FIG. 1

ITR-U6-mi405-ITR sequence (SEQ ID NO: 11)

CAGCTGCGCGCTCGCTCGCTCACTGAGGCCGCCCGGGCAAAGCCCGGGCGTCGGGCGACCTTTGGTCGCCCGGCCTCAGTGAGCGAGCGAGCGCGCAGAGAGGGAGTGGGGTTCCTGCTATTGTCTTCGGC
GCGCCCAATTCACGCCGCCATCTCTAGGCCCGCGCCGGCCCCCTCGCACAGACTTGTGGGAGAAGCTCGGCTACTCCCCTGCCCCGGTTAATTTGCATATAATATTTCCTAGTAACTATAGAGGCTTAATGTGCGAT
AAAAGACAGATAATCTGTTCTTTTTAATACTAGCTACATTTTACATGATAGGCTTGGATTTCTATAAGAGATACAAATACTAAATTATTATTTTAAAAAACAGCACAAAAGGAAACTCACCCTAACTGTAAAGTAATTG
TGTGTTTTGAGACTATAAATATCCCTTGGAGAAAAGCCTTGTTTGCGTTTAGTGAACCGTCAGATGGTACCGTTTAAACTCGAGTGAGCGATCCAGGATTCAGATCTGGTTTCTGAAAGCCACAGATGGGAAACG
AGATCTGAATCCTGGACTGCCTACTAGAGCGGCCGCCACAGCGGGGAGATCCAGACATGATAAGATACATTTTTTGAATTGCGTACGCTTTATGTTCCTGCTGACATTTTTTCTAAGTTTTCTCTTGCTTTCCTCTTA
AATGCCAATCTGGAGAGTCTCCGTTAGGAGAAATGGACCCCAGCCAGGAAGAAGAGTTGAGTTGTATTTAAAACACGAGCTCCCCCTAAAGCATCCTTCTTTAGCTTCTAAGGAGAGGCAGAGACTGACAGGCA
GGACTCAGCAGGAAAAGCTACCCCCCTGACCTGCTCAGTCAGGCCCTAGGCCCAGCTCCACCCAGCCTGTGGCCCCCAGAGTTTCGGTAAAGAGTTCCCTGGGCCTTAAGGAACCTTGAGAGAGCATTTGAGG
GGTGCCACCACAAACTTGGCAGAAAAAACCCTCCCCCTCCAAGTCCAGTCCTAGAGAAGGAGCTGGCAACCTTGCCTTGCTTTGTAAGCAAAAGCCTCTTAGGGCTTGAGCTCAGATGTAGTGTTTGAGCTGTG
GCTGGTGCCCTGCCCCATCAGGGAGCCAATGGTAGACATCCTATGGGCATCTTTGTTTTCCGTAAGAGCAGGCTGTCTGGGGATGGGCCAGAGGAAGAGGCGACCTGGAGTCAACCAAGAGGAGGCCTTAACC
AAGCCTTAACCACAGAGGTTAACCAAGCCTTGAAAGCGCTTCCCCCTGAGCAGGCAGGAAGCACTGAGTCCACATGGTTGCCTCGCTGTTTCATTTCCTTACACTCAATTCTCTCAGTCTTTAAATGATCACTTGG
CCTTGAAGTTACGGATATTTGGGGTCTGAACTGAAGTTGAAGAAAAGAGGAAATGATTTAGGCTTTGTTTAAGATTAGGGGCCAGGTGCGGTGGCTCACGCCTGTAATCCCAGCACCTTGGGAGCCTGAGGCG
GGTGGATCACCTGAGGTCAGGAGTTCCAGACCAGCCTGGCCAACATAGCAAAACCCAGTCTCTACTAAAAATAACAATAAAAAAATTAGCCAGGTGTGGTGACACATGCCTGTAATCCCAGTTACTCAGGAGGCT
GAGGCAGAATTGCTTGAACTTGAGAGGTGGAGGTTGTAGTGAGCCAAGACCGCACCACTGCACTCCAGCCTGGCGACAGAGCCAGACTCCGTCTCAAAAACAACAACAAAAAAGATTAGAAGAAGCCCATTA
CTGCATGGTGATGCGGTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAGGCGCCGATATCGAATTCCTGCAGCCCGGGGGATCCACTAGTTCTAGAGCGGCCGCCACCGCGG
TGGGTAGATAAGTAGCATGGCGGGTTAATCATTAACT**ACAAGGAACCCCTAGTGATGGAGTTGGCCACTCCCTCTCTGCGCGCTCGCTCGCTCACTGAGGCCGGGCGACCAAAGGTCGCCCGACGCCCGGGCT**
TTGCCCGGGCGGCCTCAGTGAGCGAGCGAGCGCGC

