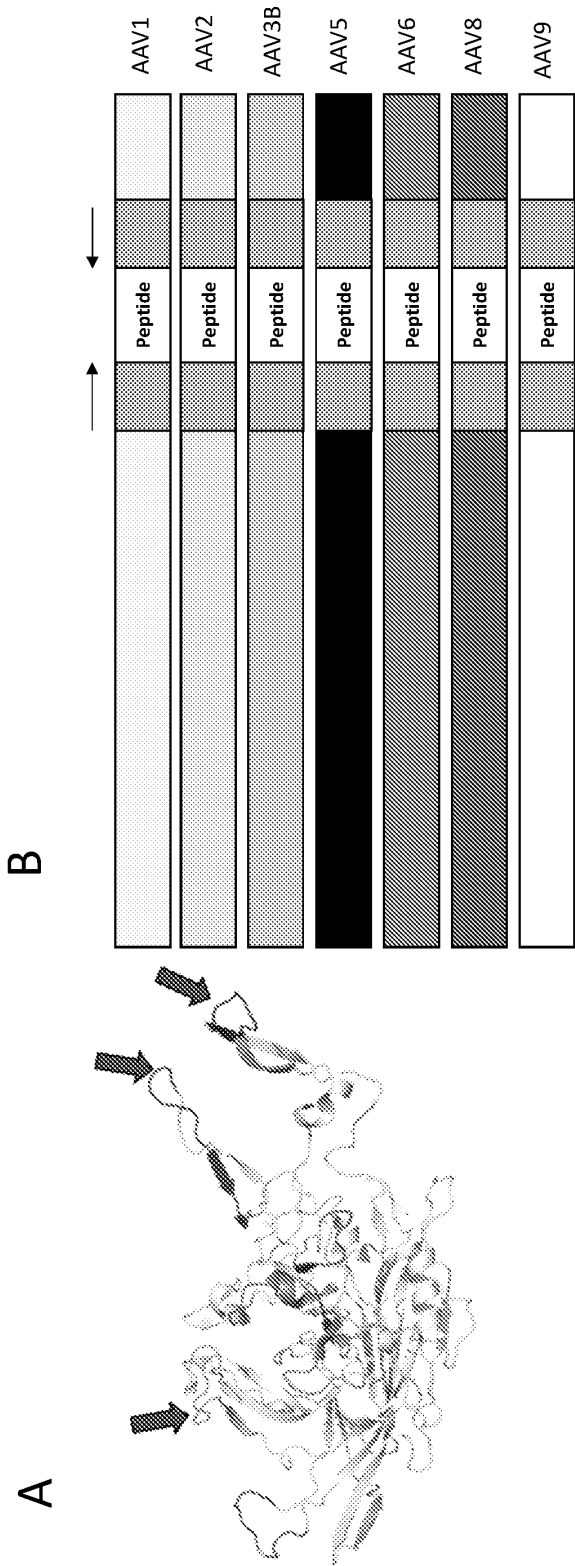


FIG. 1



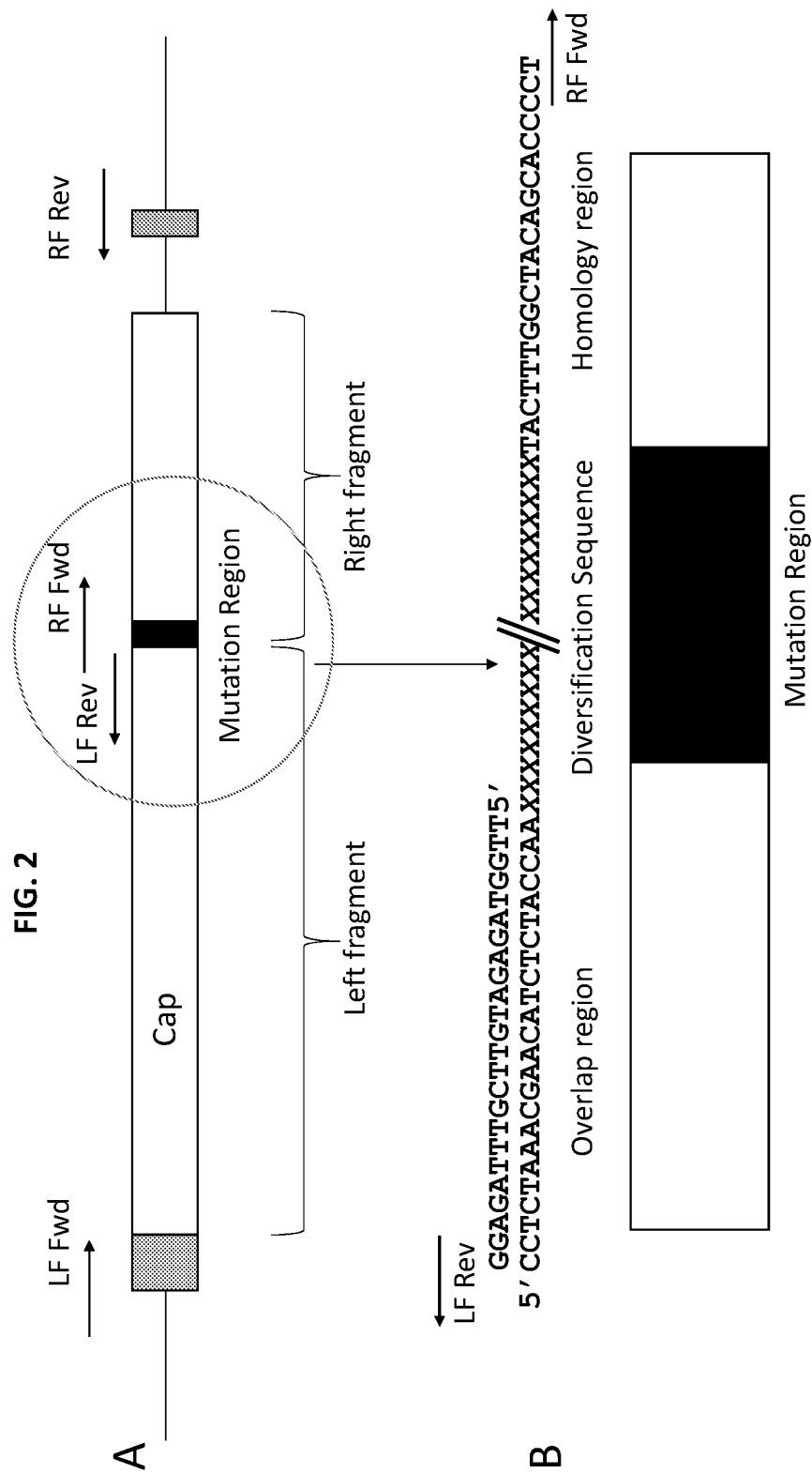


