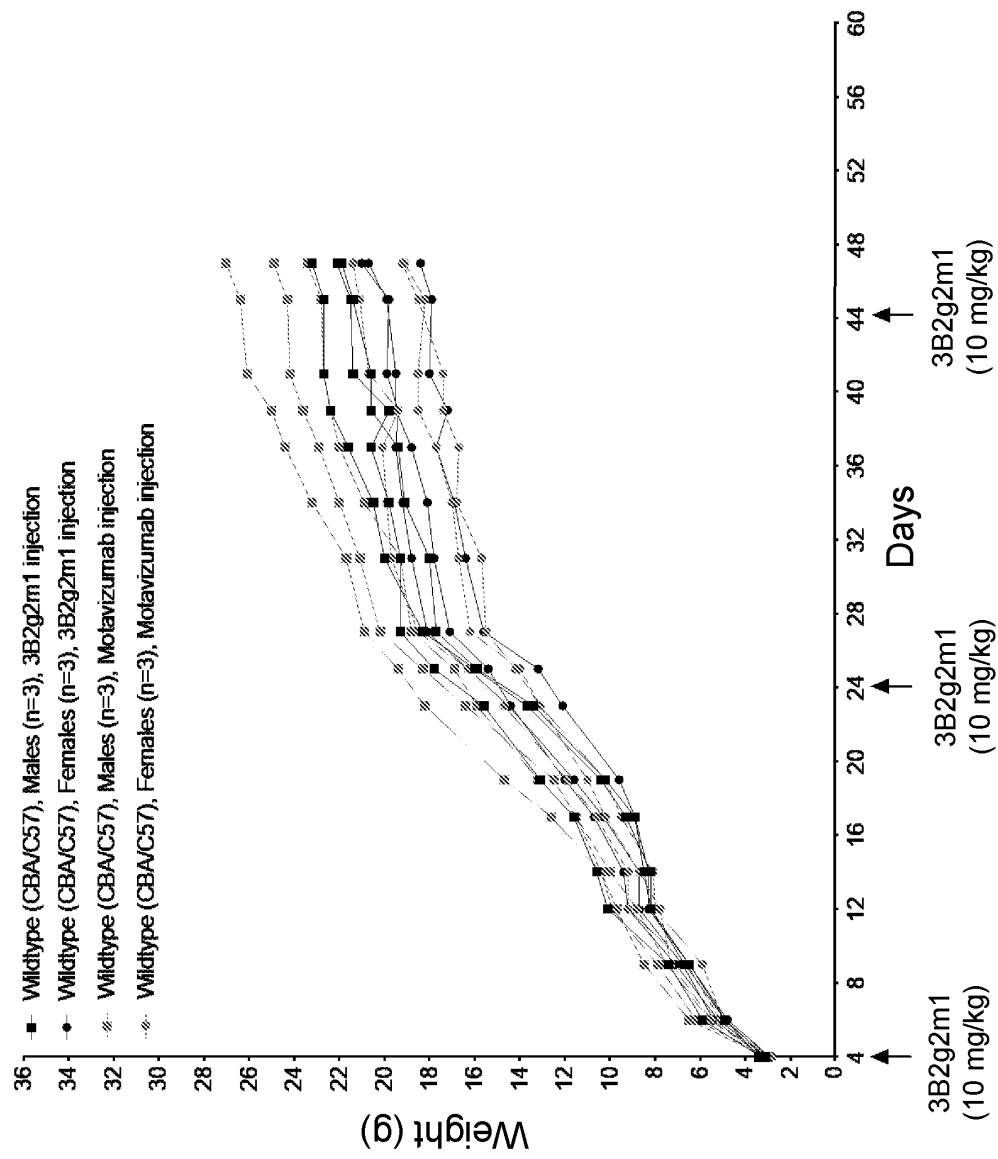
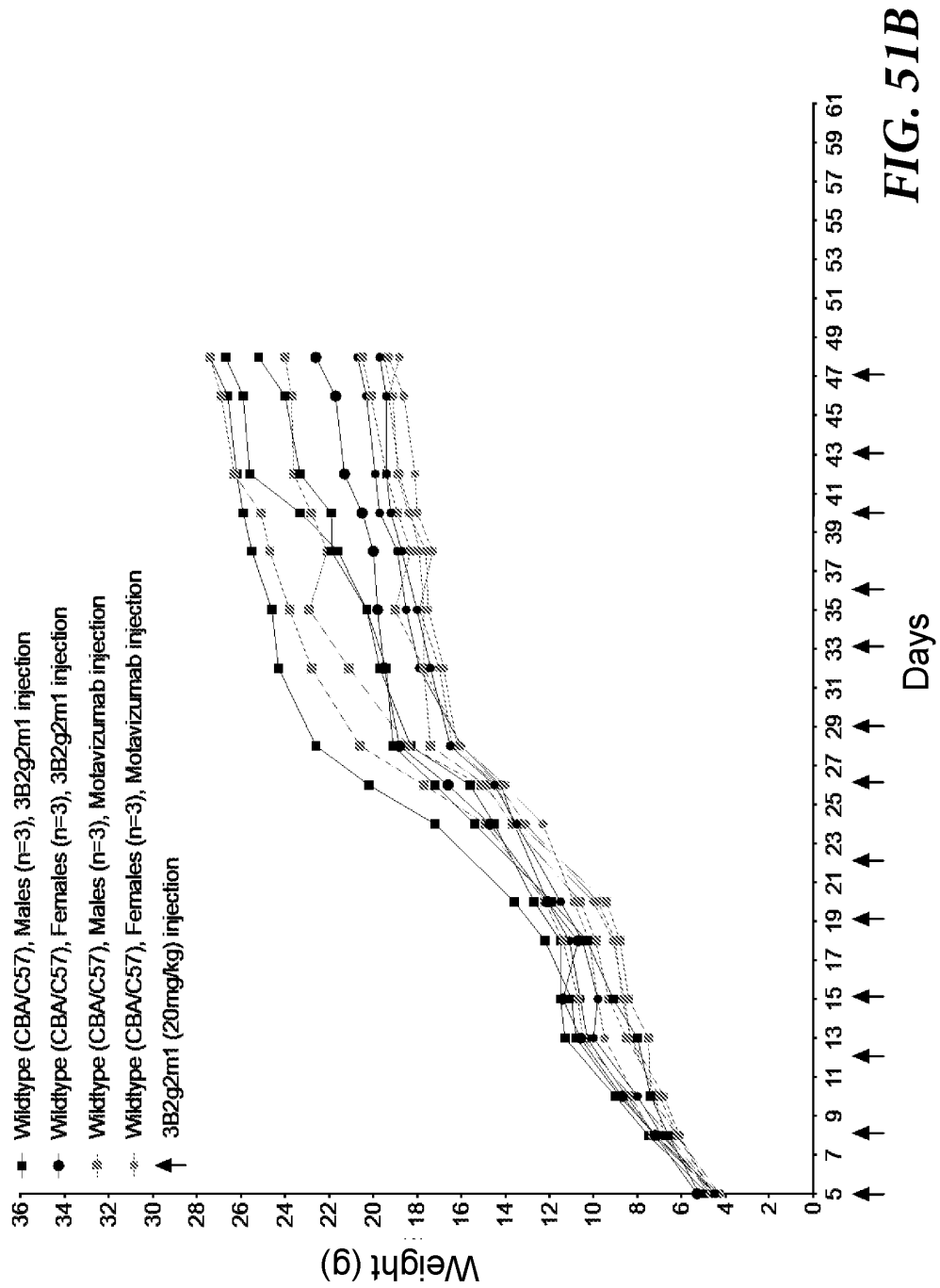
