

FIG. 1A

i. Library injection and Cre mechanism

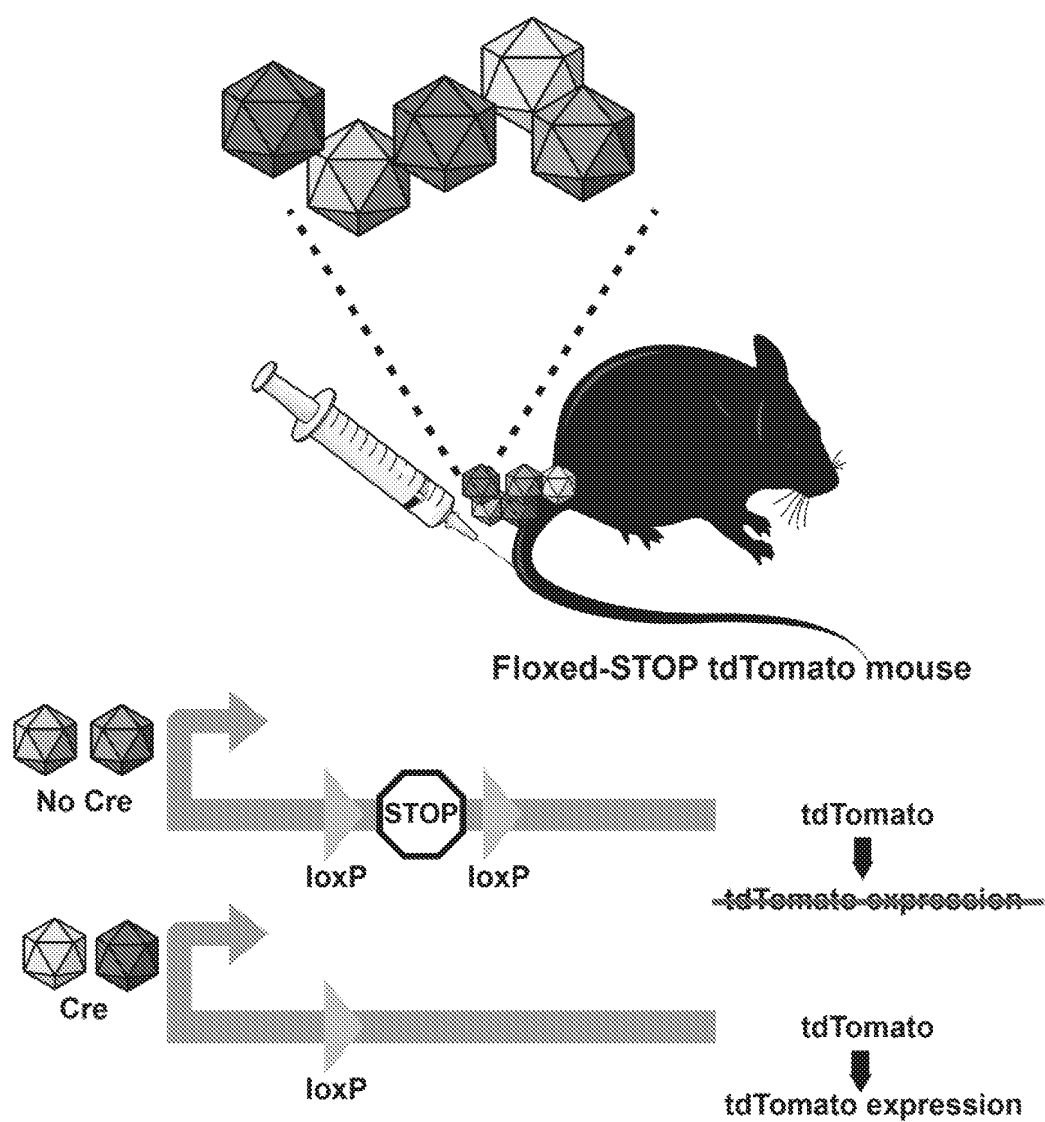
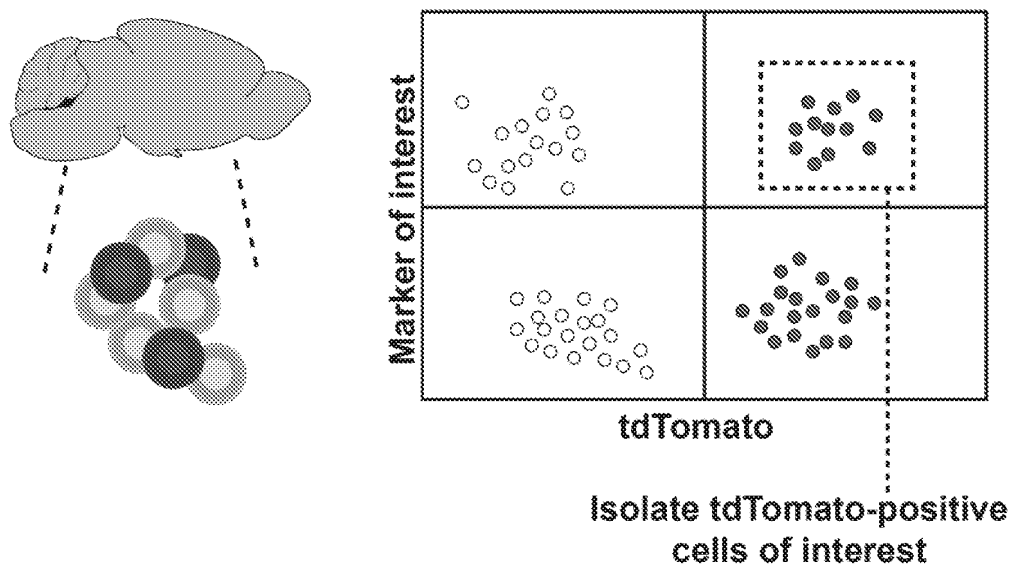


FIG. 1B

ii. Cell isolation and tdTomato-positive cell sorting



iii. Transduction-competent vectors

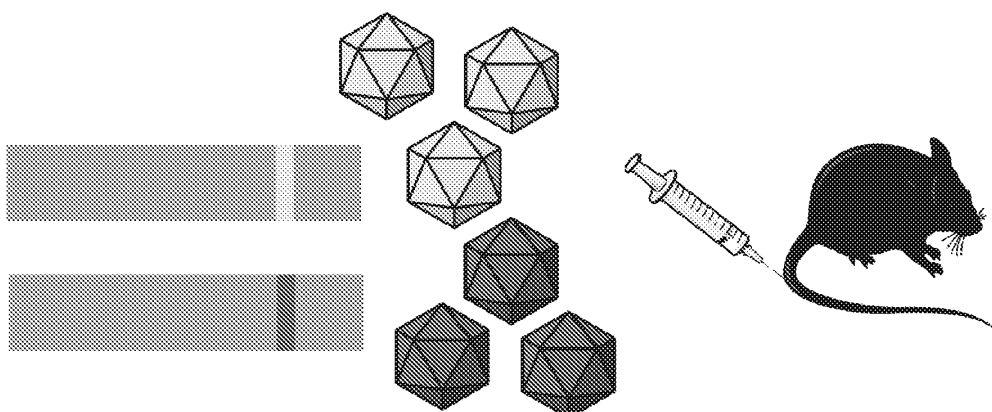


FIG. 1B, continued

Nucleotide Sequence	SEQ ID NO:	Peptide Sequence	SEQ ID NO:	% of pool
CAGCCTCGTCTTACTGAGCTT	17.	QPRLTEL	18.	0.05572947
AGTCATTTTAGTAATTCTATG	19.	SHFSNSM	20.	0.02365472
CCGCCTTCTACGGGGAATCCT	21.	PPSTGNP	22.	0.02328549
AATAGTCTTGGGGTGATGGAT	23.	NSLGVMD	24.	0.02276376
CCTCCTATGGCTACGCCTCAG	25.	PPMATPQ	26.	0.02126276
CCGCATACTCGGGCTGAGCCT	27.	PHTRAEP	28.	0.01834104
GTGAATCAGACTAATTATTCT	29.	VNQTNYS	30.	0.01784338
CATGCGCCGAGGCTGGTTCAG	31.	HAPRLVQ	32.	0.01539524
TGGAGTAAGGAGTCGAATCAT	33.	WSKESNH	34.	0.01529892
ACTACTGCTGGTCCGACTGAG	35.	TTAGPTE	36.	0.01419123
TCGTGGCCGCACTCGCCTTCG	37.	SWPQSPS	38.	0.0139424
ACTTGTGCTGTTCCGGATCGG	39.	TCAVPDR	40.	0.01326816
CCTCGTGCGGAGCCTCGGACG	41.	PRAEPRT	42.	0.01314776
CCTACTGCGGGTGTGTATCTG	43.	PTAGVYL	44.	0.01308354
CAGTTGAGTAATACGACGTTG	45.	QLSNTTL	46.	0.01285077
CGGATGGATATGGCTGTGAGG	47.	RMDMAVR	48.	0.01261799
CGGCCGCCGCTGCGACTCCT	49.	RPPPATP	50.	0.01257786
CAGTATCTGTTTCATATTTT	51.	QYLFHIF	52.	0.01226482
GGTGCTGGGACTCTTACTTCT	53.	GAGTLTS	54.	0.01223271
CCTCTTTCGCGTGTTGCTTTG	55.	PLSRVAL	56.	0.0119277
ACTACTGCTAAGACGACTGGG	57.	TTAKTTG	58.	0.01187954
TCGCTGCCGGCTACTCATGTG	59.	SLPATHV	60.	0.01170295
AGTGAGAAGGTGATTCGGAGT	61.	SEKVIRS	62.	0.01136583
AAGTCGACTATGCGGAAGCCG	63.	KSTMRKP	64.	0.01134977
GTGTCGAAGCAGAATACGACT	65.	VSKQNTT	66.	0.01106081
GCTGATATGACGGGGCCTACT	67.	ADMTGPT	68.	0.01080396
CCTACTCGTGCGACTCCTATT	69.	PTRATPI	70.	0.01057921
TCTTGGCCTGGGCTGTTGCTG	71.	SWPGLLL	72.	0.01055513
TGGAGGCTGGAGCAGTTGAAG	73.	WRLEQLK	74.	0.01037051
CTTCCGAGTTCTCCGGTTTTT	75.	LPSSPVF	76.	0.31919829
CCTCAGCGGCATCAGAATGAT	77.	PQRHQND	78.	0.00414981
TCGATTCCGTTTCGGTATCCG	79.	SIPFRYP	80.	0.03205067
CCTGATGGTCCGCAGGCTCTG	81.	PDGPQAL	82.	0.00370834
TCGACTACGTGGAAGTCTGAT	83.	STTWKSD	84.	0.05475021
TTGCAGAAGATGGCTGTTCCG	85.	LQKMAVP	86.	0.00273711
N/A		Others		0.13220799

FIG. 2A

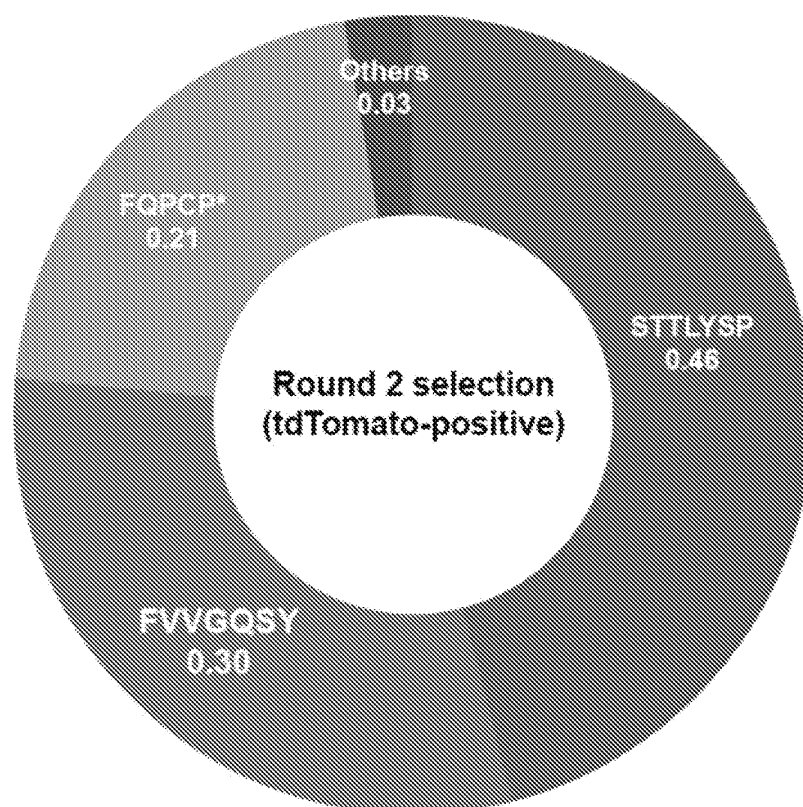
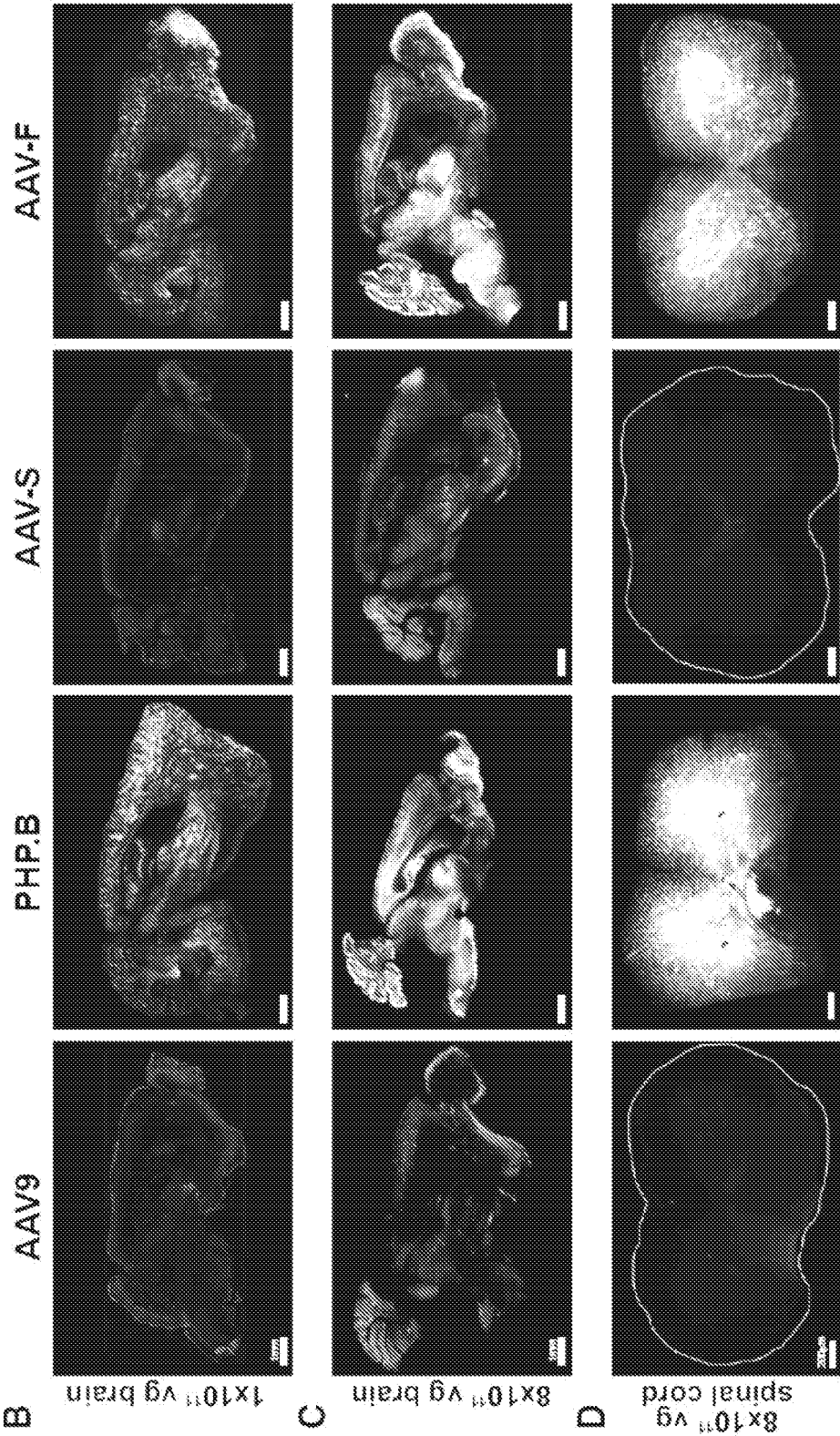