Solid Line = mutated inverted terminal repeat (ITR)

Dashed Line 1 = Mouse U6 Promoter

Dashed Line 2 = mi405

Dashed Line 3 = T6 termination signal

Gray Highlight = Partial COL2A1 Intron

Bold + underlined = Full-length ITR

FIG. 2

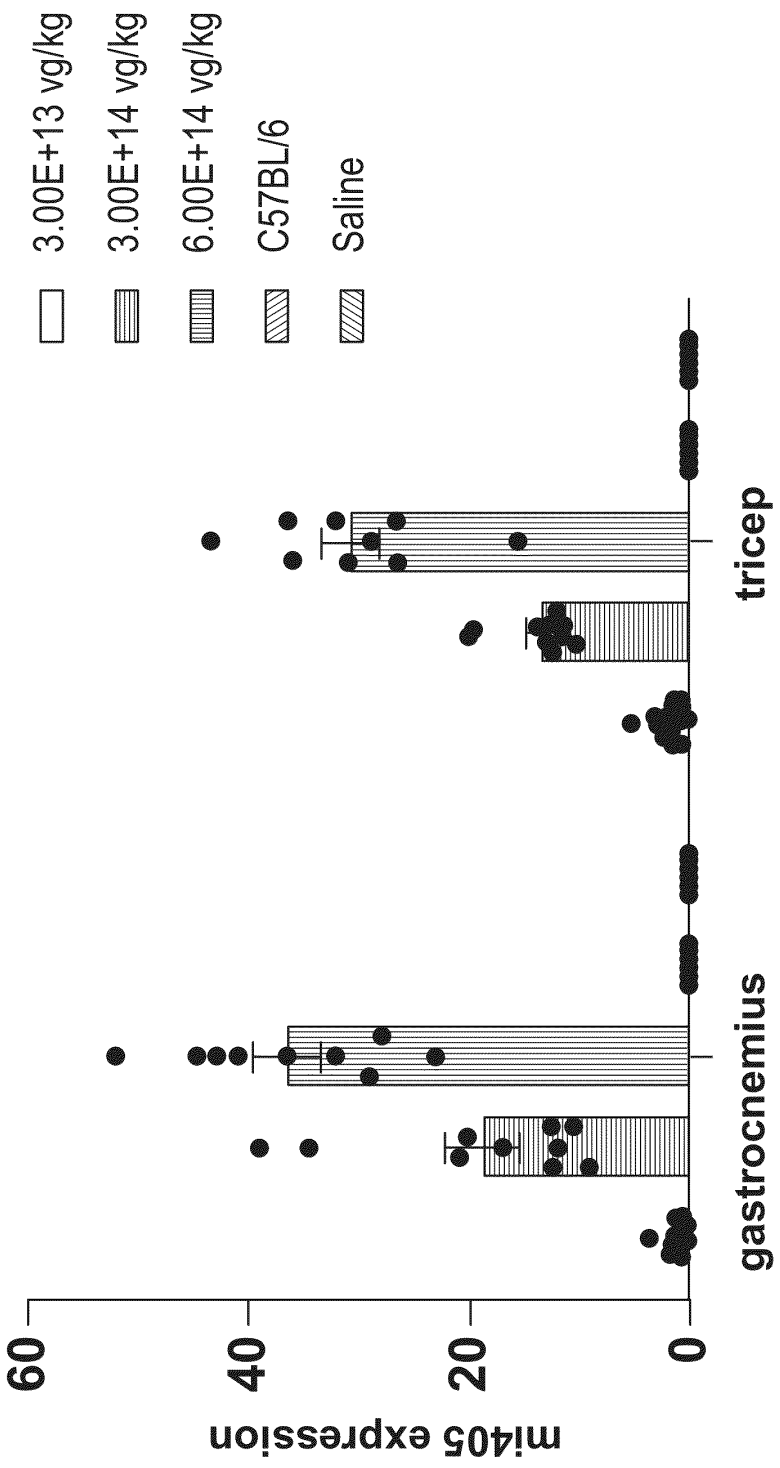

3.00E+13 vg/kg
3.00E+14 vg/kg
6.00E+14 vg/kg
C57BL/6
Saline
mi405
mi405 expression
60
40
20
0
gastrocnemius
tricep