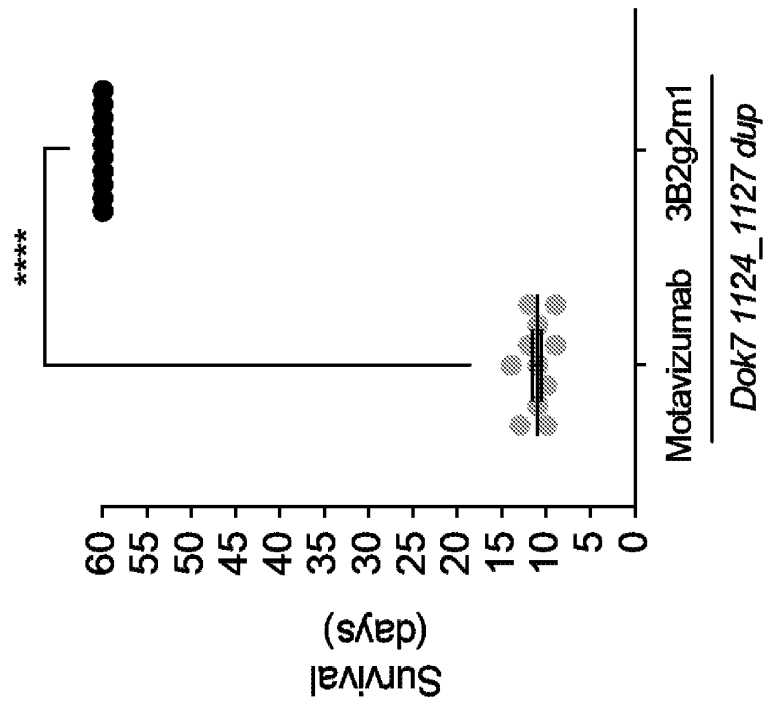
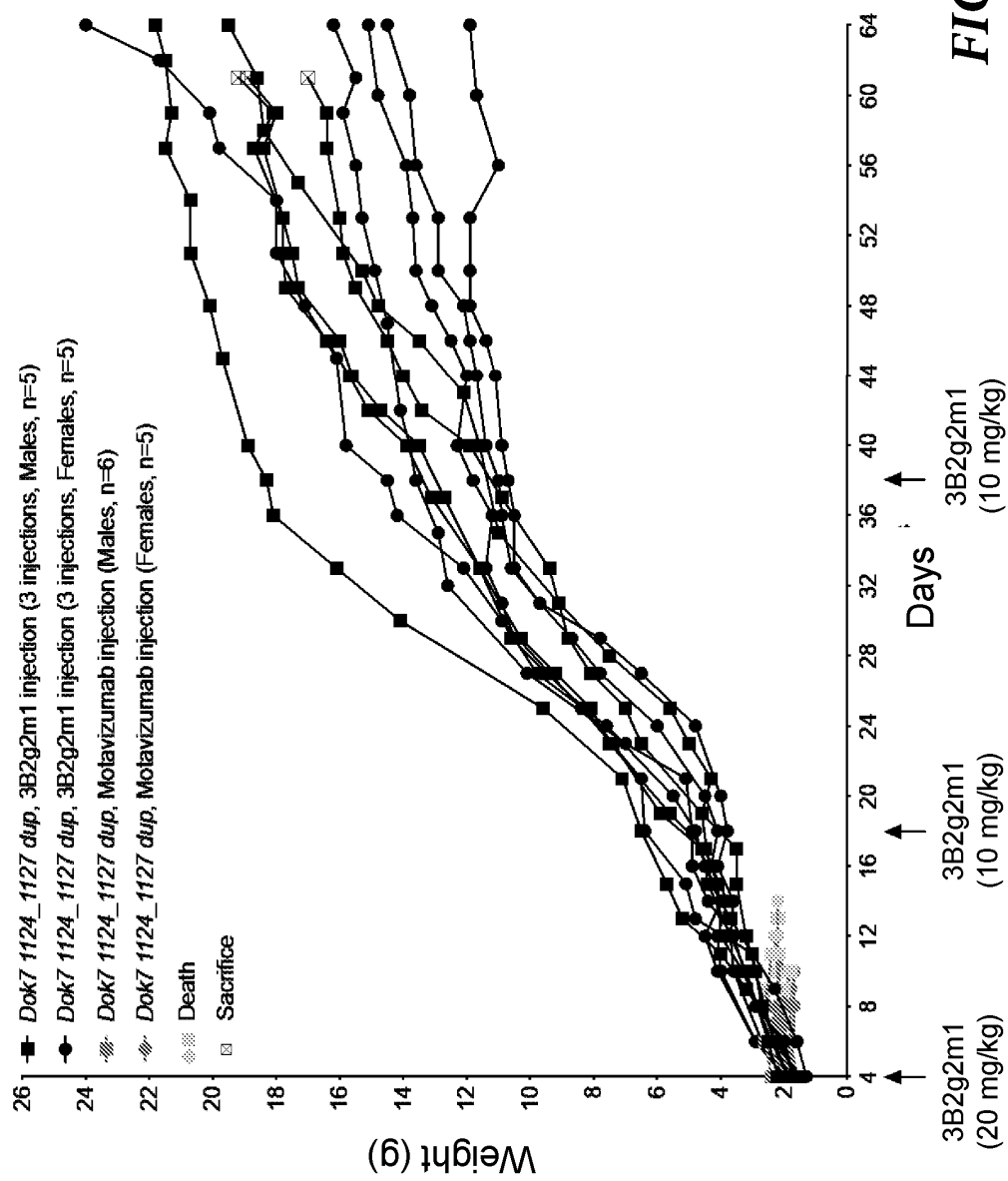