FIG. 3A

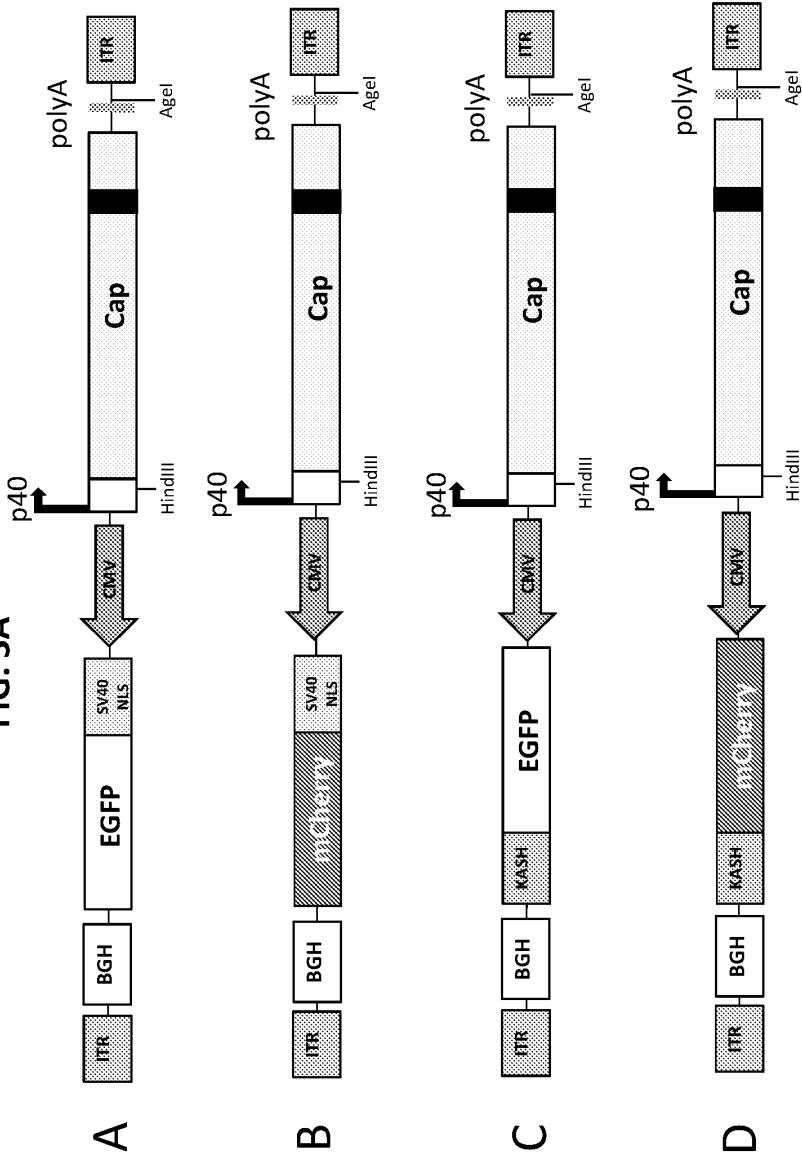


FIG. 3B

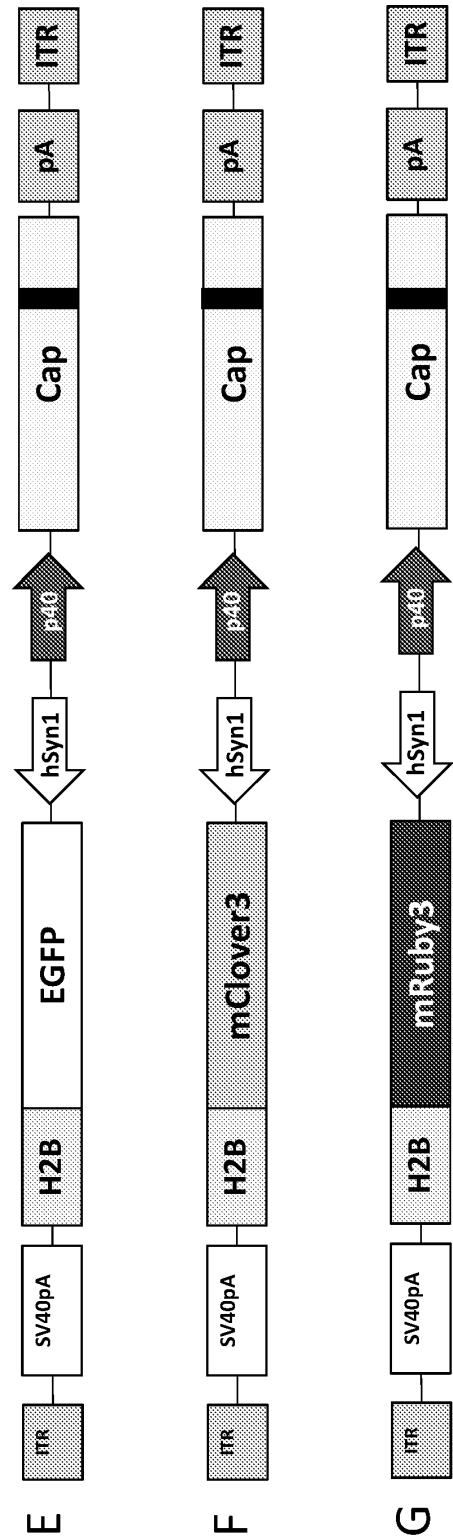