FIG. 2B



FIG. 3A



FIGs. 3B-D

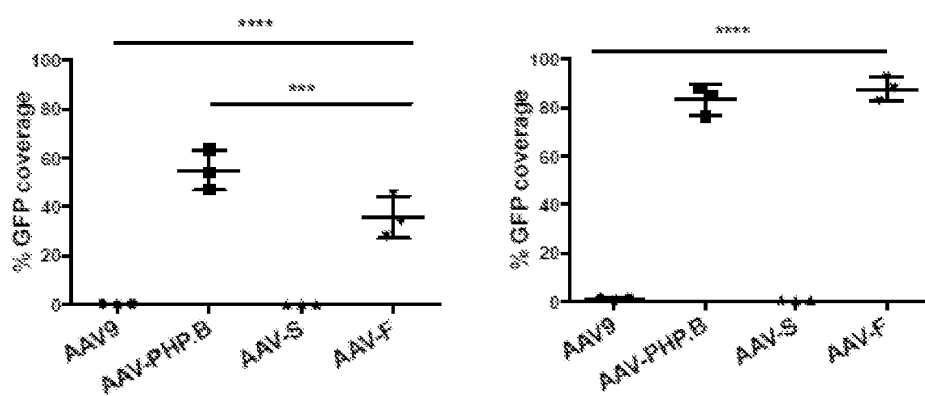


FIG. 3E

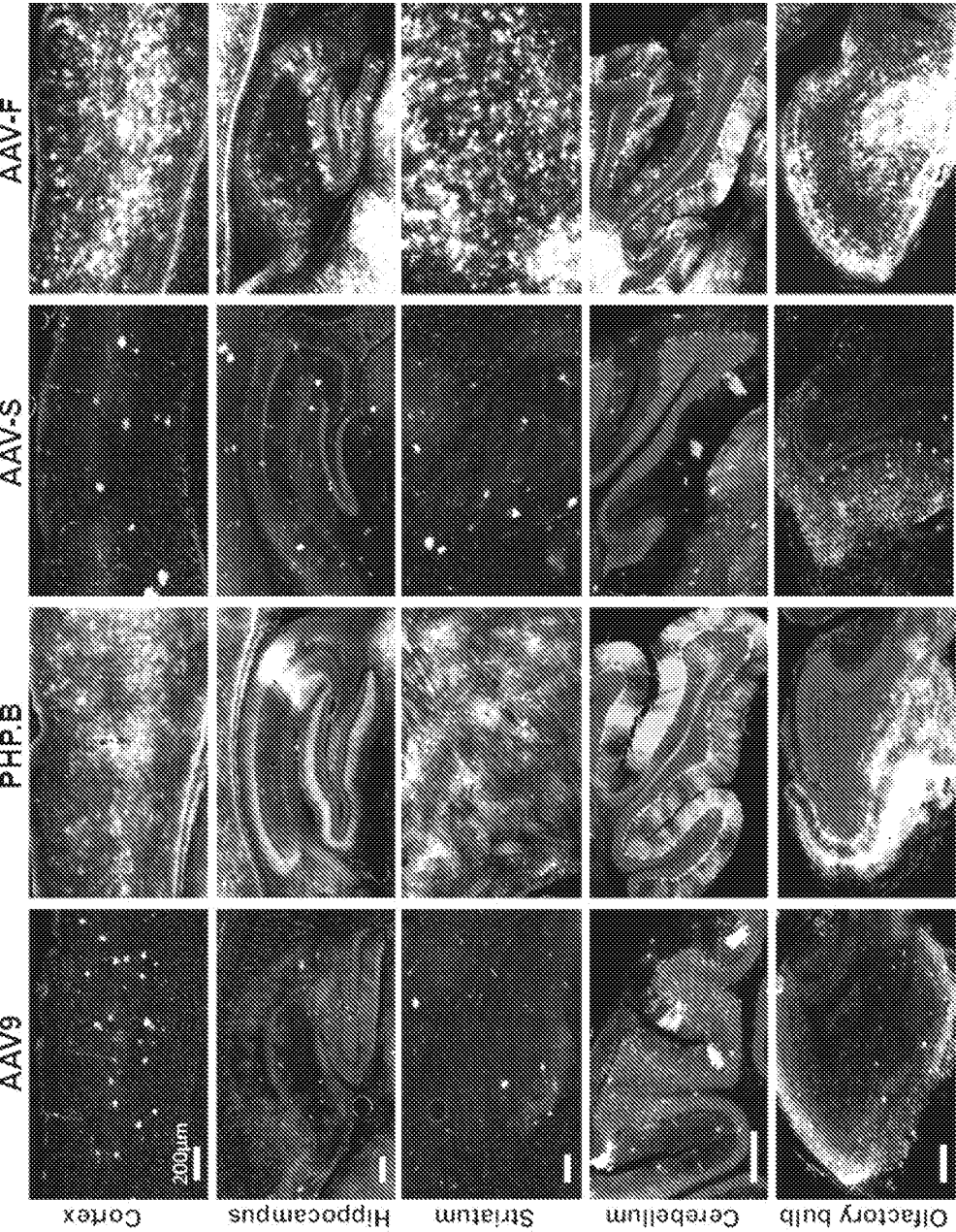
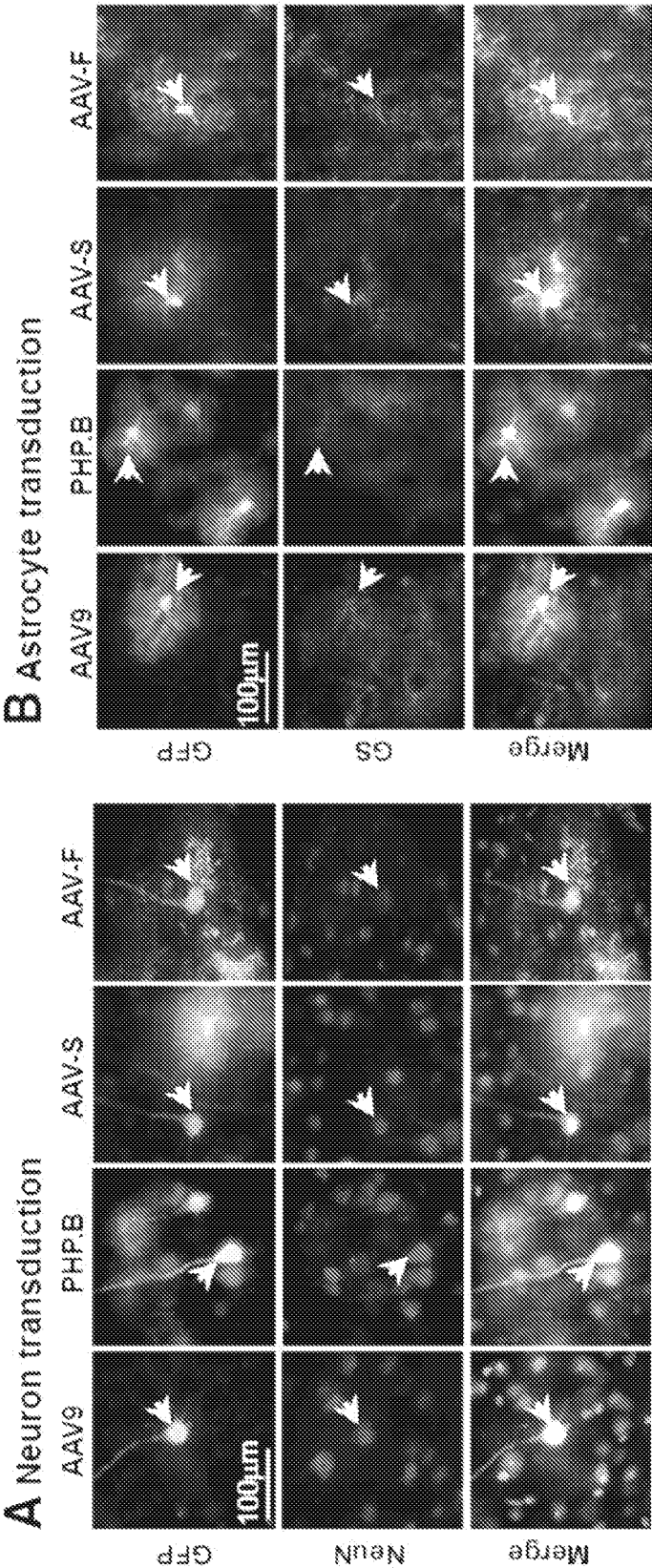