FIG. 3

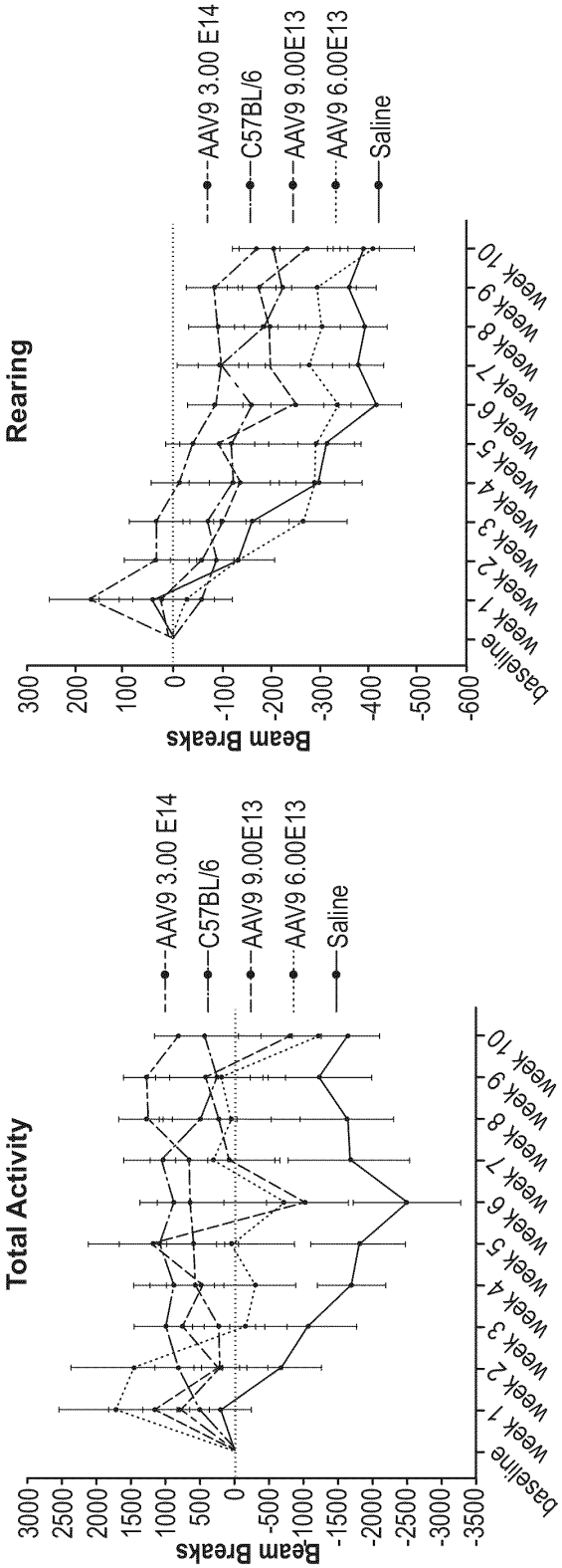

Rearing
Beam Breaks
300
200
100
0
-100
-200
-300
-400
-500
-600
baseline
week 1
week 2
week 3
week 4
week 5
week 6
week 7
week 8
week 9
week 10
AAV9 3.00 E14
C57BL/6
AAV9 9.00E13
AAV9 6.00E13
Saline
Total Activity
Beam Breaks
3000
2500
2000
1500
1000
500
0
-500
-1000
-1500
-2000
-2500
-3000
-3500
baseline
week 1
week 2
week 3
week 4
week 5
week 6
week 7
week 8
week 9
week 10
AAV9 3.00 E14
C57BL/6
AAV9 9.00E13
AAV9 6.00E13
Saline

FIG. 4

Body of Data Supporting Selection of ARM-201 Clinical Candidate				
Study	RoA	Mouse	N	Vector
Tox / Biodistribution	IV	C57BL/6	180	1st Gen
Vector comparison*	IV	DUX4	126	1st Gen
Vector comparison*	IV	DUX4	96	1st Gen
Vector comparison*	IM	C57BL/6	74	2nd Gen
Vector comparison*	IV	C57BL/6	51	2nd Gen
Vector comparison*	IV	DUX4	221	2nd Gen