FIG. 4A

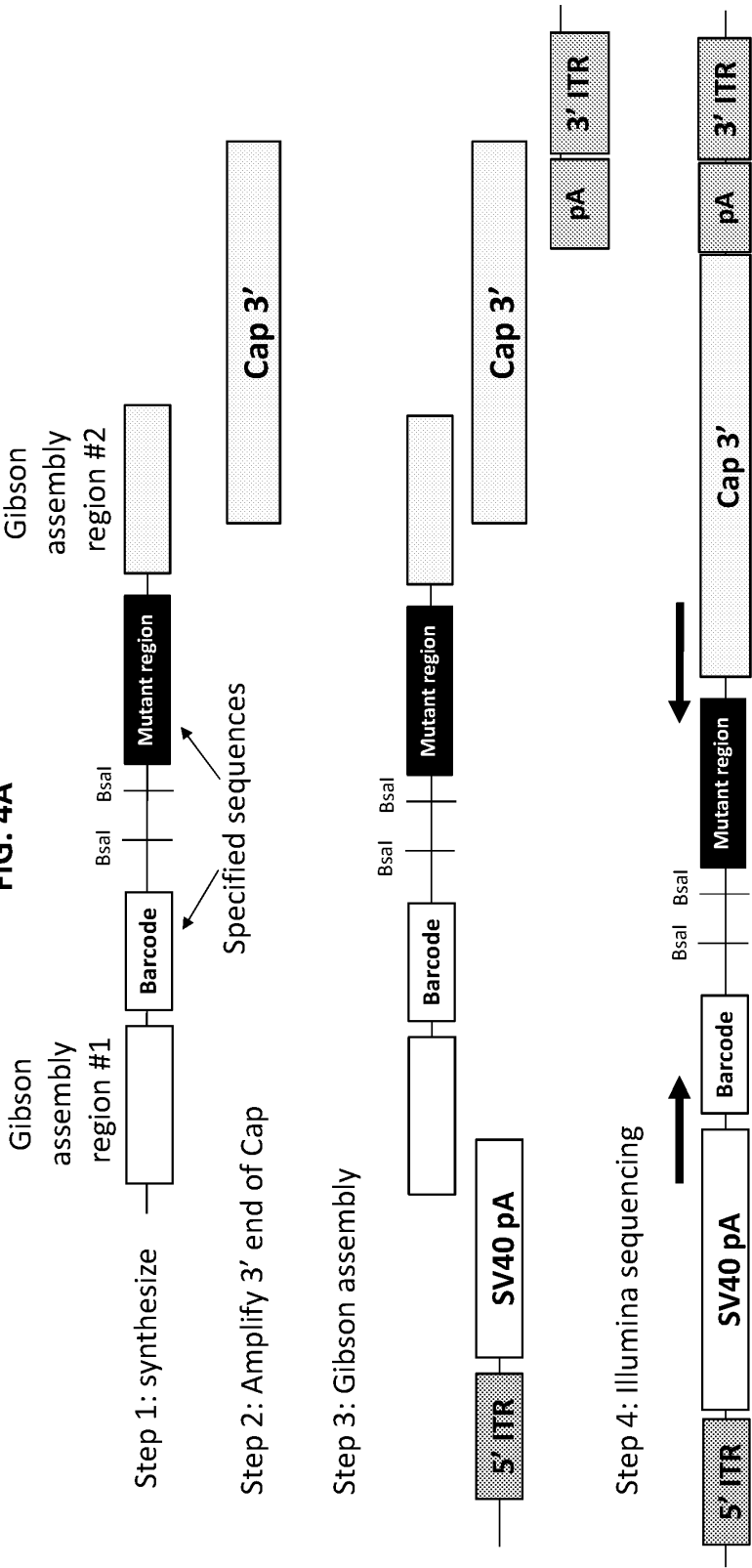


FIG. 4B

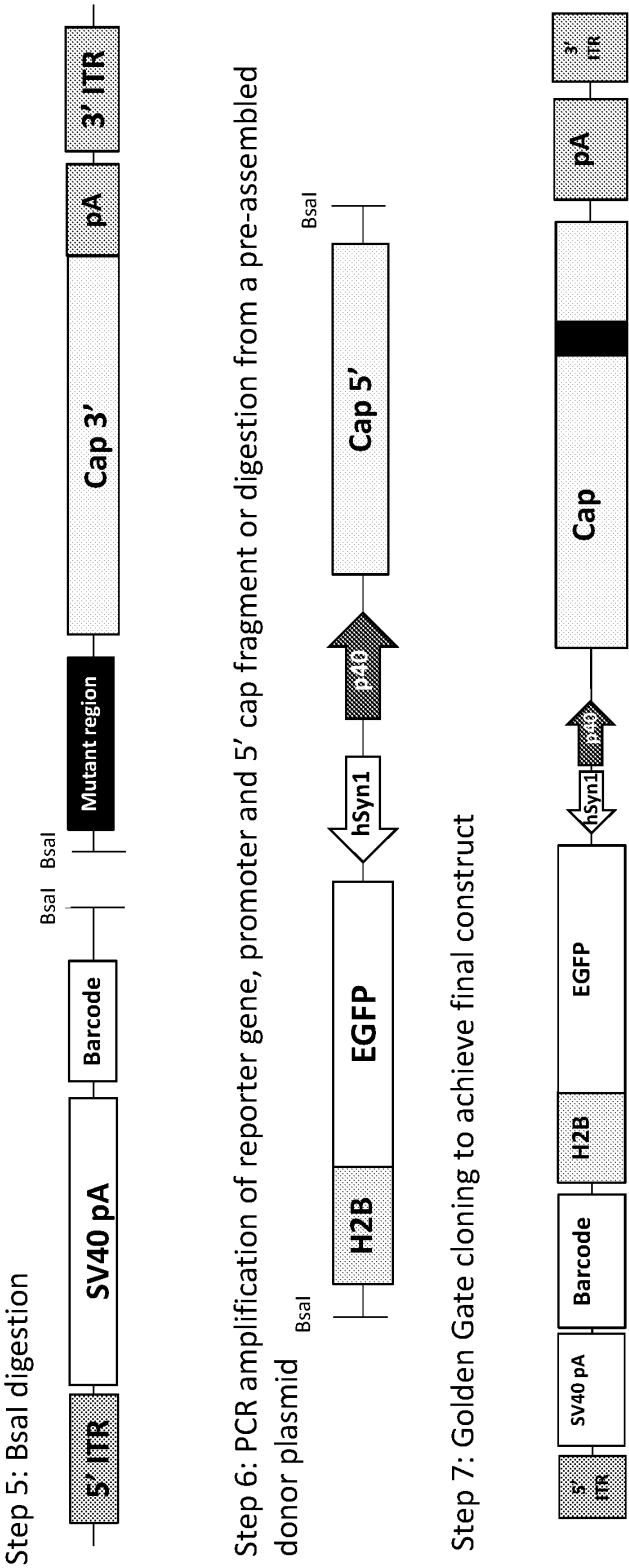