FIG. 3F



FIGs. 4A-B

Cell-type counting of neurons and astrocytes

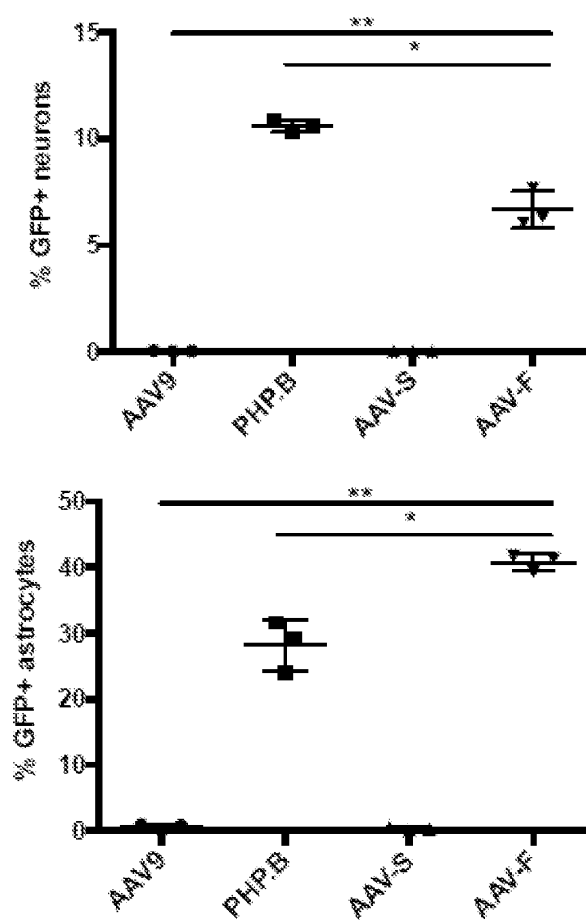


FIG. 4C

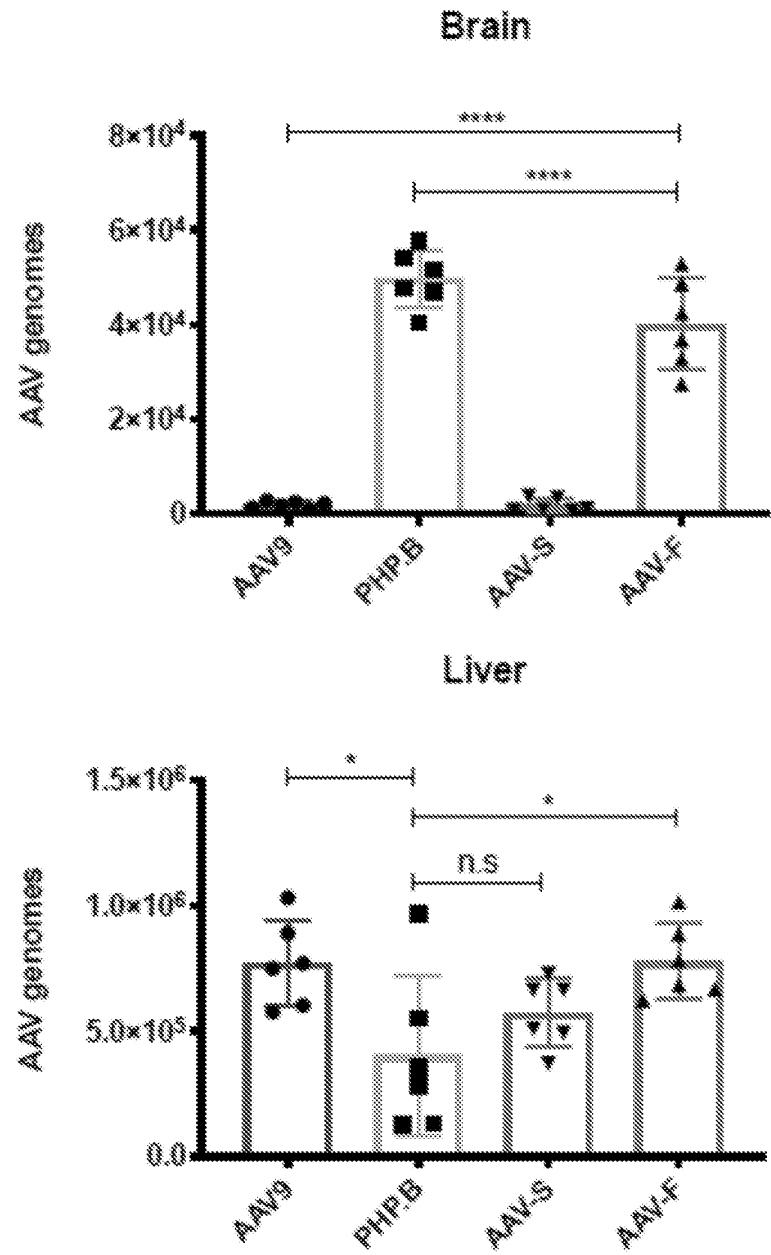


FIG. 4D

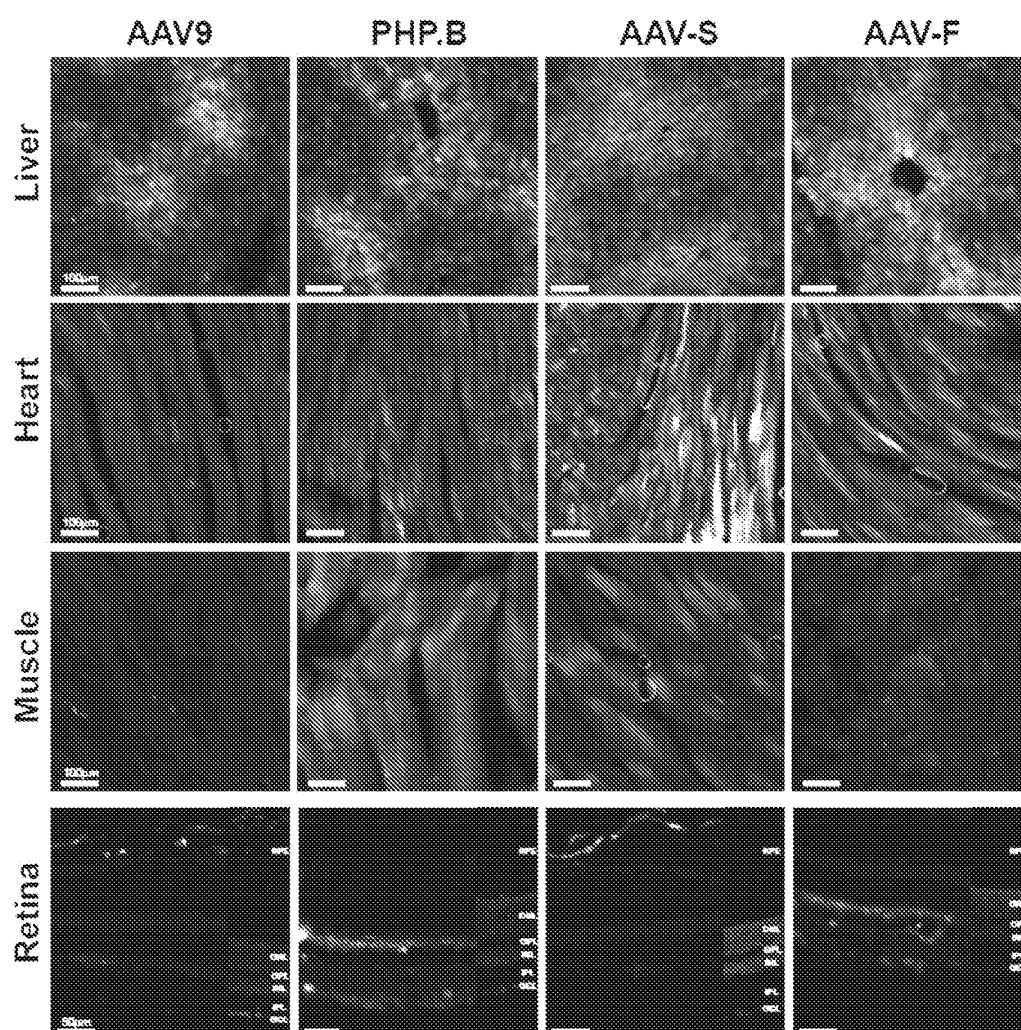
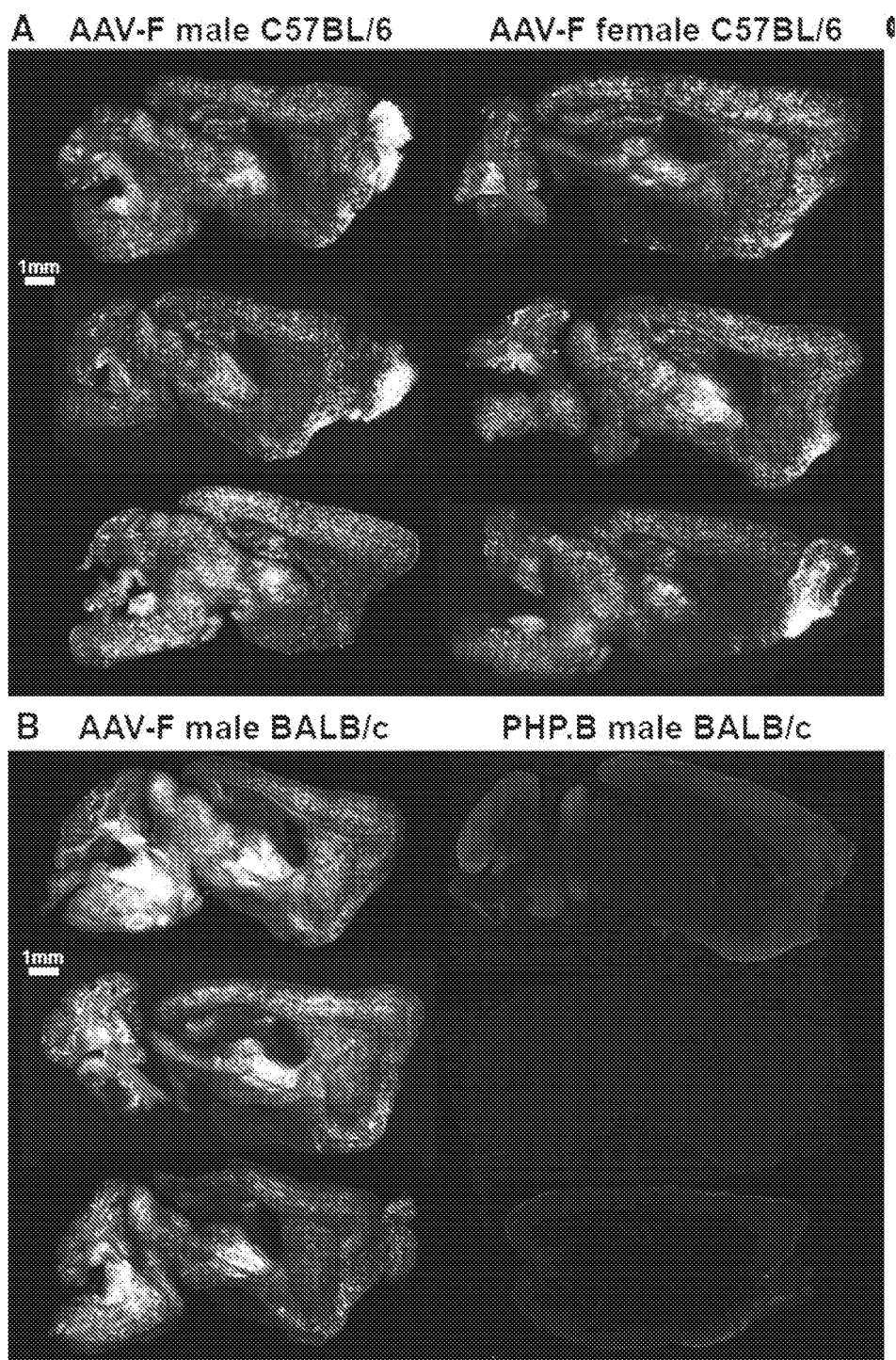