FIG. 50 (continued)

**FIG. 51A**







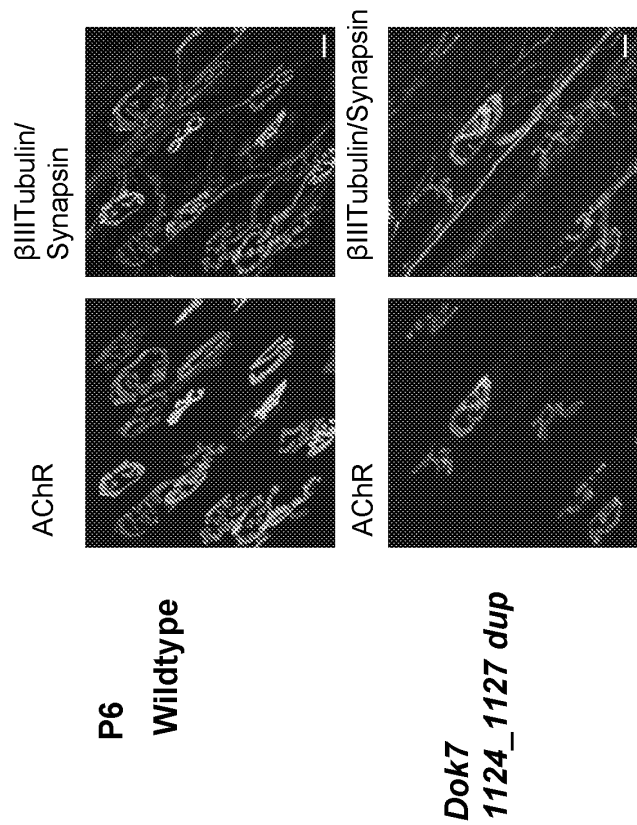


FIG. 53

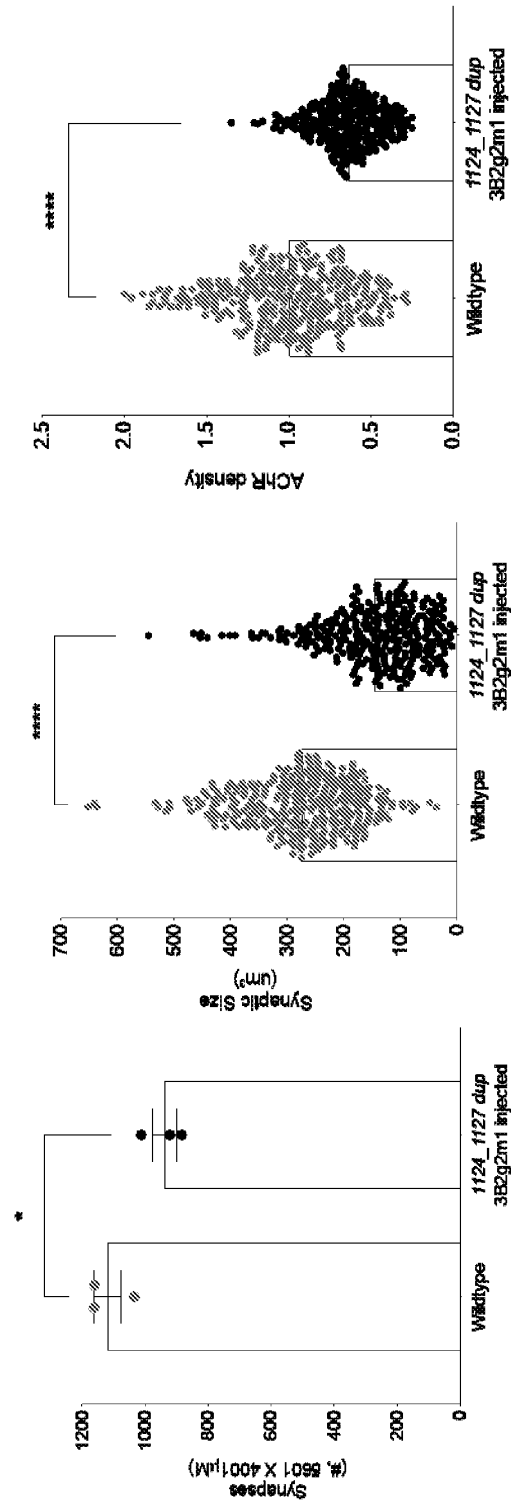


FIG. 53 (continued)