FIG. 4C

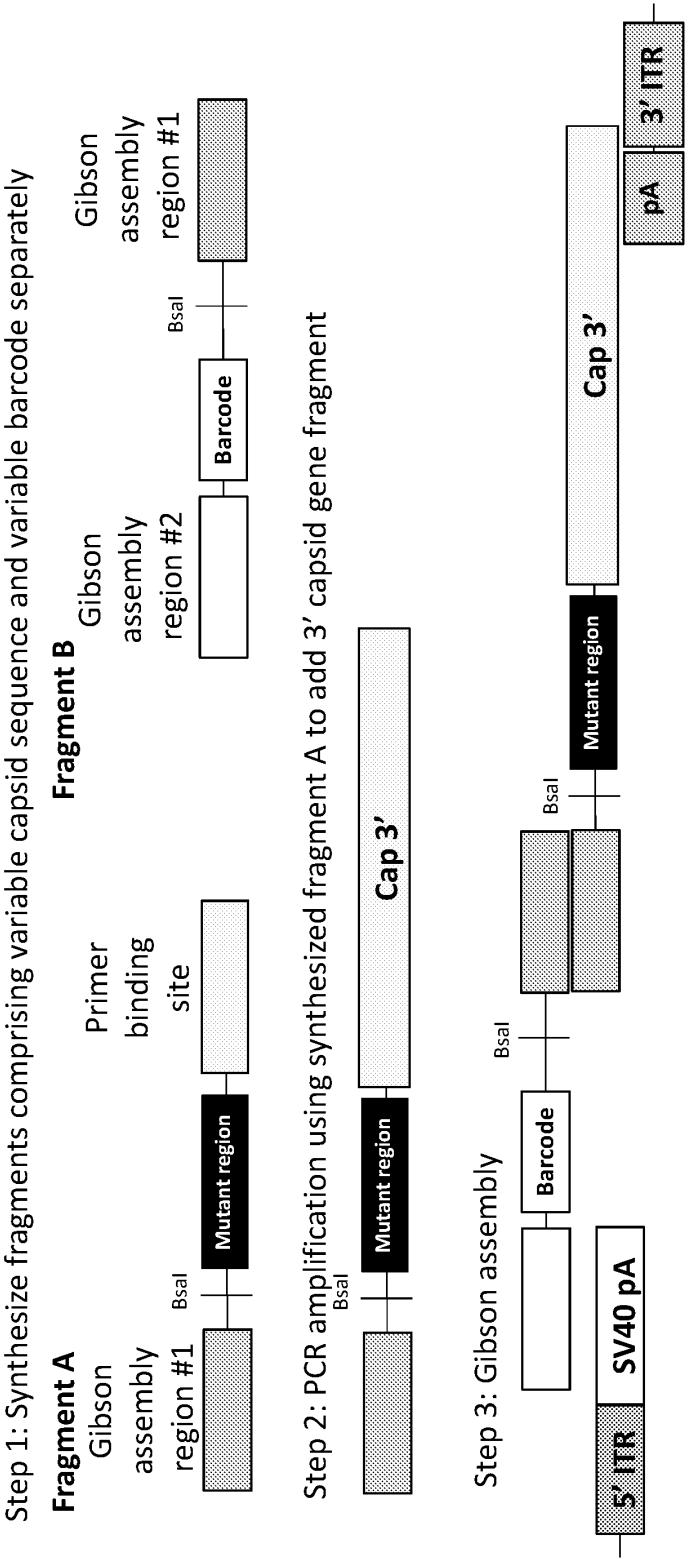


FIG. 4D

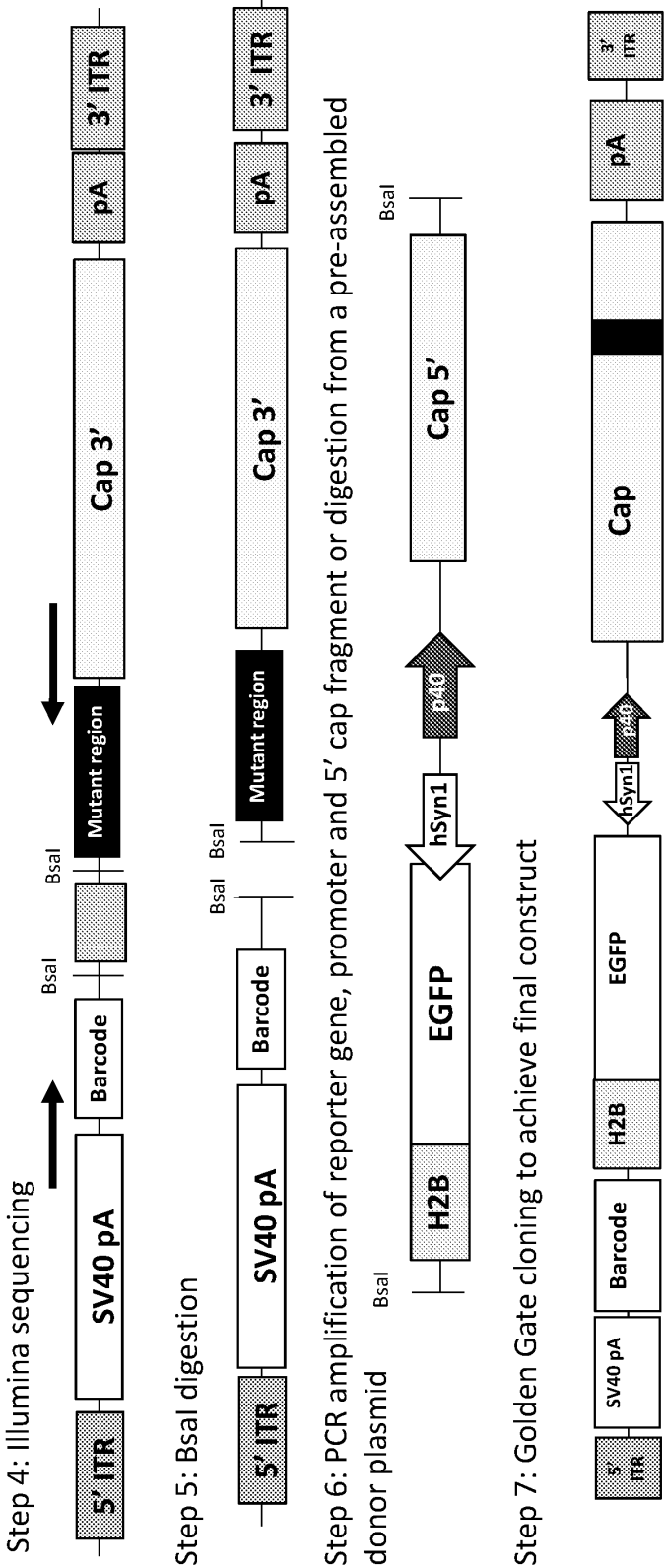