FIG. 4E

*FIGs. 5A-B*

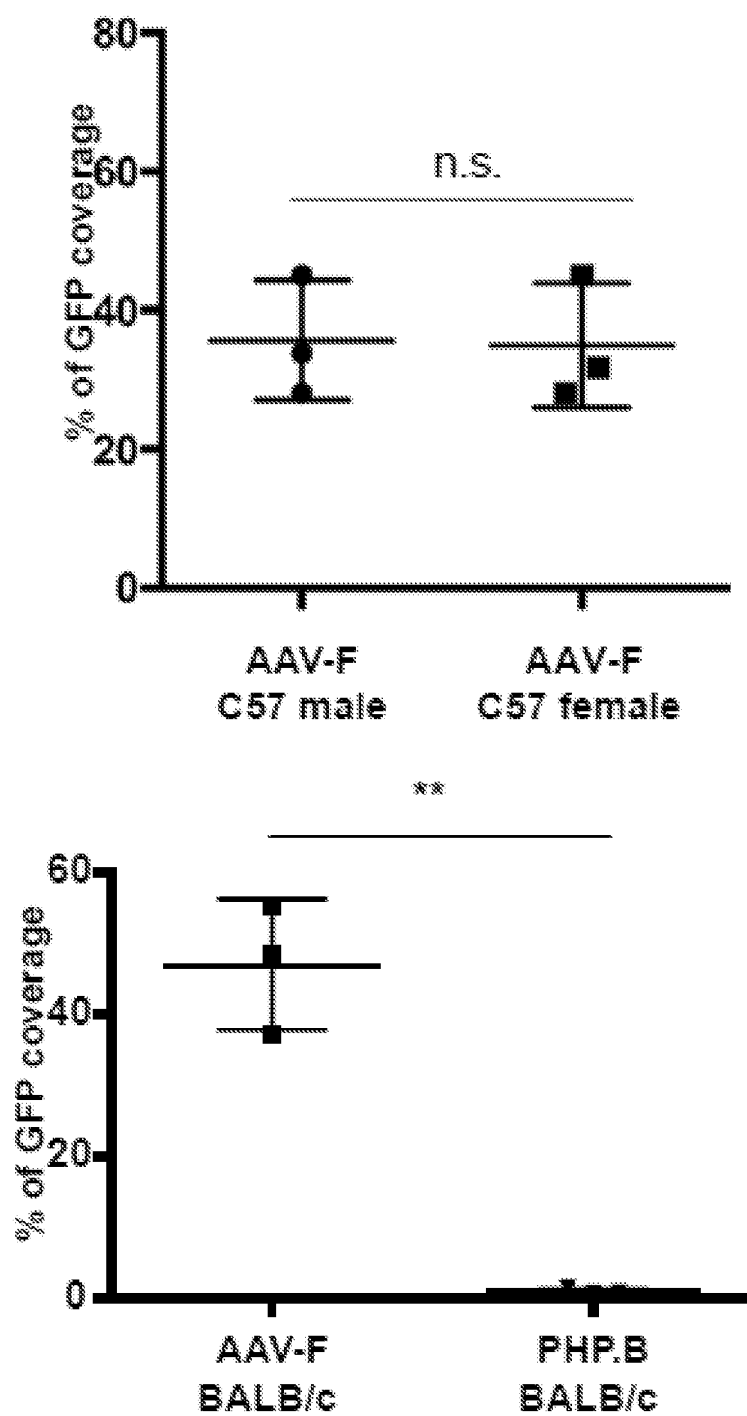


FIG. 5C

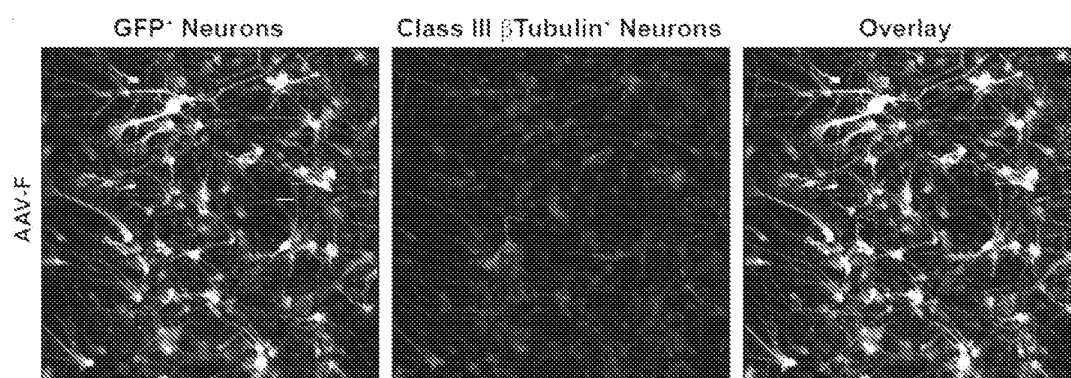


FIG. 6A

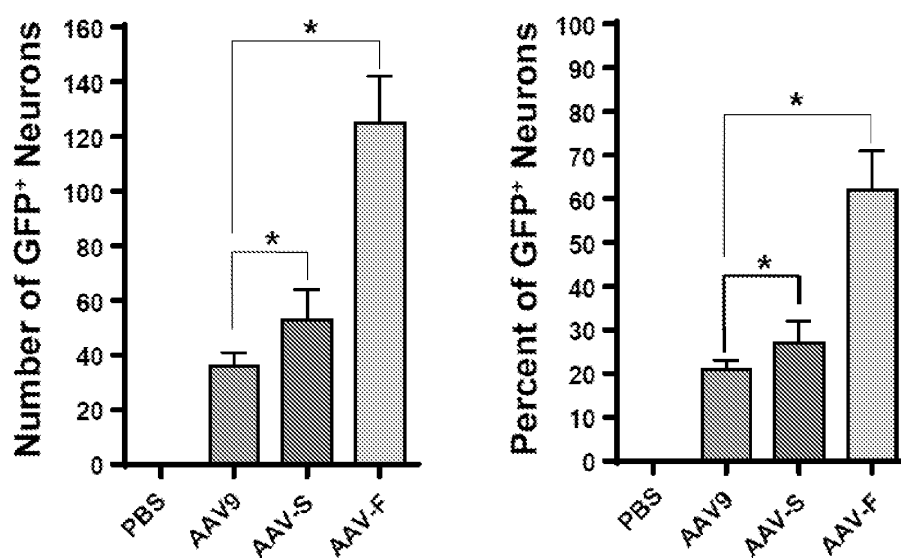


FIG. 6B

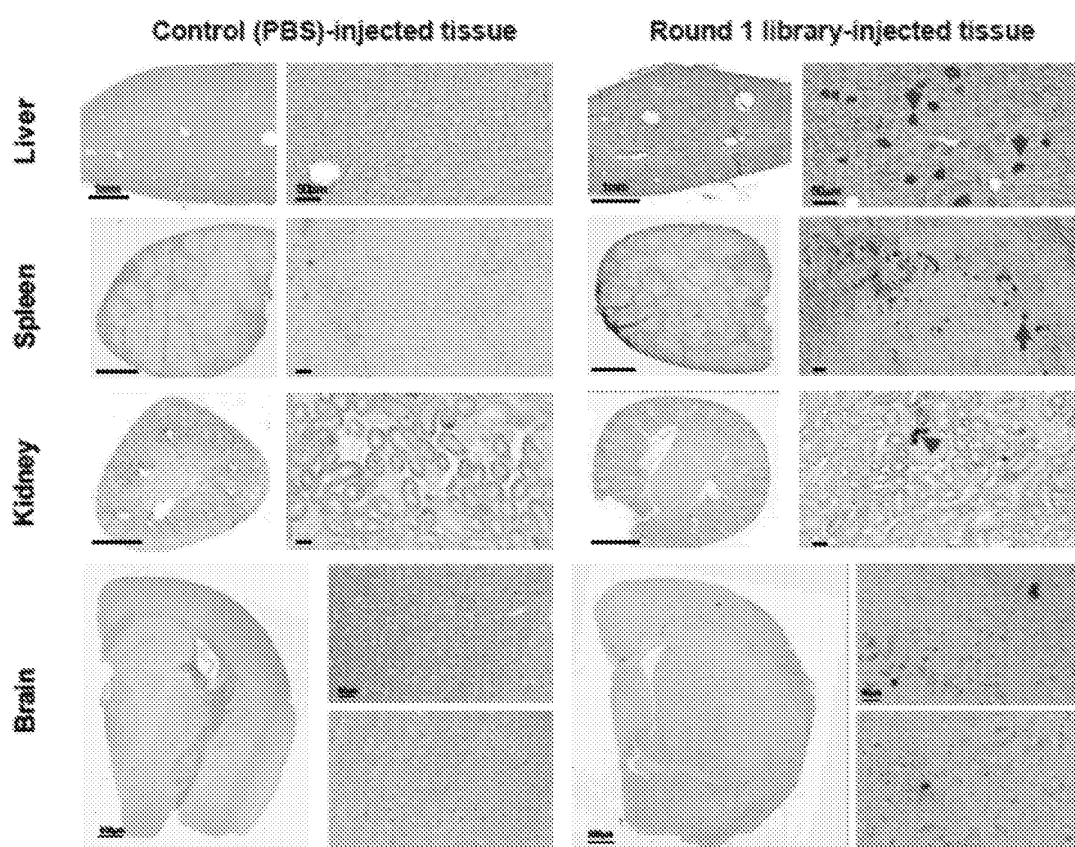


FIG. 7A

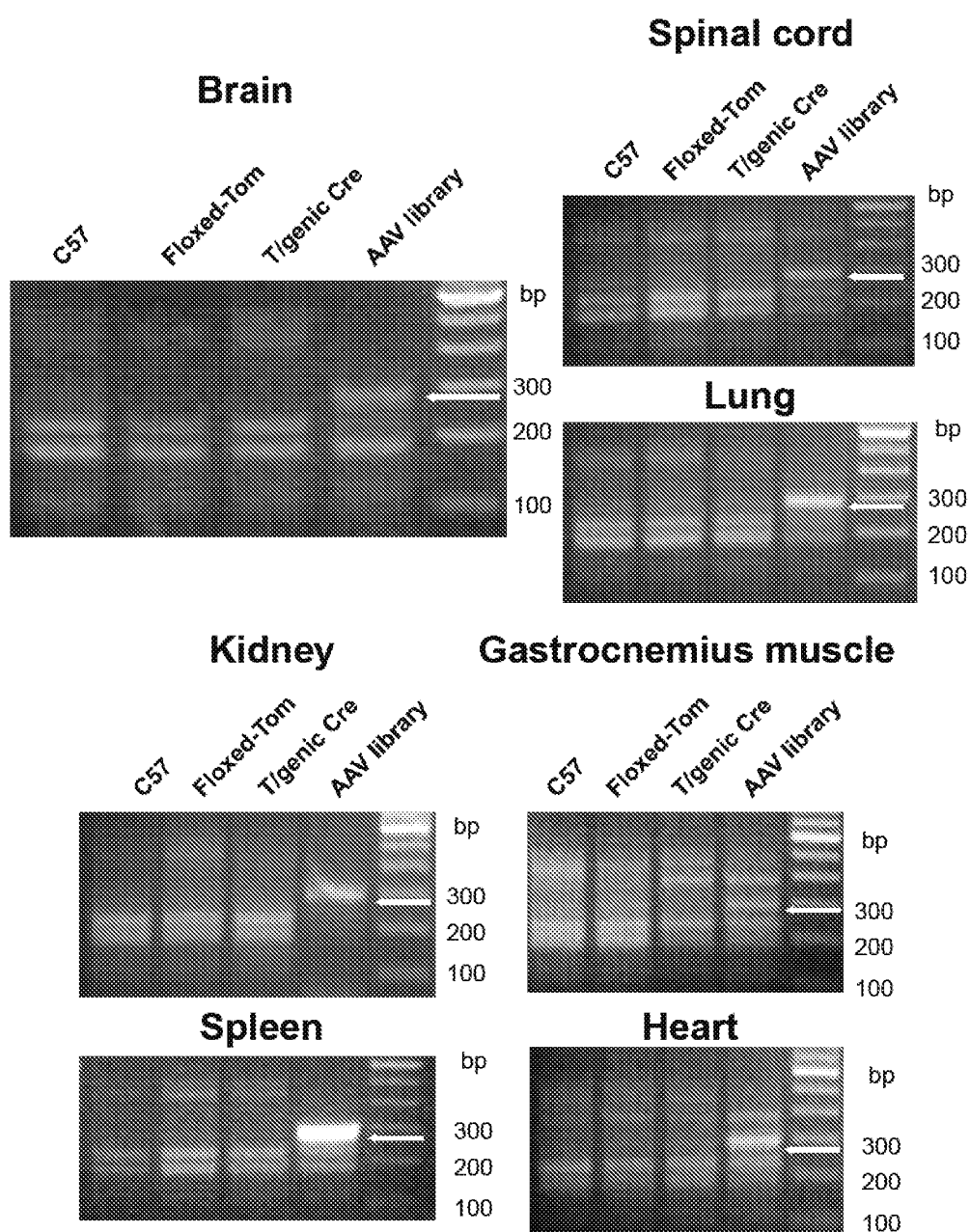
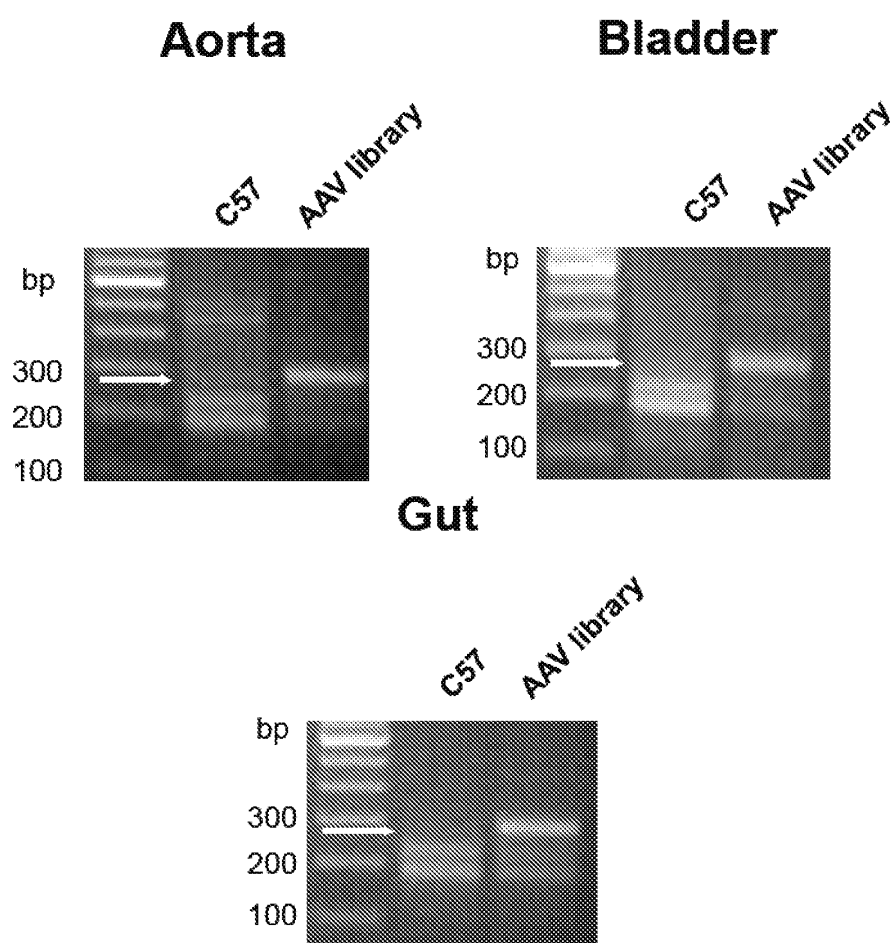


FIG. 7B

*FIG. 7B, Continued*

DNA sequence	SEQ ID NO:	Peptide sequence	SEQ ID NO:	Frequency
ACGGGGTGTAAGTGTTGCGCAG	87.	TGCKCSQ	88.	0.05897
CATCTGCCTGTTATGAATGAG	89.	HLPVMNE	90.	0.055593
GTTTCGTTGAATTATACTGCT	91.	VSLNYTA	92.	0.052346
CCTCCTCCTCCTCCGCTGTG	93.	PPPPPPV	94.	0.0498
AGTTCTACTGCTAGTCGTCGT	95.	SSTASRR	96.	0.048579
CTGCTTGTGACGTGTCCGGAT	97.	LLVTCPD	98.	0.039487
TCGTTGCTGCGTTATGCTCCG	99.	SLLRYAP	100.	0.039149
CAGCCGCTGCGTCCGAATCTG	101.	QPLRPNL	102.	0.037876
GCTTTGGATACTCATCATTGG	103.	ALDTHHW	104.	0.036811
CGGCCTACTCGTCTTTCTCCG	105.	RPTRLSP	106.	0.036811
GATGCTTGGTCGGCTTCTATT	107.	DAWSASI	108.	0.036213
TATAAGTGTTGGCCGAGGAGT	109.	YKCWPRS	110.	0.03585
AAGTATCTGACTAATCTTTCT	111.	KYLTNLS	112.	0.034941
TCGCGGCCTCCGCCGTCTCTG	113.	SRPPPSL	114.	0.030083
TAGGCGCCGATTCTTTAGTTG	115.			0.029433
ATGCCTCCTTCTCCTCCGGGT	116.	MPPSPPG	117.	0.029069
CCGTTTCCTCAGATGCTTTTT	118.	PFPQMLF	119.	0.028108
CCTCAGGCGTCTCATGTAAAT	120.	PQASHVN	121.	0.027199
GAGTATTGTTCTTAGATTCCT	122.	EYCS	123.	0.026887
TCGTAGAATTTGCGGGTGTTG	124.	S	125.	0.025588
TATTATCATTCGCTGTCGTCG	126.	YYHSLSS	127.	0.024809
AAGCATTCTCAGCGGCGGAAT	128.	KHSQRRN	129.	0.024004
TAGACTAATGTGTGGATTAAT	130.			0.023484
ACTAAGACGCCTGAGCATTAG	131.	TKTPEH	132.	0.019977
GGGCCGGAGGGGCCGCGTCTG	133.	GPEGPRL	134.	0.019536
TGTACTTCTAATCTGCATGGG	135.	CTSNLHG	136.	0.018263
GTTATTACTCATCTGACTGAT	137.	VITHLTD	138.	0.018133
GATTCTAATCATTTTGGTCCG	139.	DSNHFGP	140.	0.017899
CCGAGTCAGCAGACTTAGATG	141.	PSQQT	142.	0.014652
TTTGTTGCTGATTGGGAGCCT	143.	FVADWEP	144.	0.014262
CTGATGCAGACTAATATTACG	145.	LMQTNIT	146.	0.011742
CTGGTGGTTCCTAATCGTGAT	147.	LVVPNRD	148.	0.011586
N/A	149.	Others	150.	0.022861