N = 748

FIG. 5

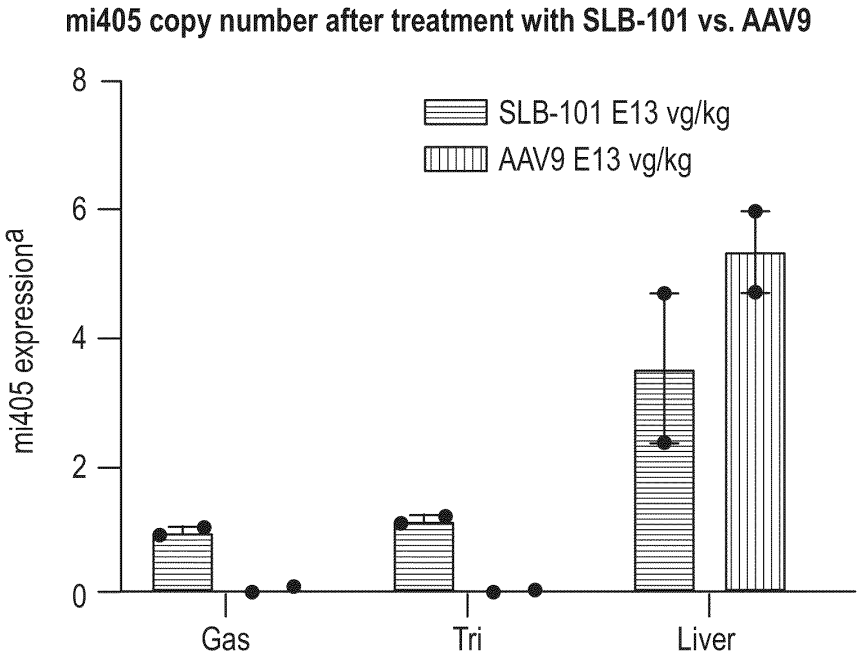

mi405 copy number after treatment with SLB-101 vs. AAV9
SLB-101 E13 vg/kg
AAV9 E13 vg/kg
mi405 expression[a]
8
6
4
2
0
Gas
Tri
Liver