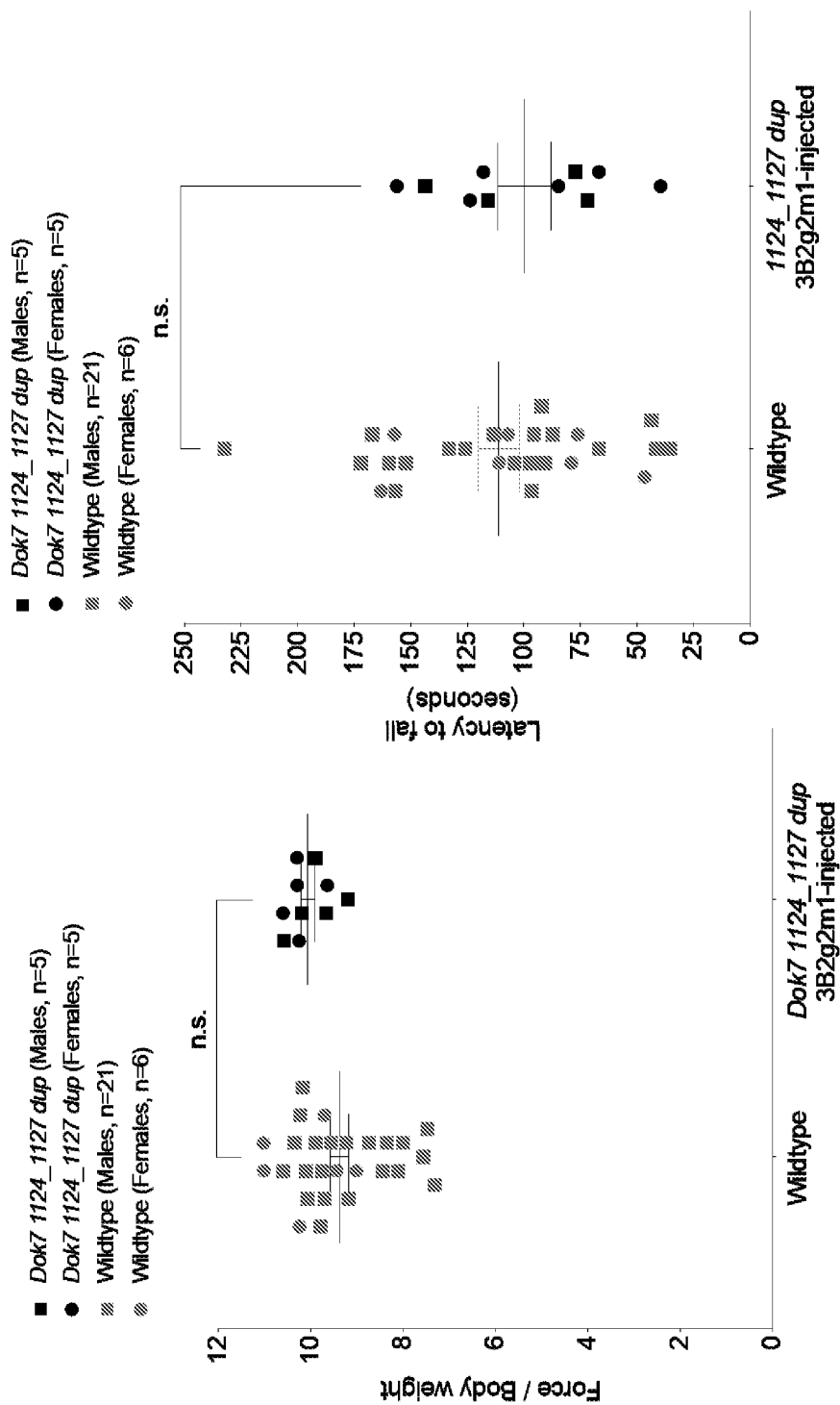
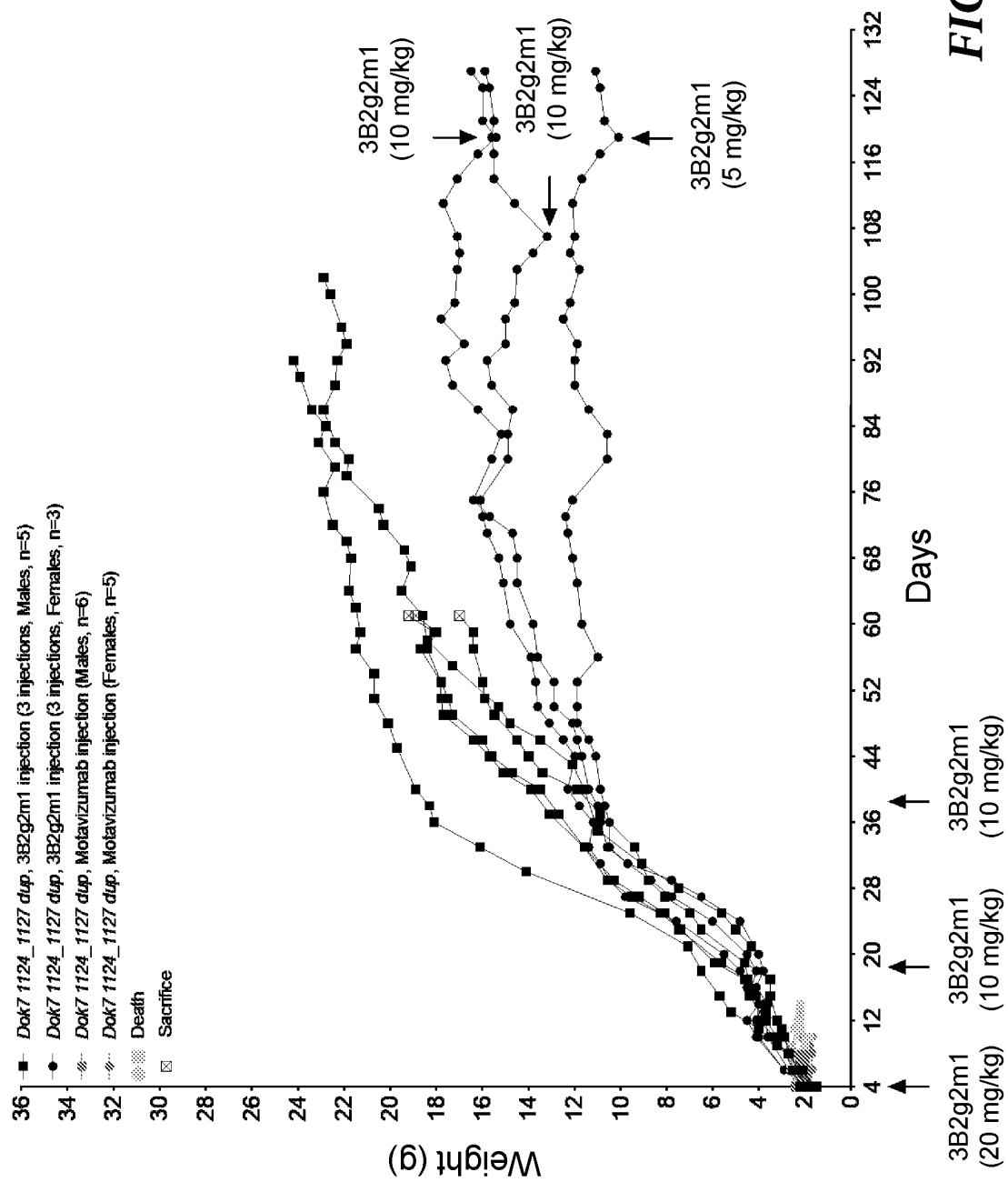