FIG. 7C

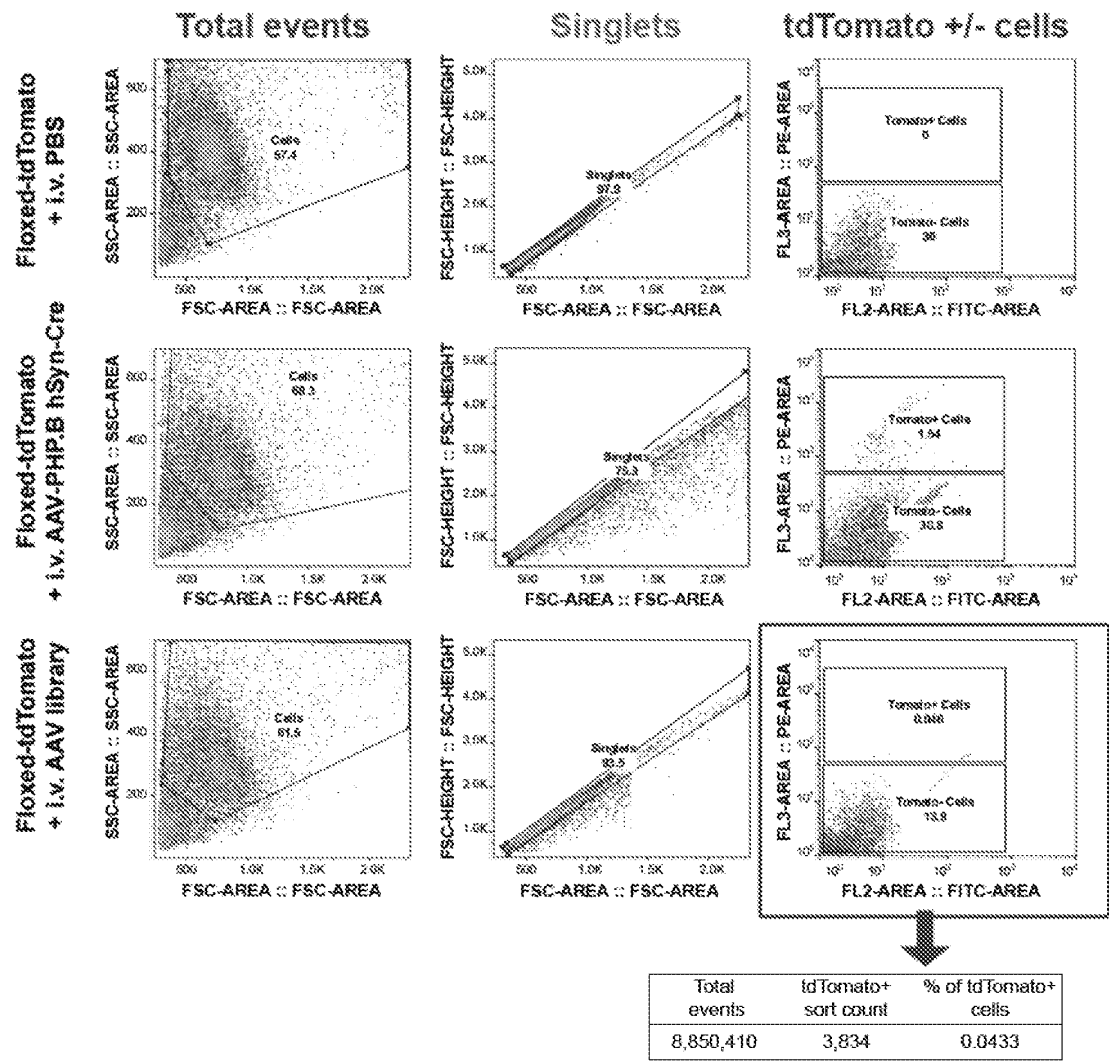


FIG. 8A

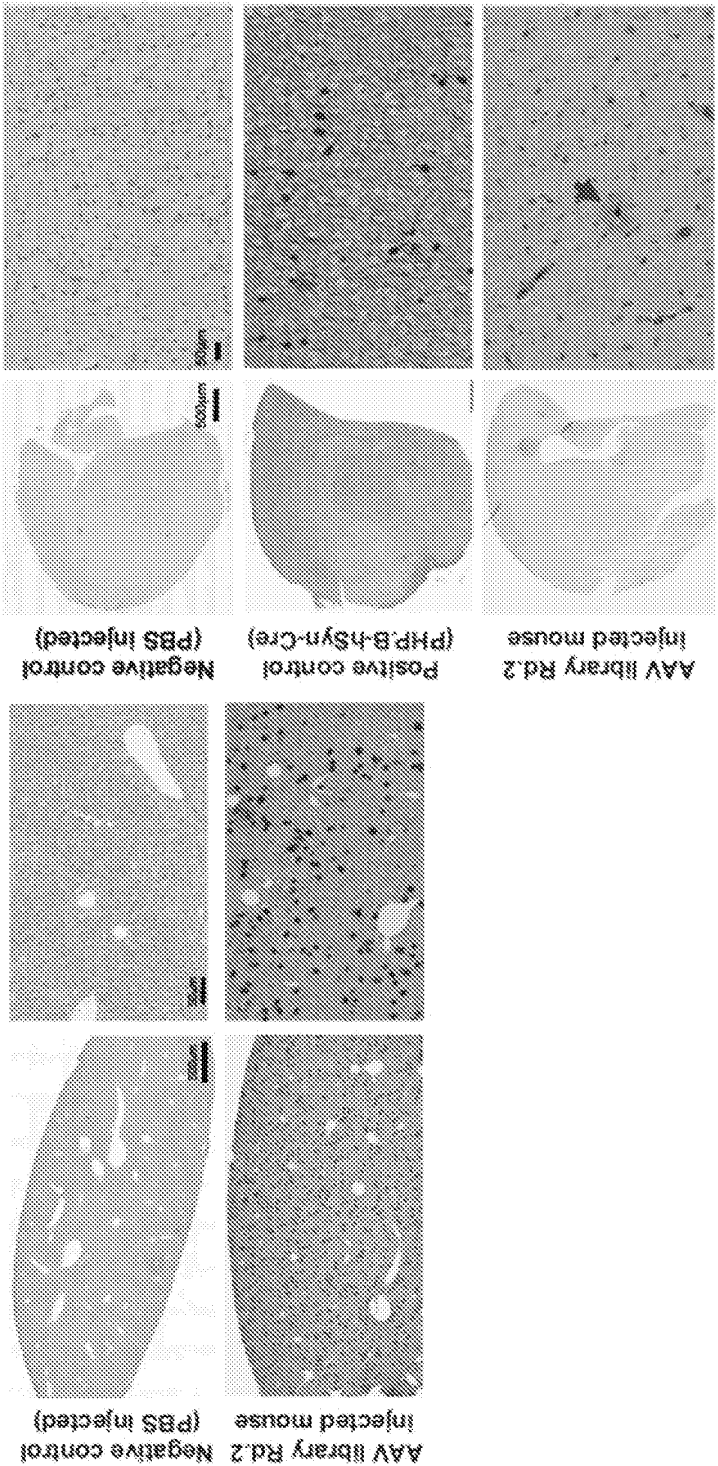


FIG. 8B

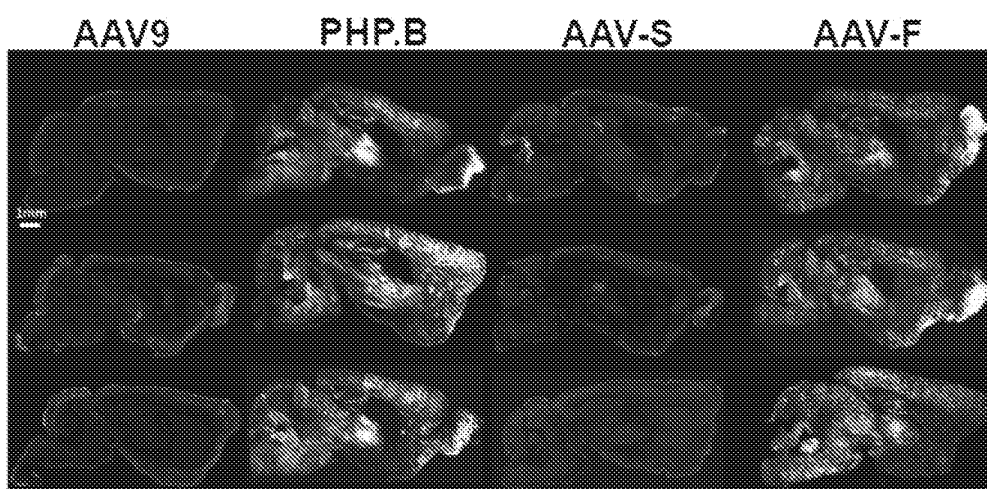


FIG. 9A

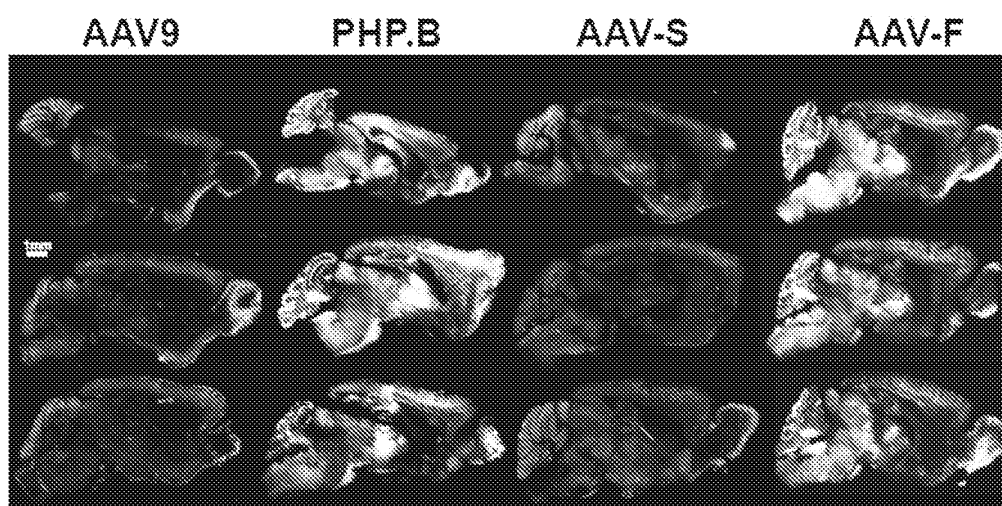


FIG. 9B

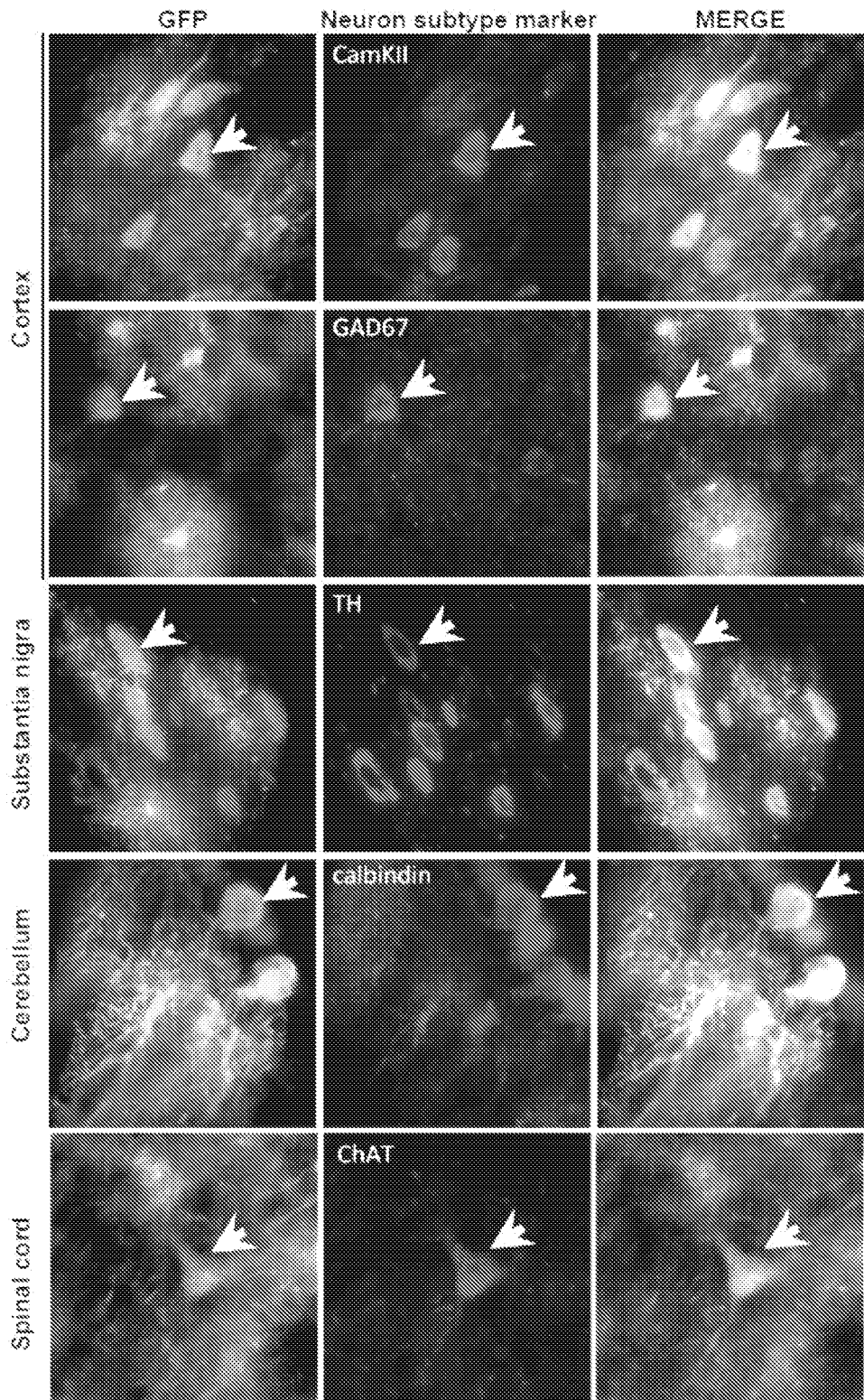


FIG. 10A

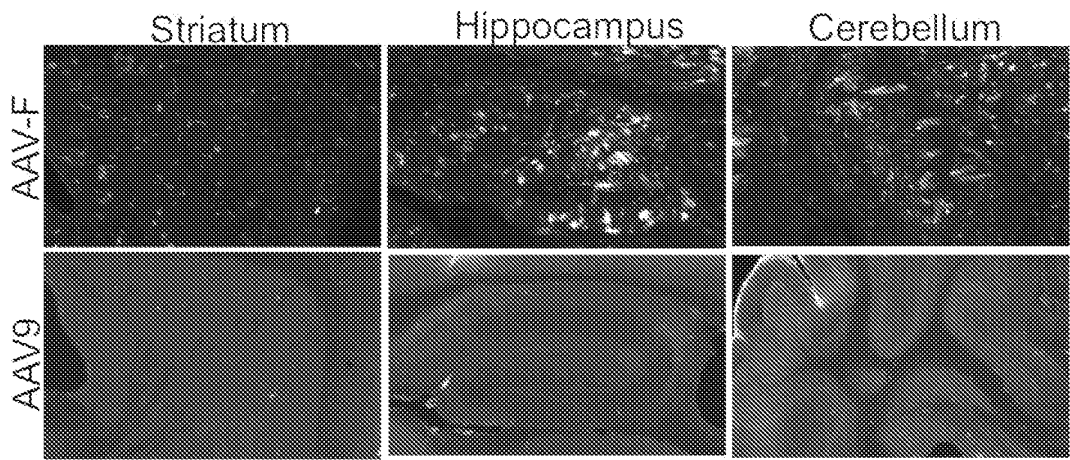


FIG. 10B

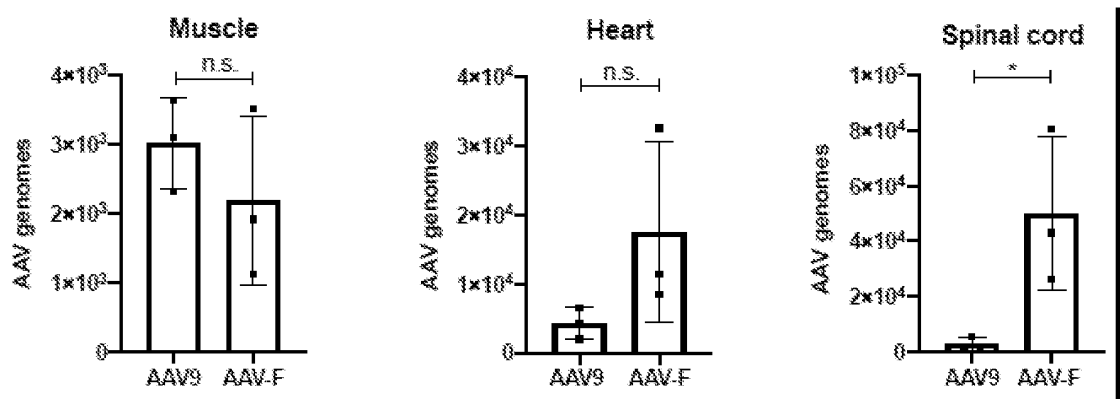
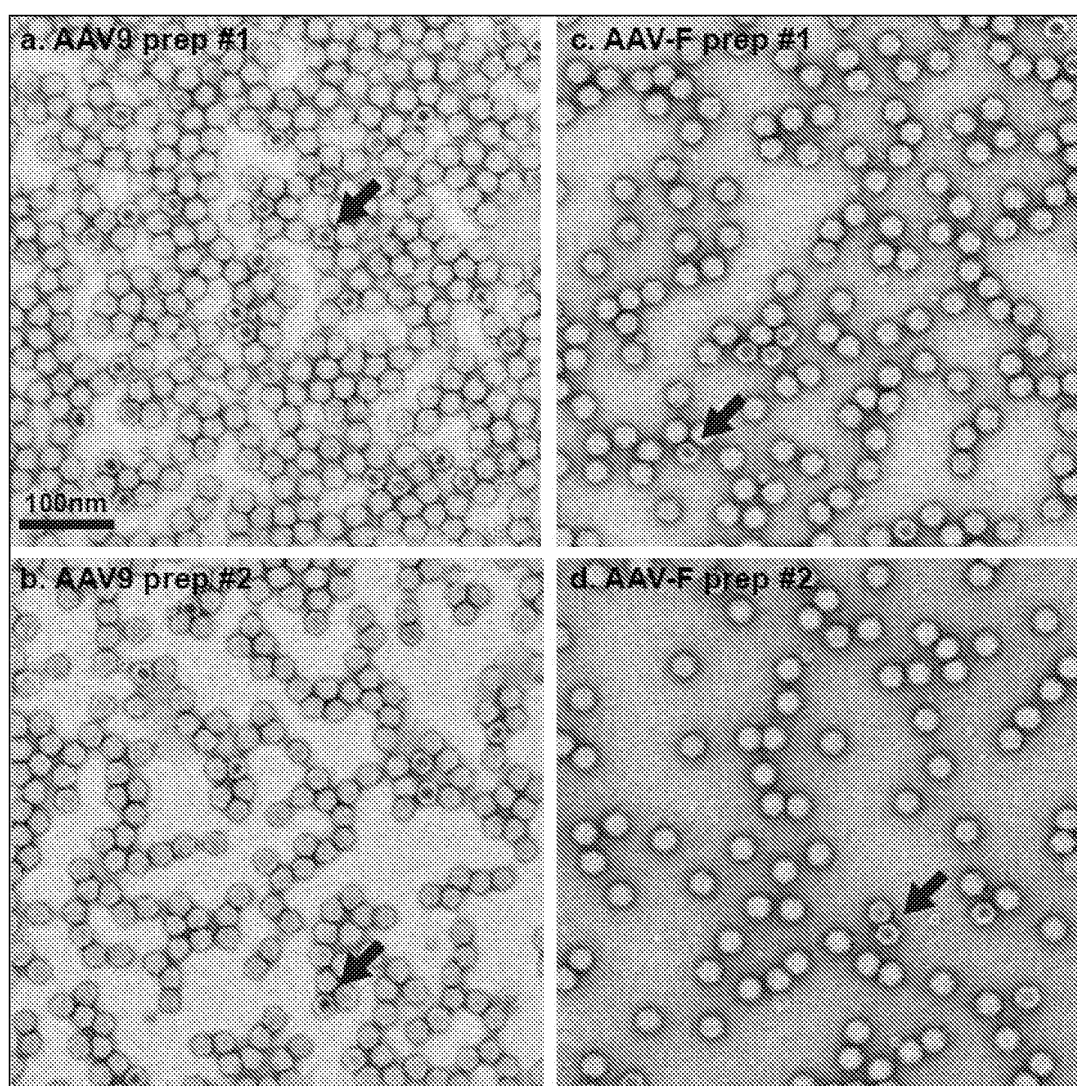