FIG. 6

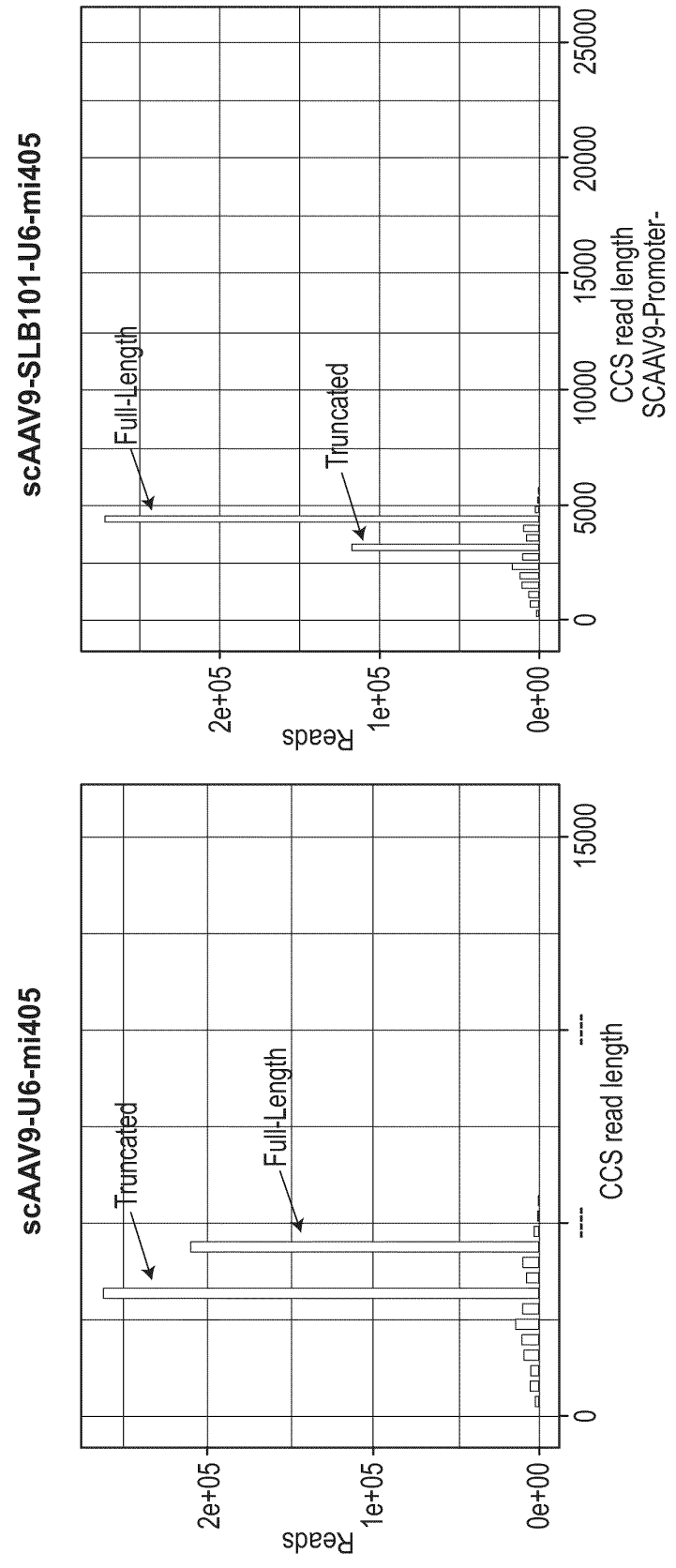

scAAV9-U6-mi405
Truncated
Full-Length
Reads
0e+00
1e+05
2e+05
0
15000
CCS read length
scAAV9-SLB101-U6-mi405
Full-Length
Truncated
Reads
0e+00
1e+05
2e+05
0
5000
10000
15000
20000
25000
CCS read length
SCAAV9-Promoter-