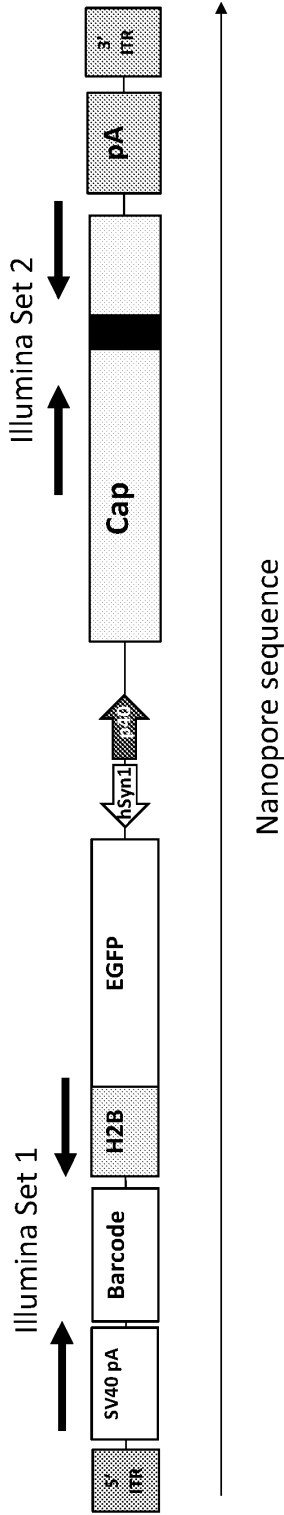
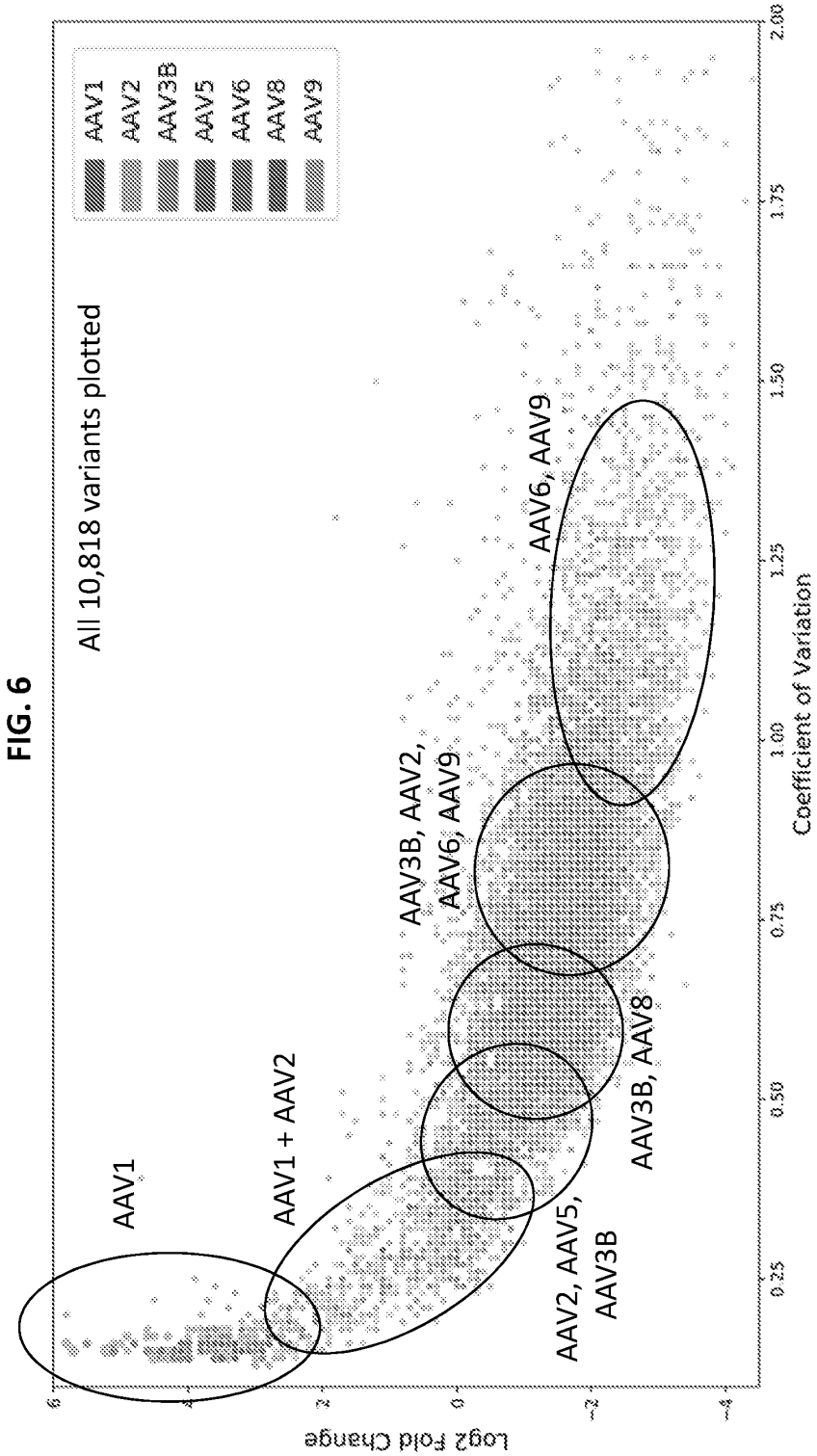