FIG. 11

*FIGs. 12A-D*

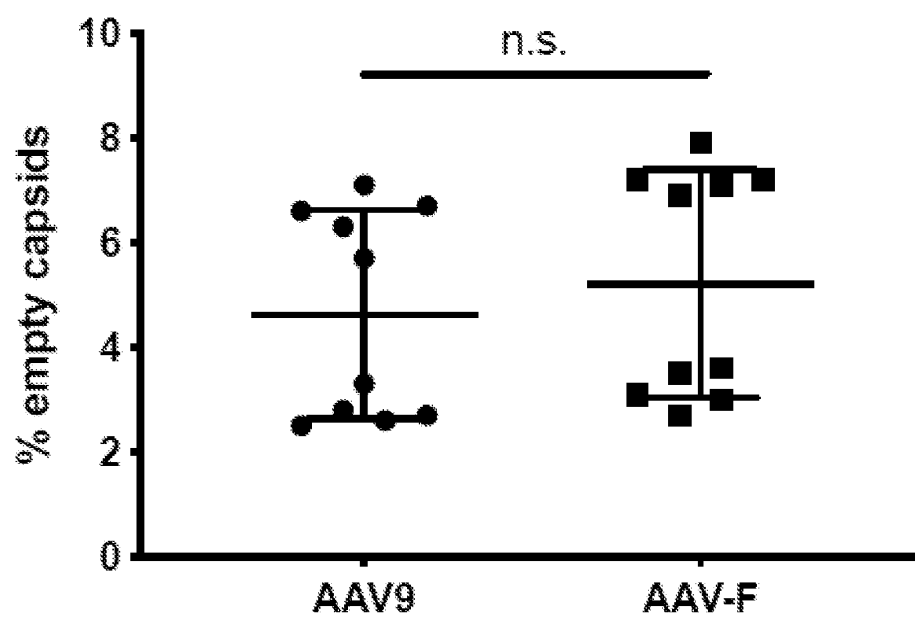


FIG. 12E

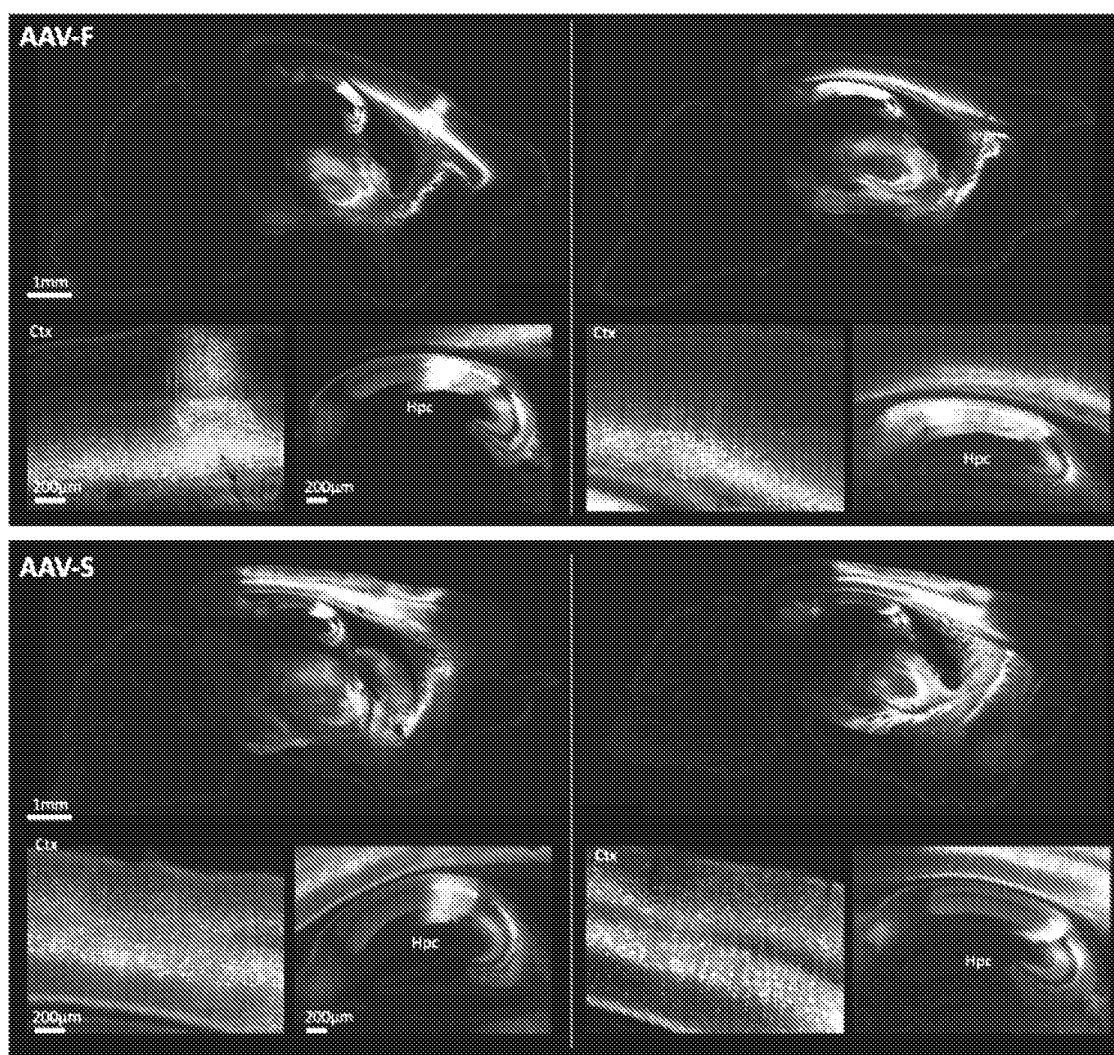


FIG. 13

Brain transduction after intrathecal injection

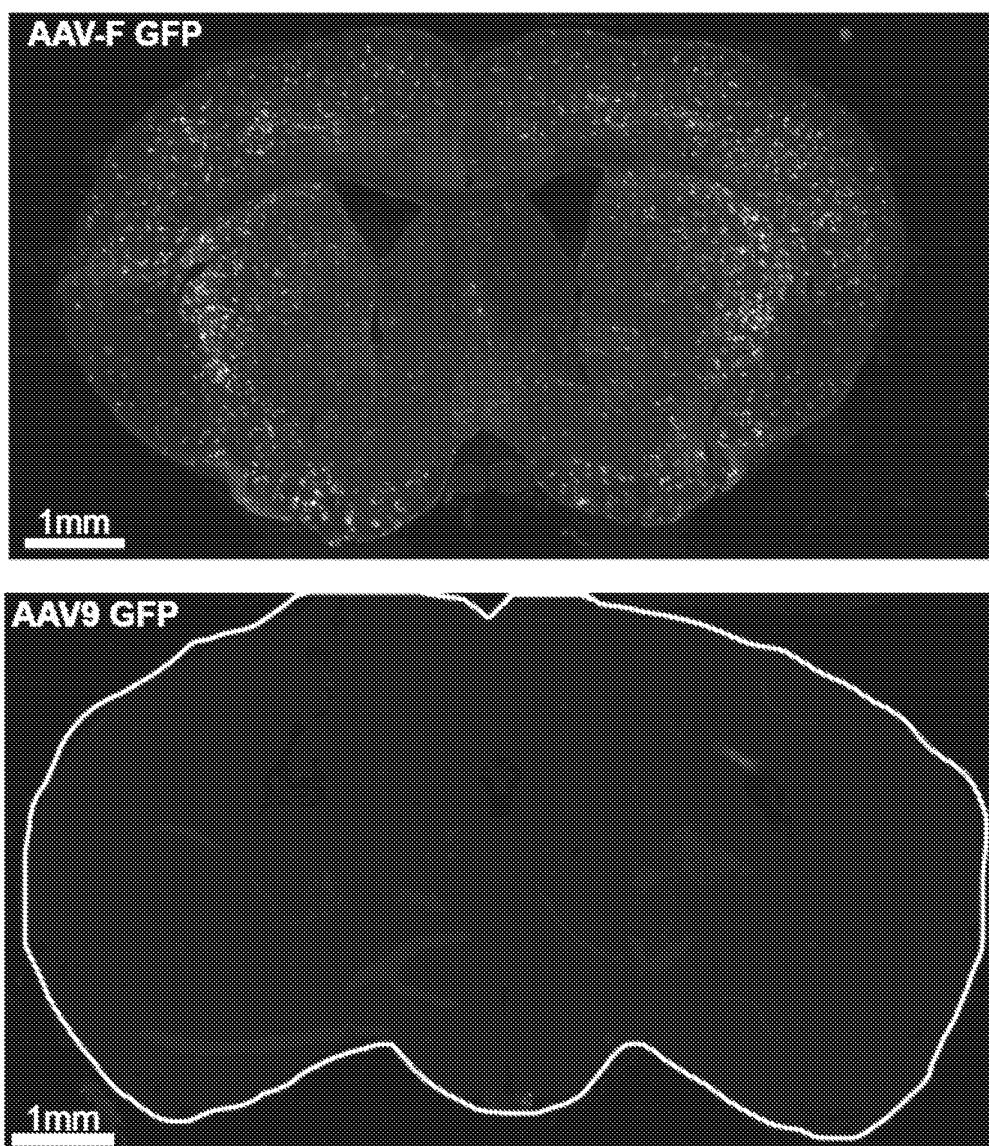
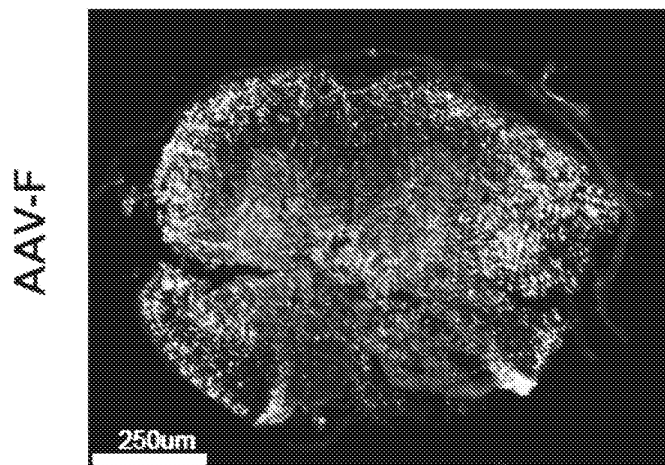
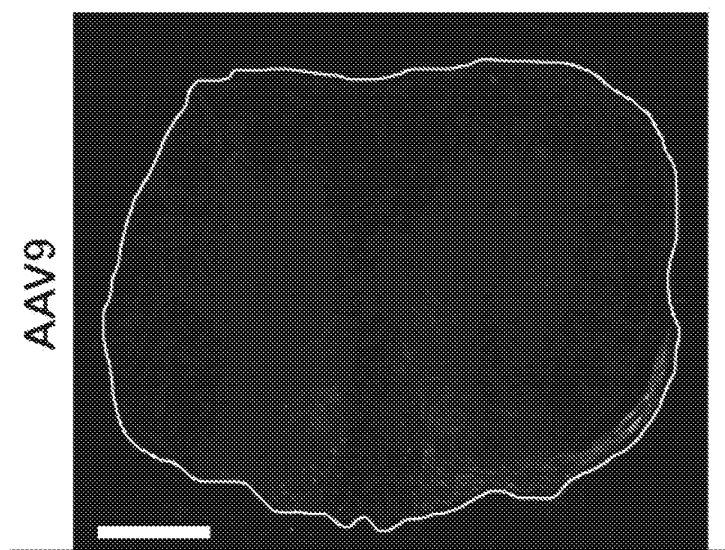


FIG. 14A

Spinal cord transduction after intrathecal injection**Cervical/thoracic****Cervical/thoracic***FIG. 14A, continued*