FIG. 54

**FIG. 55**

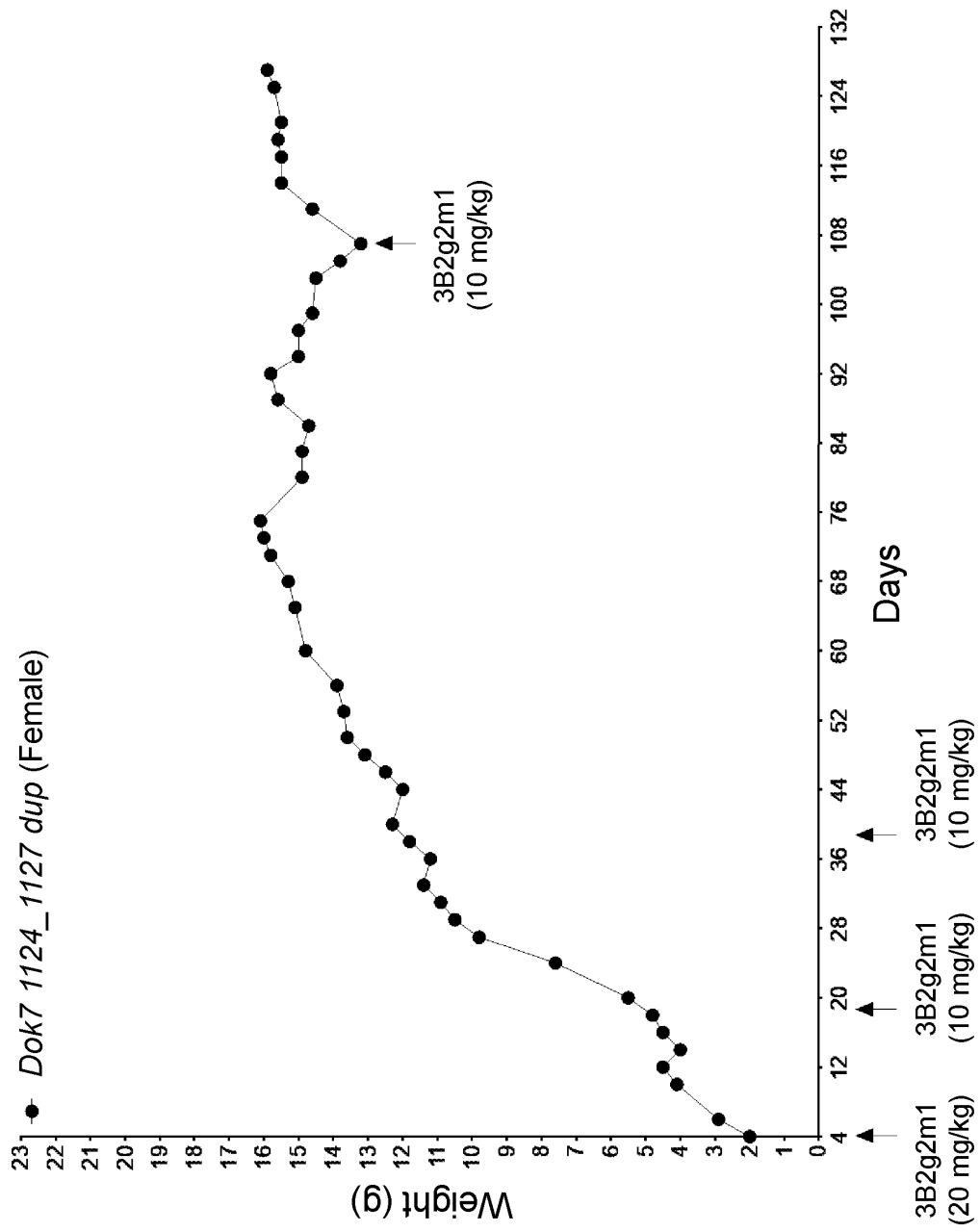


FIG. 56A

Top Plot: Rotarod performance improvement (Fold difference)

Y-axis: Rotarod performance improvement (Fold difference) (0 to 6)

X-axis: Wildtype, Dok7 1124_1127 dup, 3B2g2m1-injected

Legend: Wildtype (hatched circle), Dok7 1124_1127 dup (black circle)