FIG. 7A

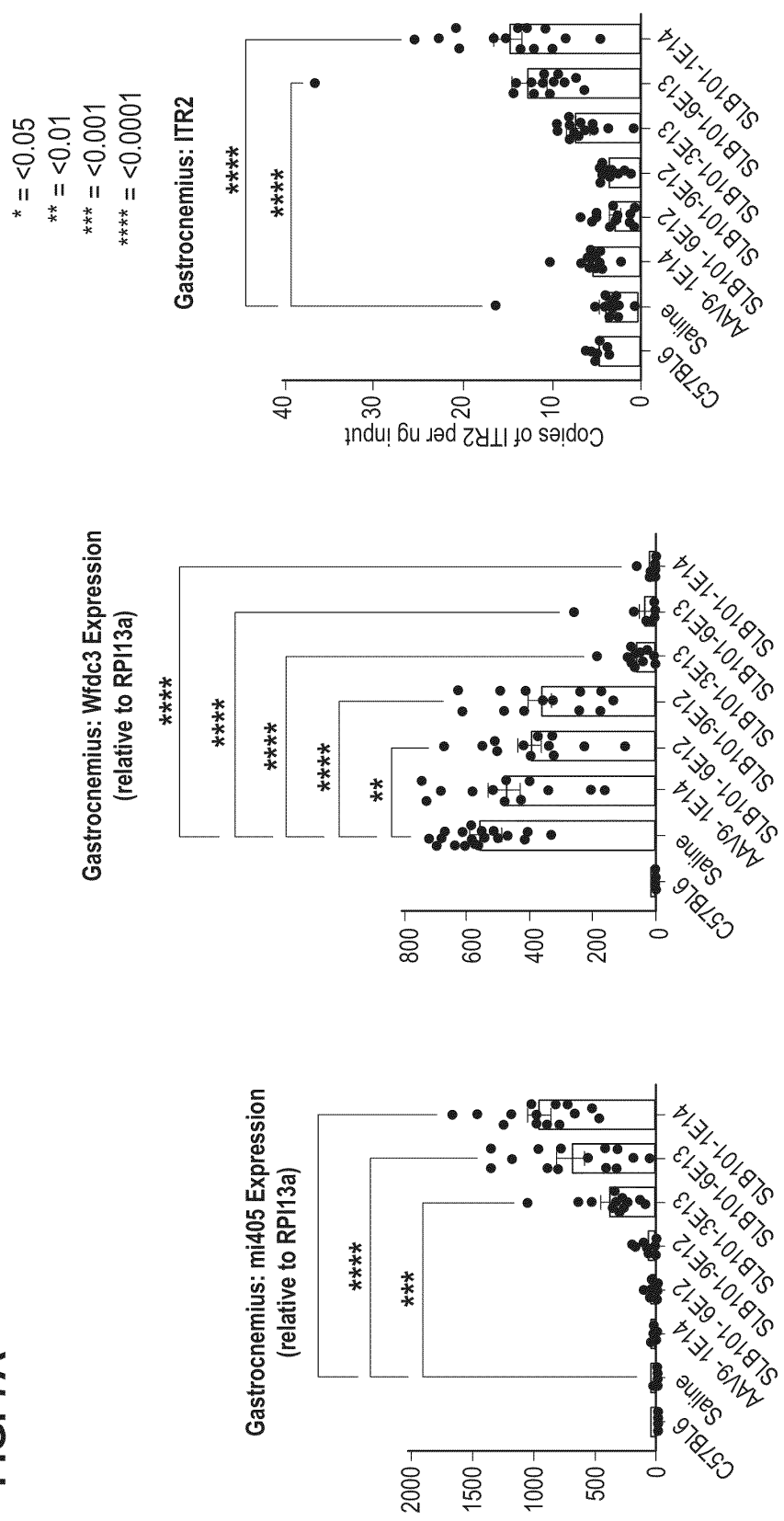

Gastrocnemius: mi405 Expression
(relative to RPl13a)
2000
1500
1000
500
0
****
***
C57BL6
Saline
AAV9 - 1E14
SLB101-6E12
SLB101-9E12
SLB101-3E13
SLB101-6E13
SLB101-1E14
Gastrocnemius: Wfdc3 Expression
(relative to RPl13a)
800
600
400
200
0
****
****
****
****
**
Gastrocnemius: ITR2
Copies of ITR2 per ng input
40
30
20
10
0
****
****
* = <0.05
** = <0.01
*** = <0.001
**** = <0.0001

FIG. 7B

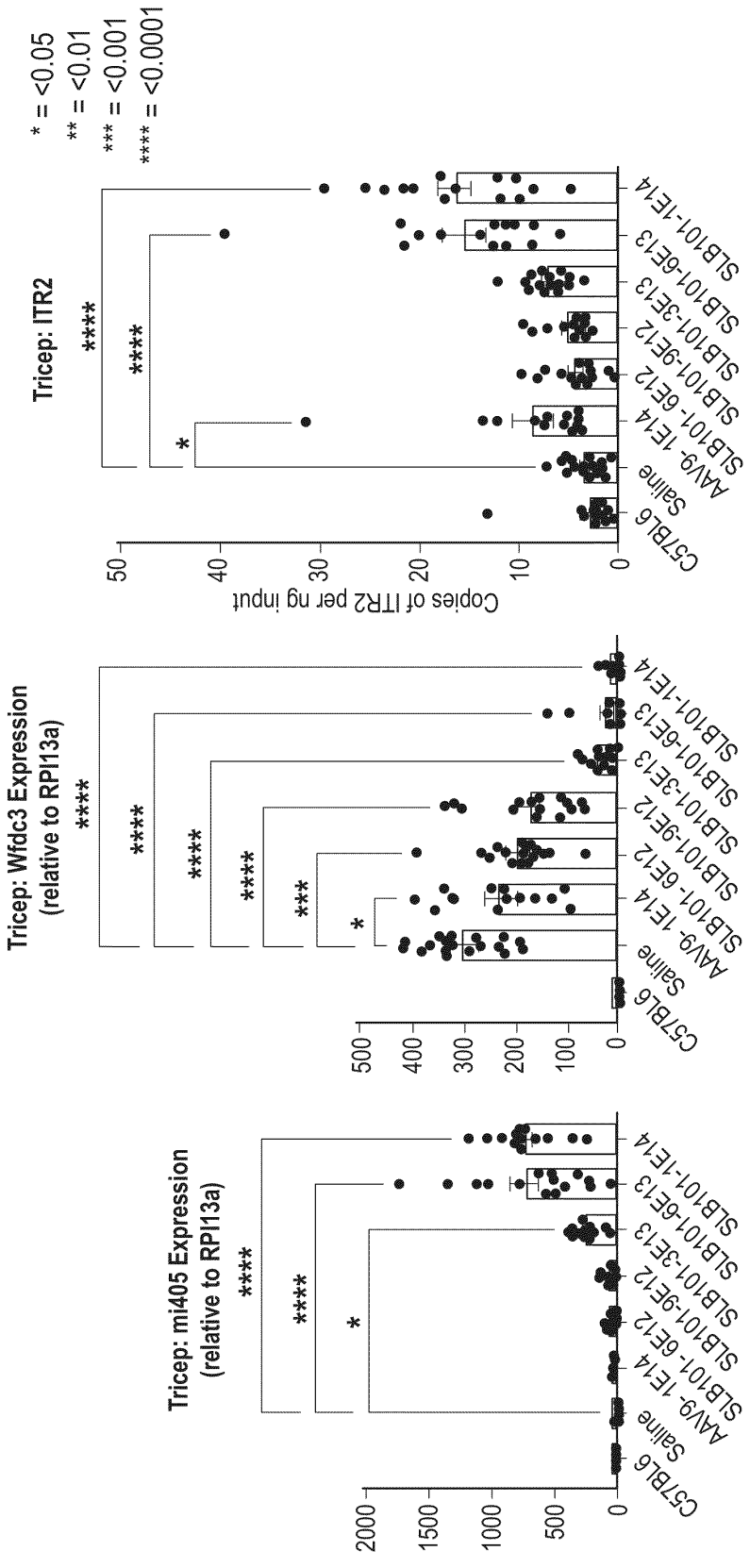

* = <0.05
** = <0.01
*** = <0.001
**** = <0.0001
Tricep: ITR2
Copies of ITR2 per ng input
Tricep: Wfdc3 Expression (relative to RPl13a)
Tricep: mi405 Expression (relative to RPl13a)
C57BL6
Saline
AAV9- 1E14
SLB101- 6E12
SLB101-9E12
SLB101-3E13
SLB101-6E13
SLB101-1E14