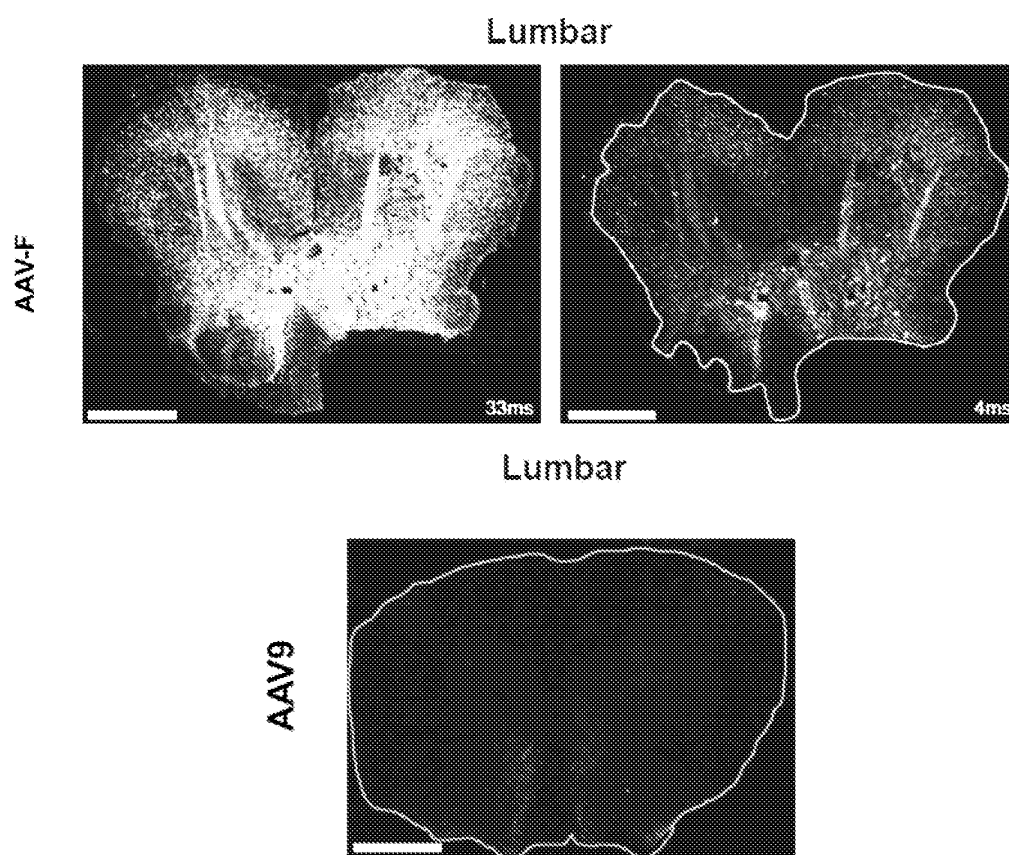
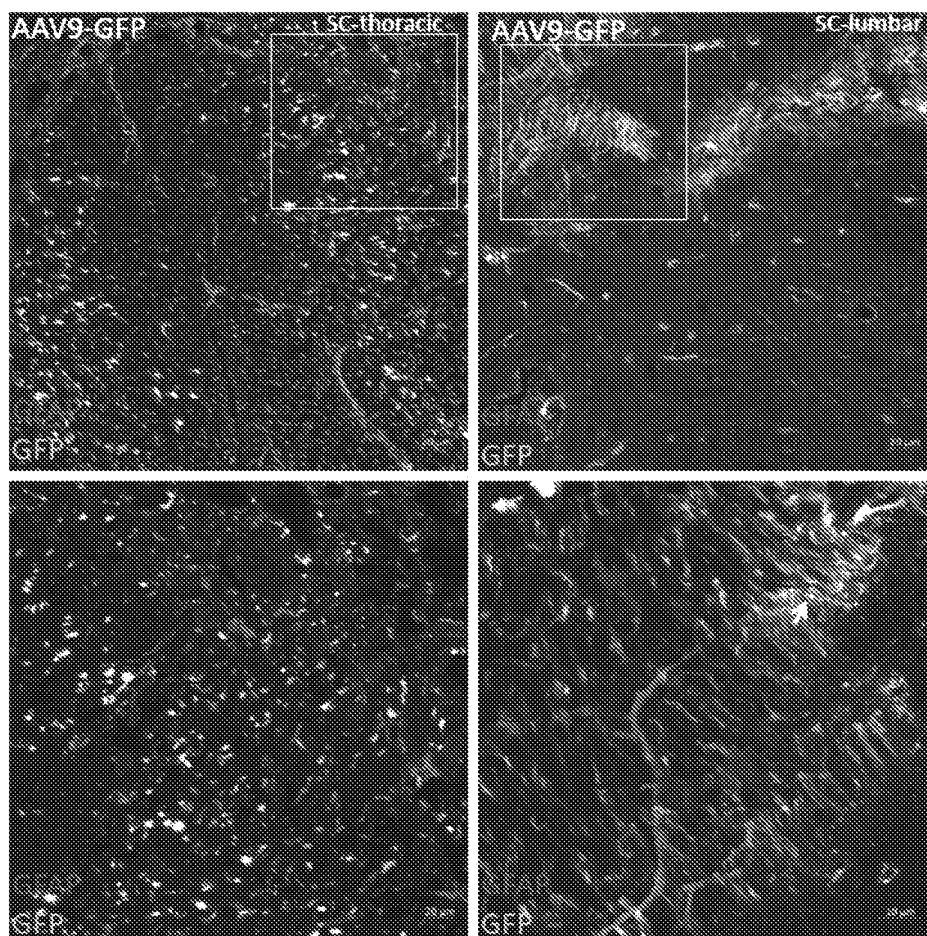