Group	Rotarod performance improvement (Fold difference)
Wildtype	~1.2
Dok7 1124_1127 dup	~5.5
3B2g2m1-injected	~1.2

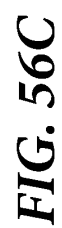
Bottom Plot: Latency to fall (seconds)

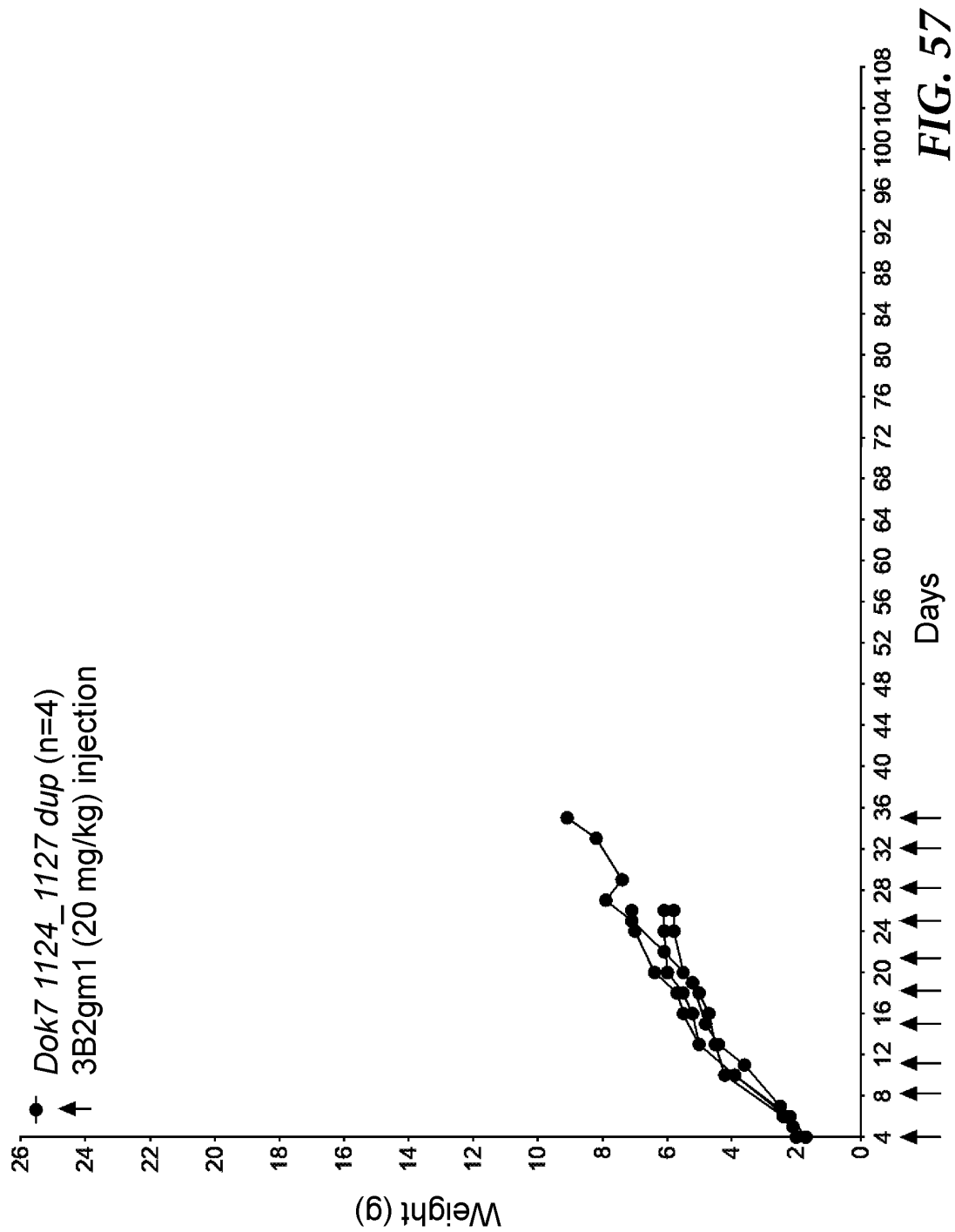
Y-axis: Latency to fall (seconds) (0 to 300)