FIG. 5





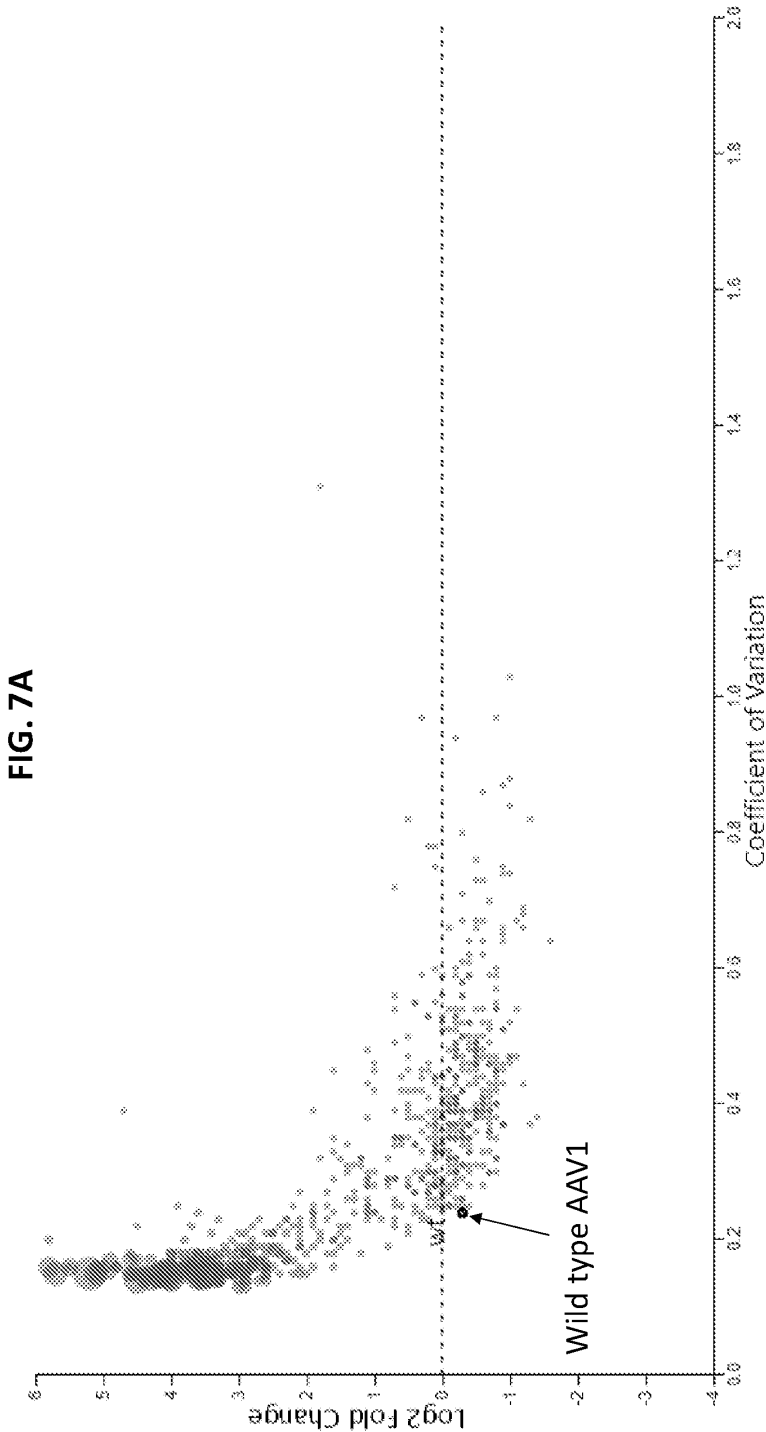
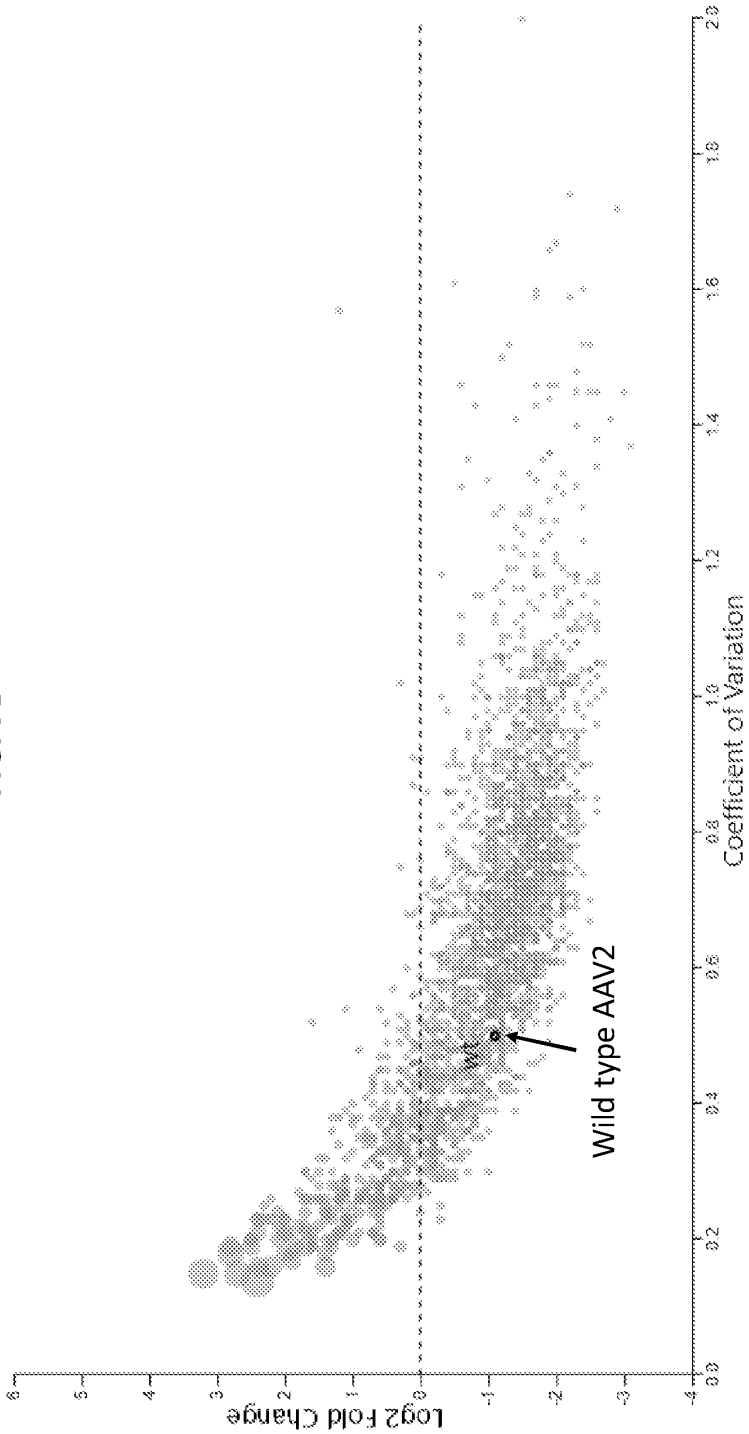