FIG. 7C

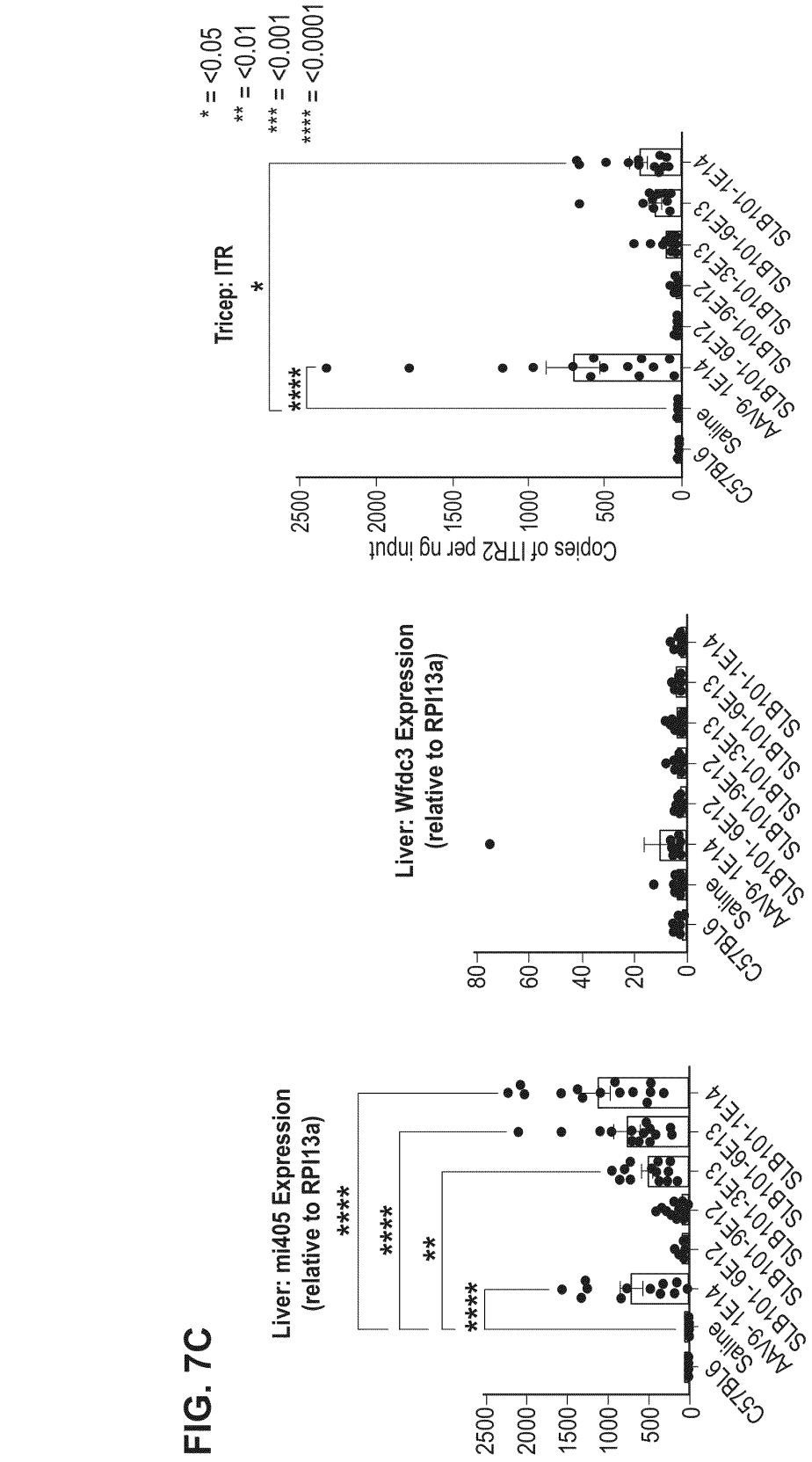
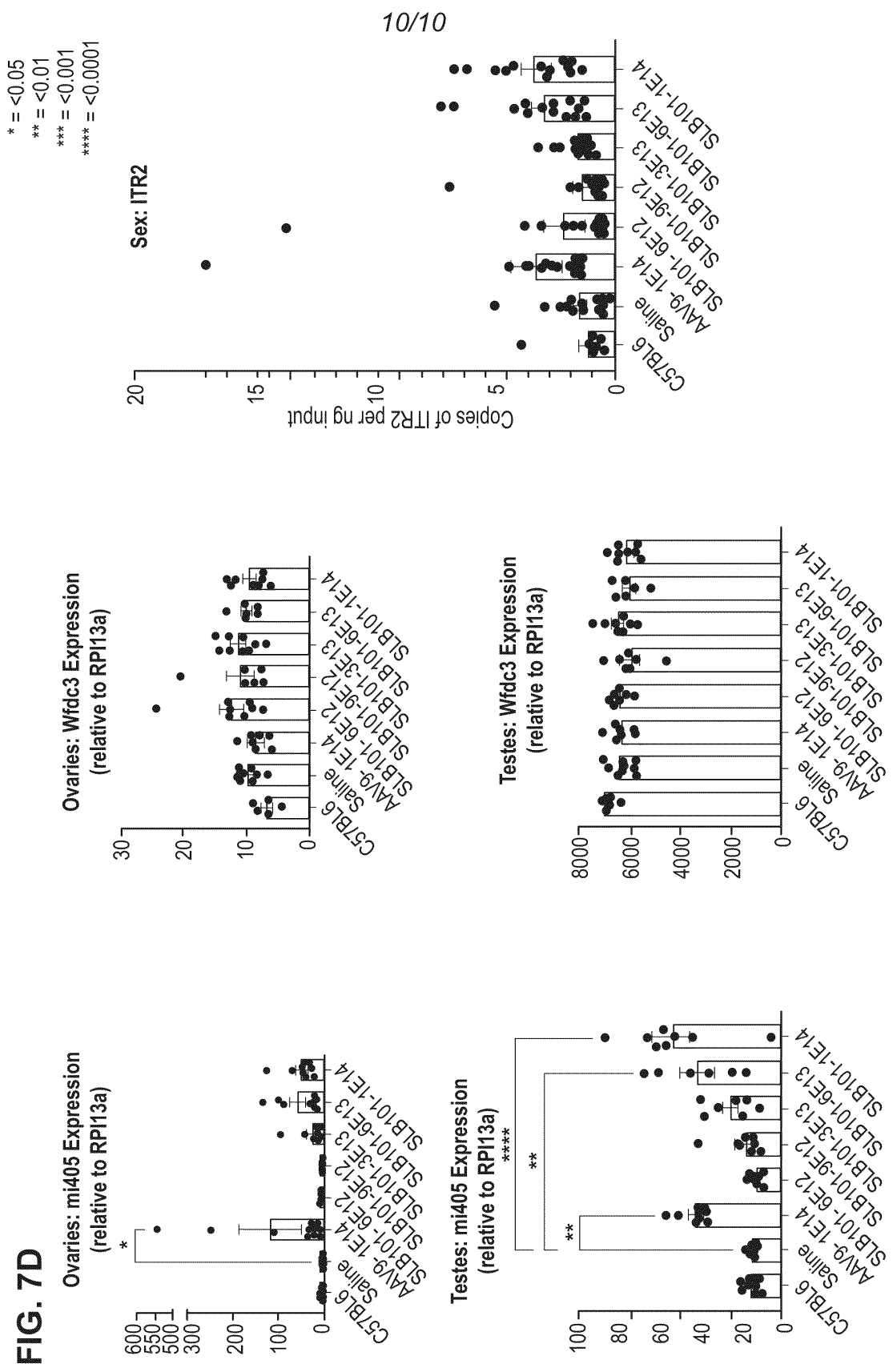

Tricep: ITR
Copies of ITR2 per ng input
* = <0.05
** = <0.01
*** = <0.001
**** = <0.0001
Liver: Wfdc3 Expression (relative to RPl13a)
Liver: mi405 Expression (relative to RPl13a)
C57BL6
Saline
AAV9- 1E14
SLB101- 6E14
SLB101-9E12
SLB101-3E13
SLB101-6E13
SLB101-1E14

FIG. 7D


Ovaries: mi405 Expression
(relative to RPl13a)
Testes: mi405 Expression
(relative to RPl13a)
Ovaries: Wfdc3 Expression
(relative to RPl13a)
Testes: Wfdc3 Expression
(relative to RPl13a)
Sex: ITR2
Copies of ITR2 per ng input
* = <0.05
** = <0.01
*** = <0.001
**** = <0.0001
C57BL6
Saline
AAV9- 1E14
SLB101- 6E12
SLB101-9E12
SLB101-3E13
SLB101-6E13
SLB101-1E14