X-axis: Wildtype, Dok7 1124_1127 dup, 7 days after 3B2g2m1 treatment

Legend: Wildtype (hatched circle), Dok7 1124_1127 dup (black circle)

Group	Latency to fall (seconds)
Wildtype	~130
Dok7 1124_1127 dup	~270
7 days after 3B2g2m1 treatment	~130





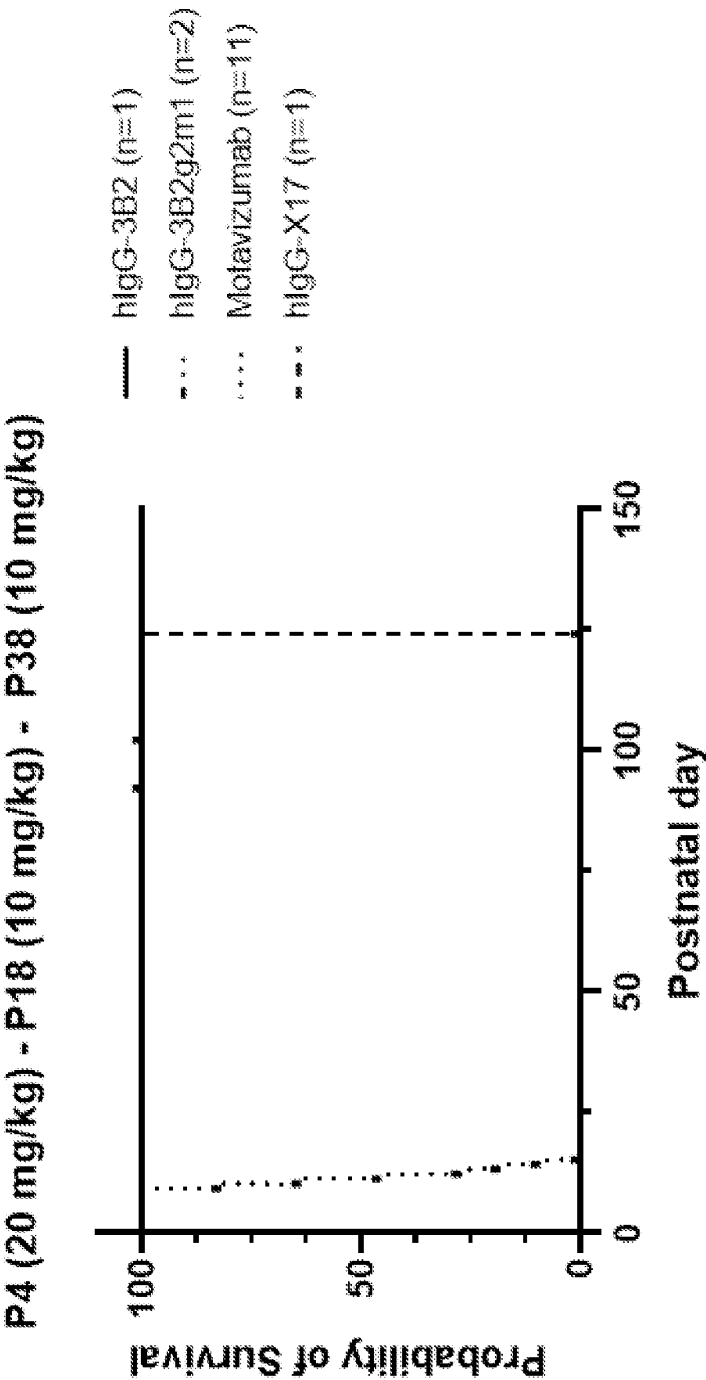


FIG. 58A

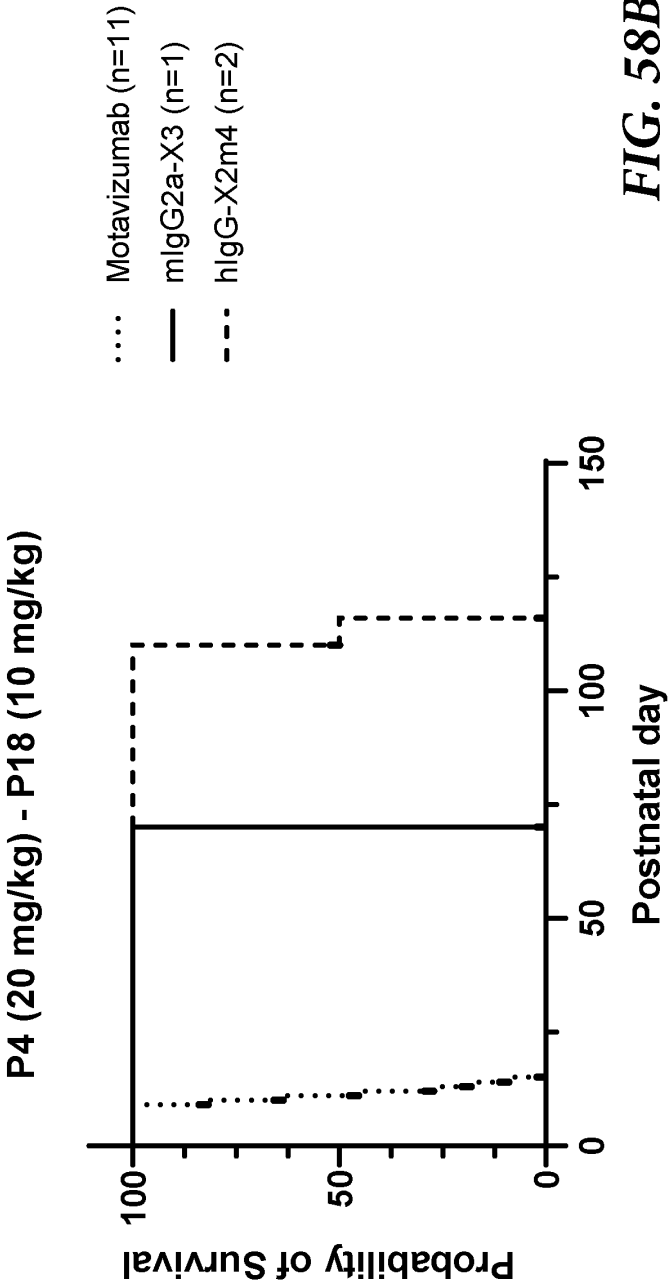


FIG. 58B

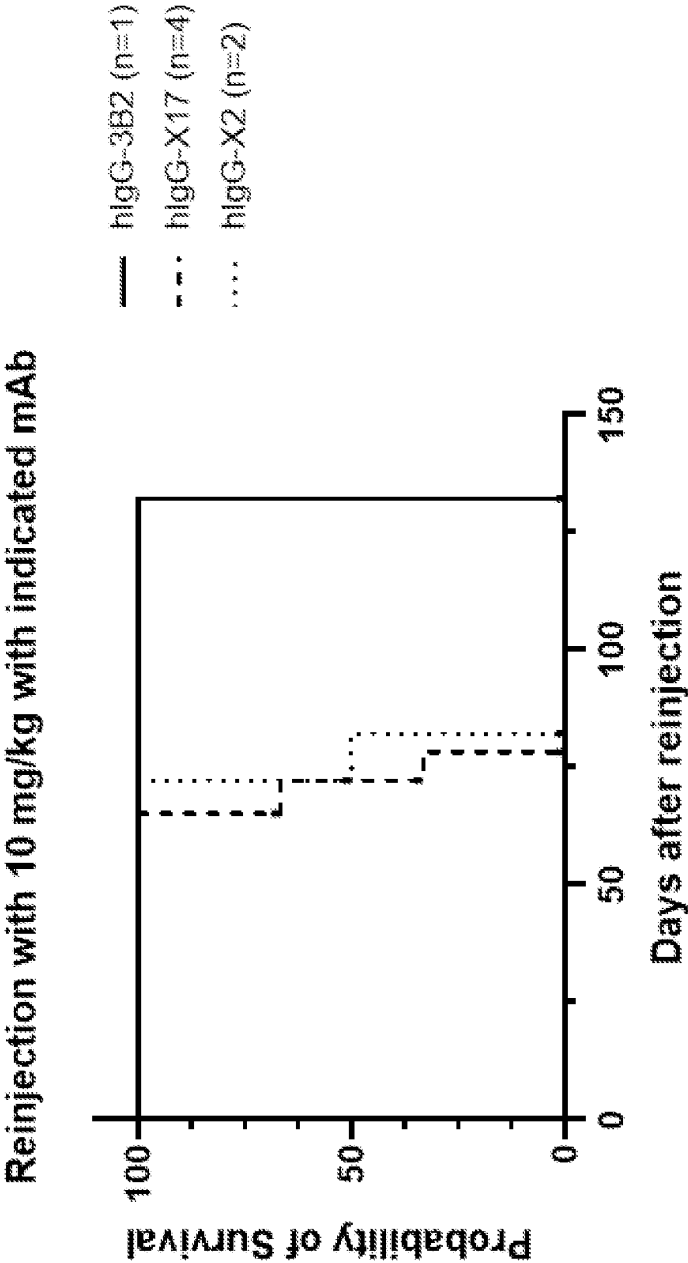


FIG. 58C