FIG. 7B



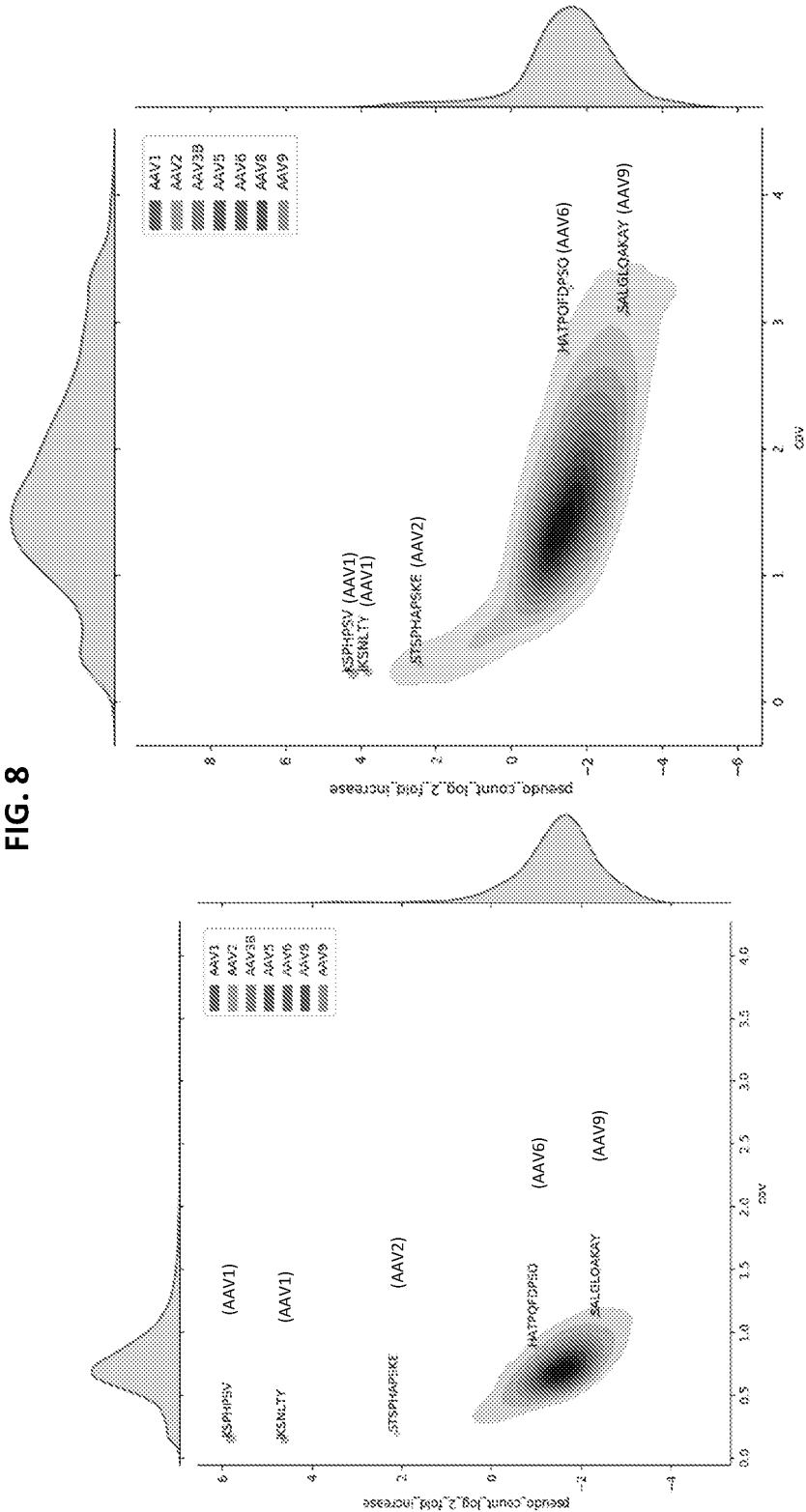


FIG. 9

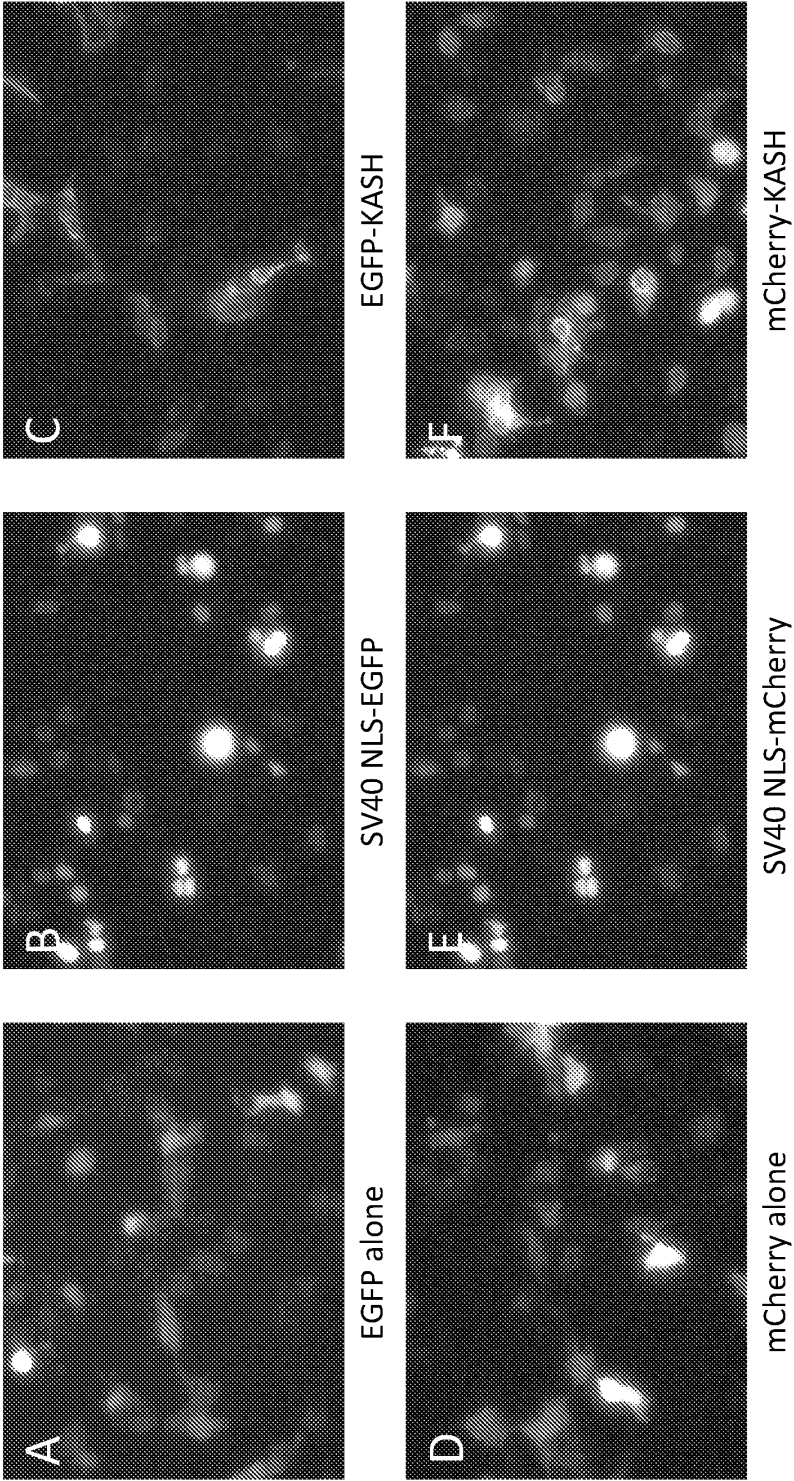


FIG. 10A