FIG. 14A, continued

*FIG. 14B*

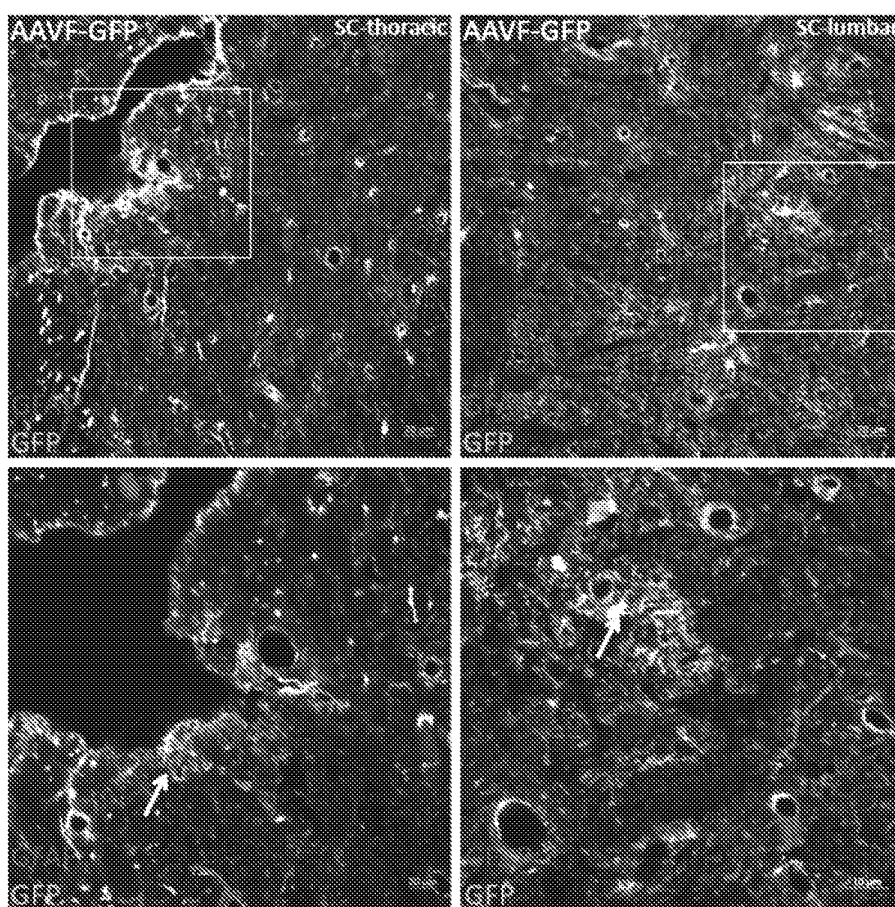


FIG. 14C

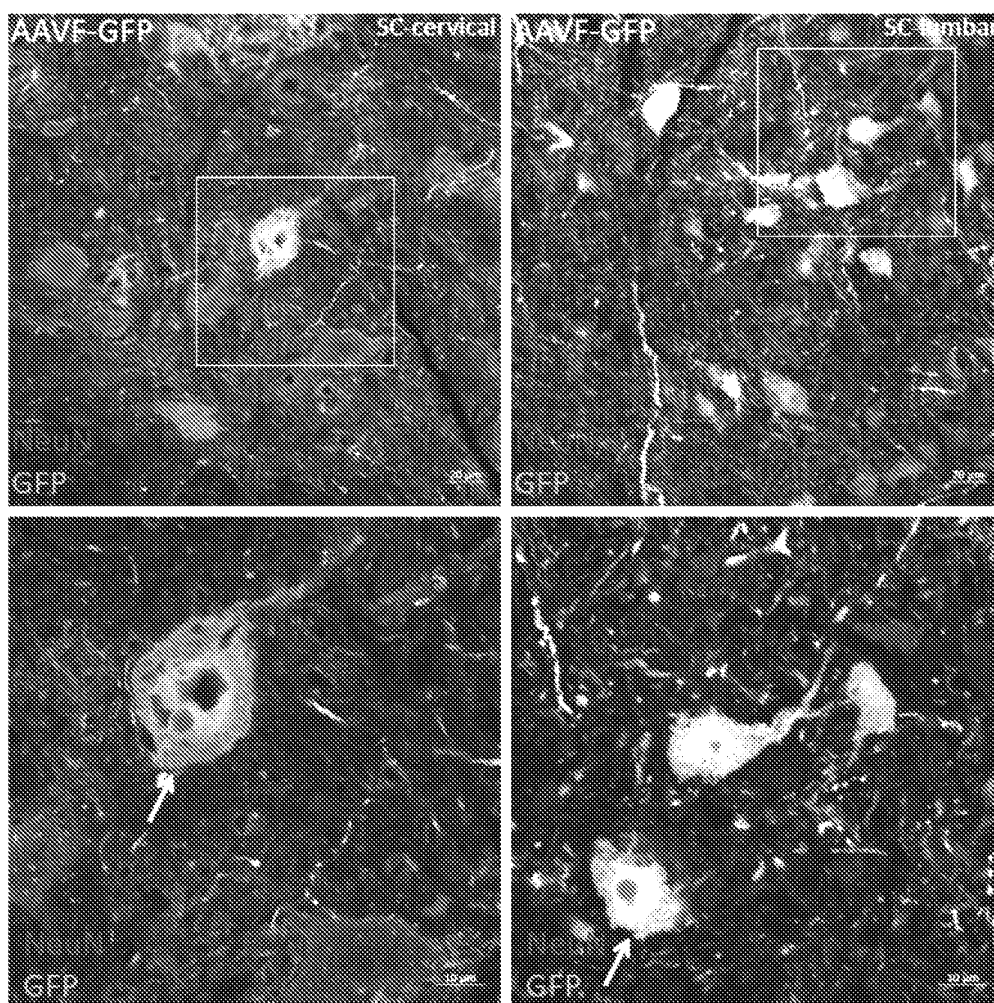


FIG. 14D

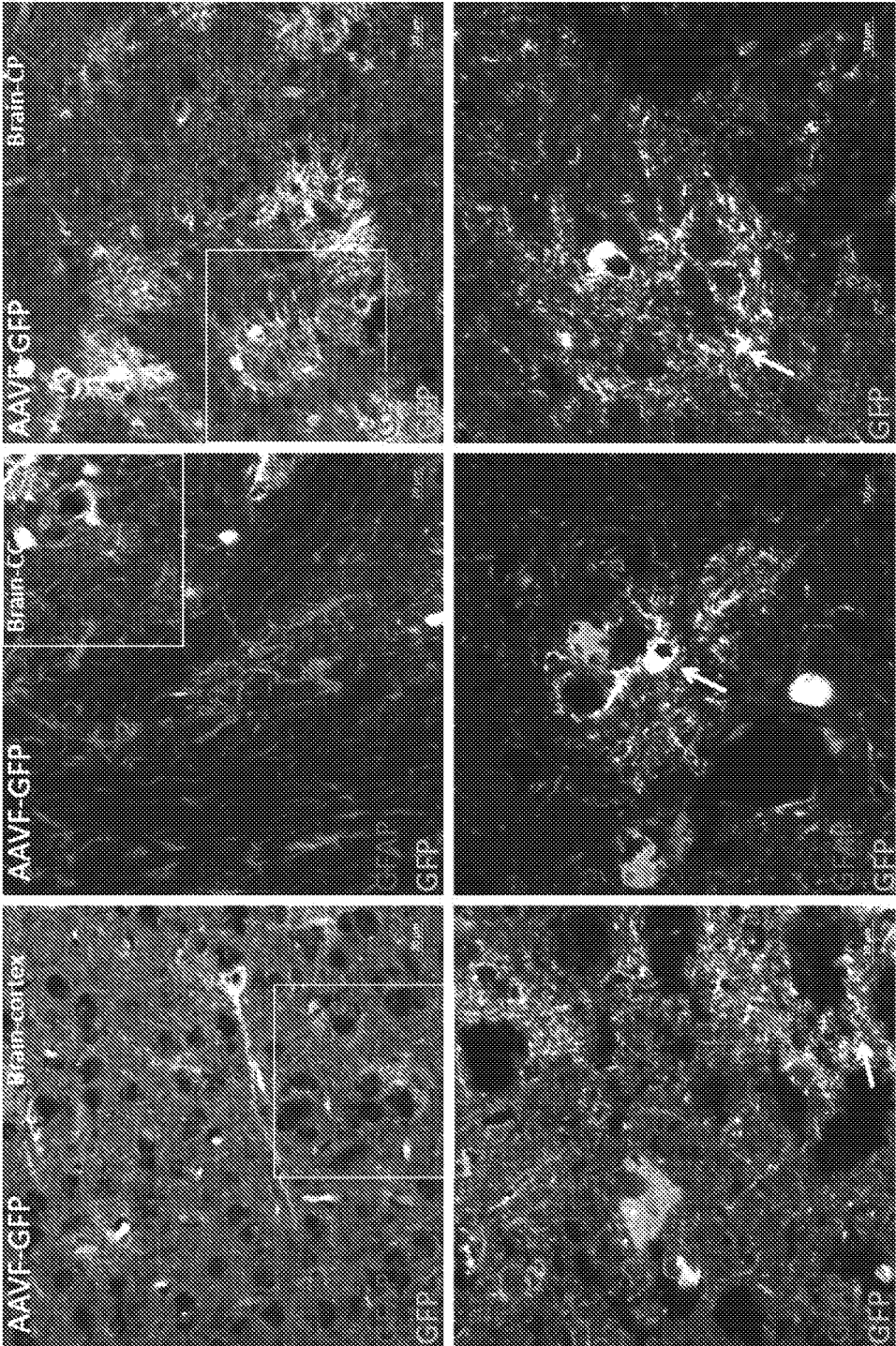


FIG. 14E

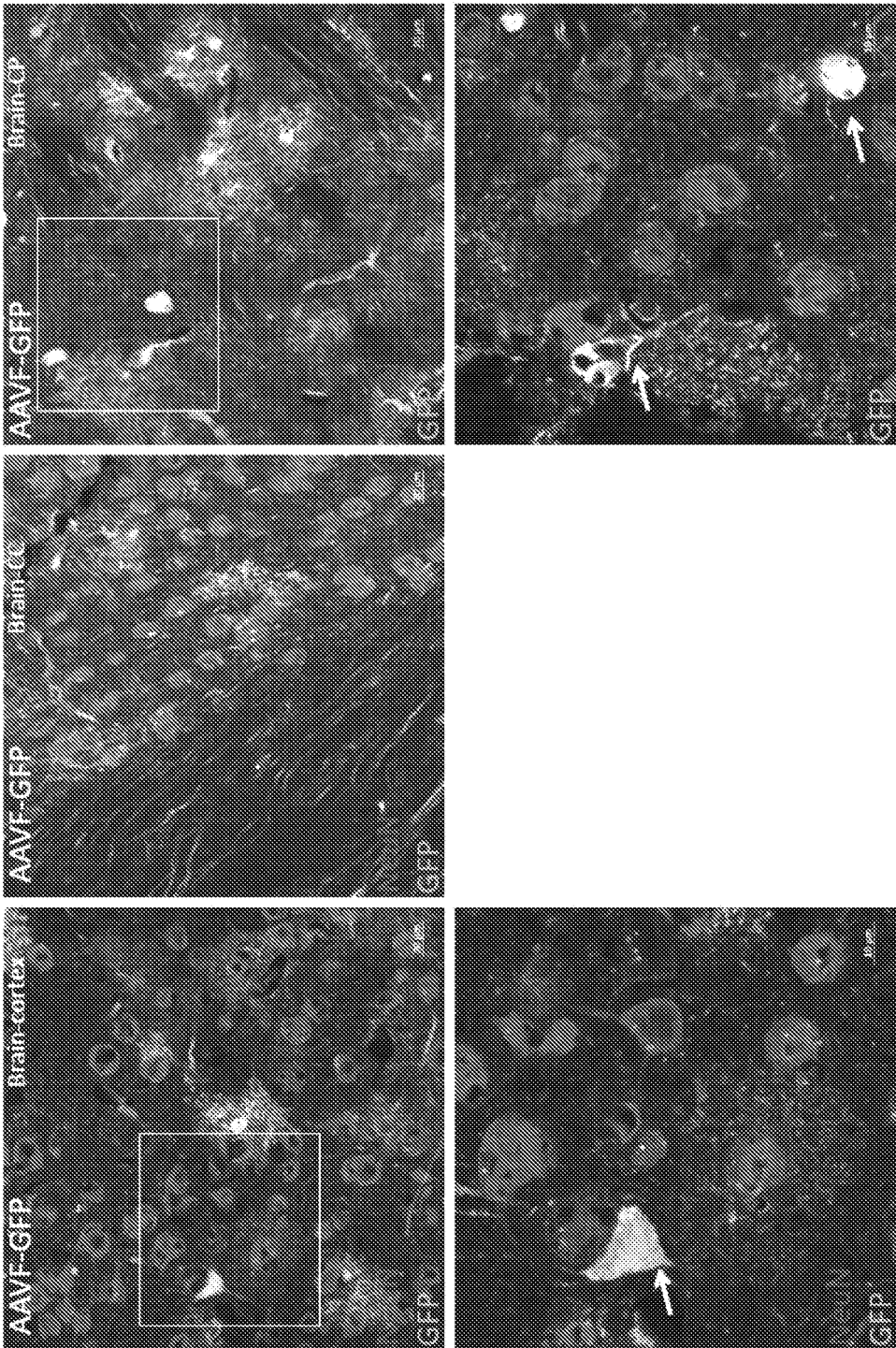
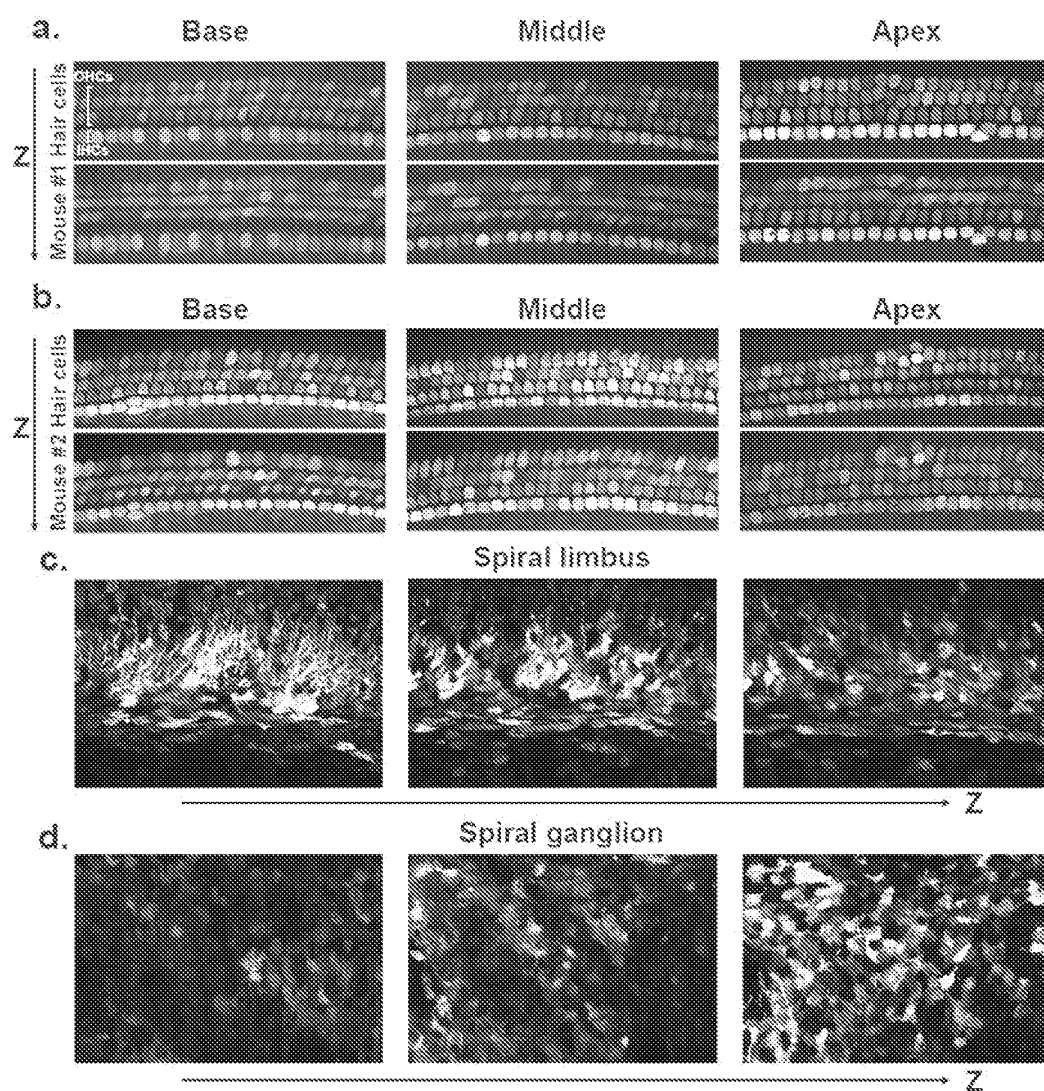
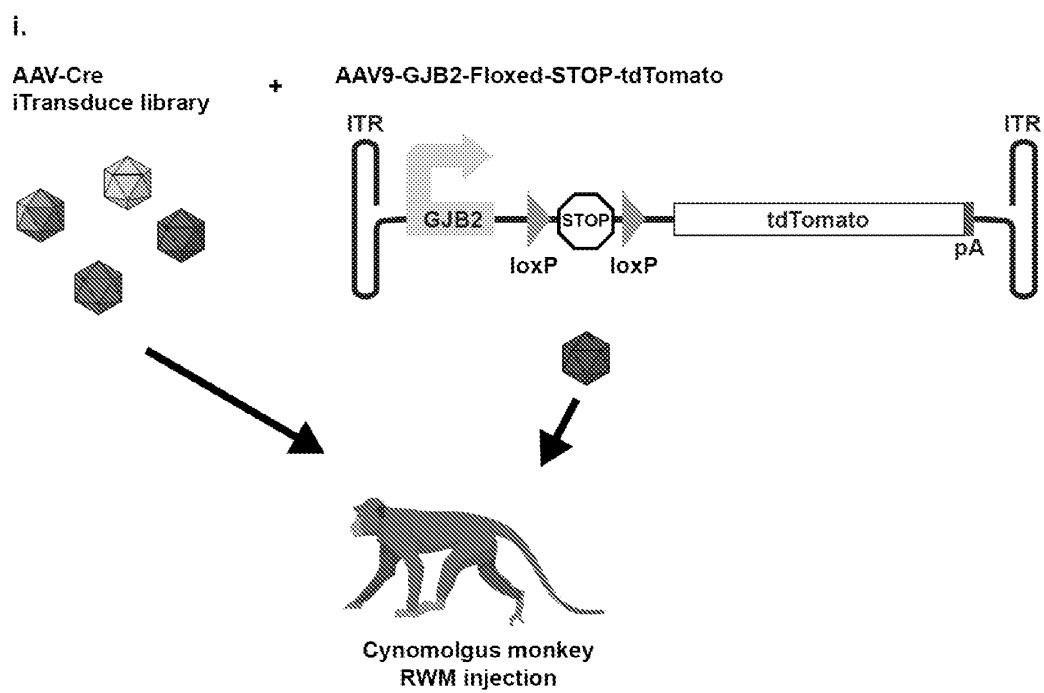


FIG. 14F





ii.

Cochlear area of interest

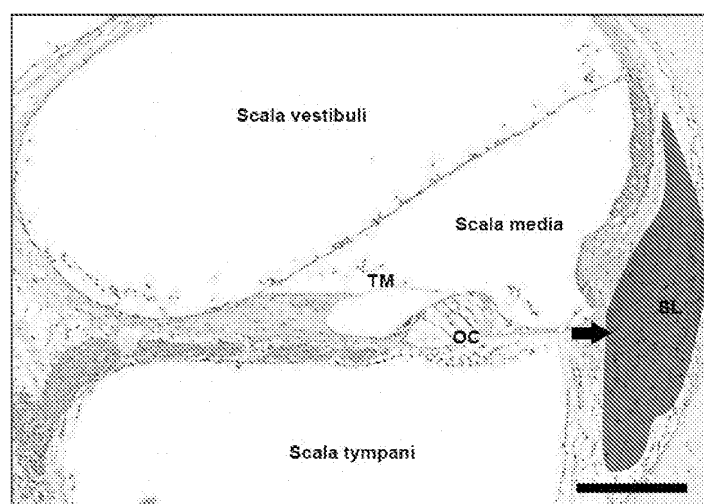


FIG. 16A

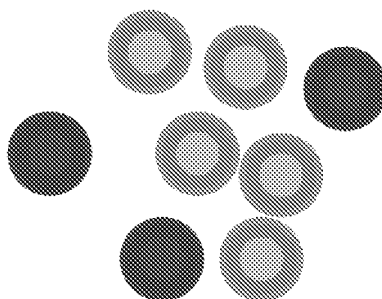
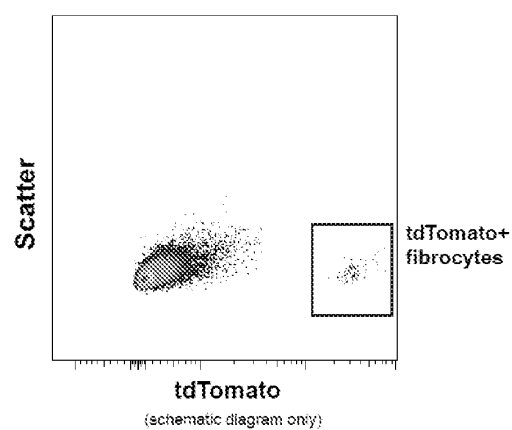
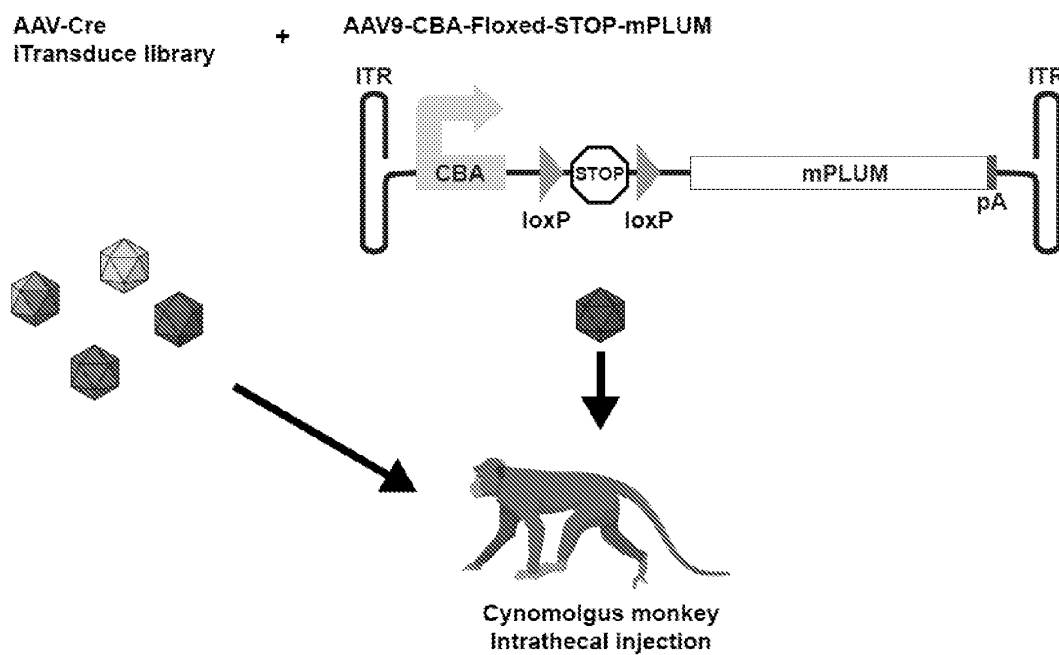
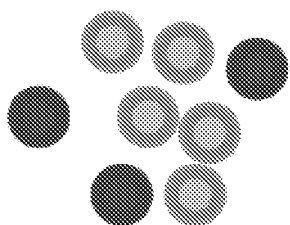
iii. Dissociate cochlea**iv. Flow sort tdTomato+ fibrocytes****v. NGS candidate peptides**

FIG. 16A, continued

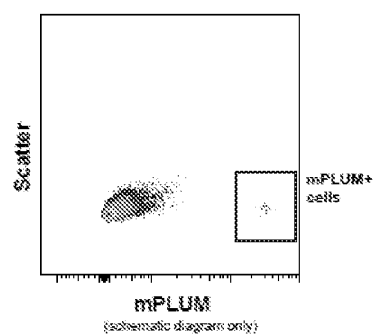
i.



ii. Dissociate spinal cord



iii. Flow sort mPLUM+ cells



iv. NGS candidate peptides



FIG. 16B