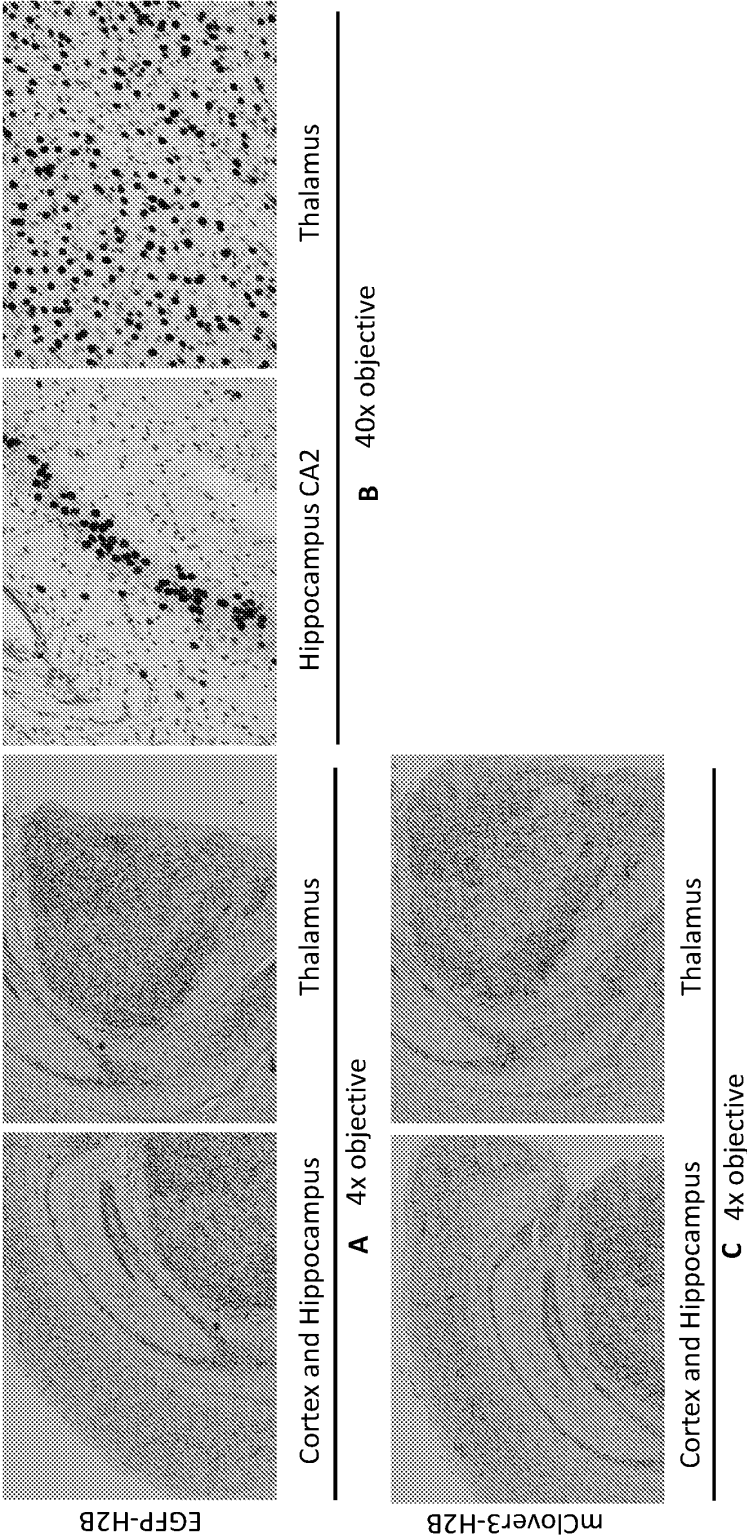


FIG. 10B

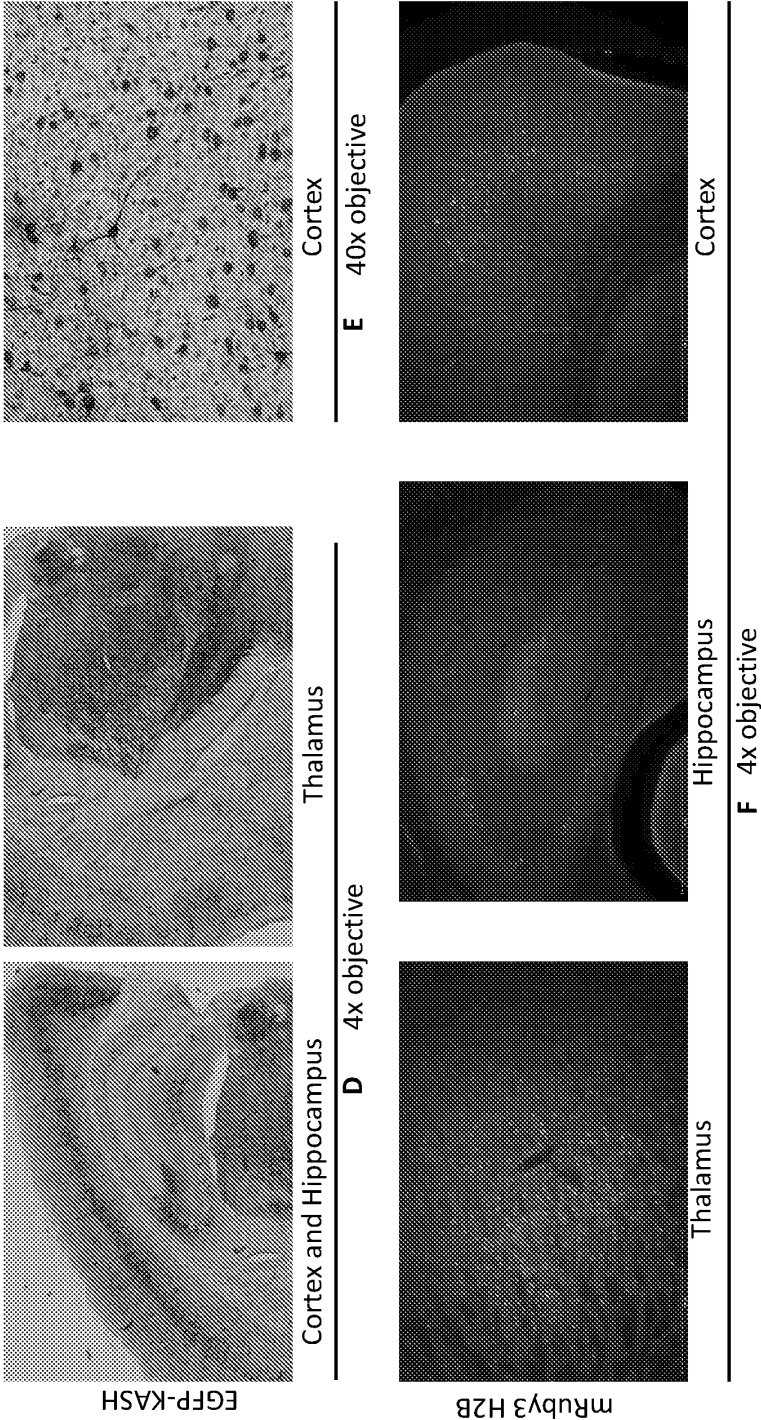


FIG. 11
EGFP-H2B positive nuclei

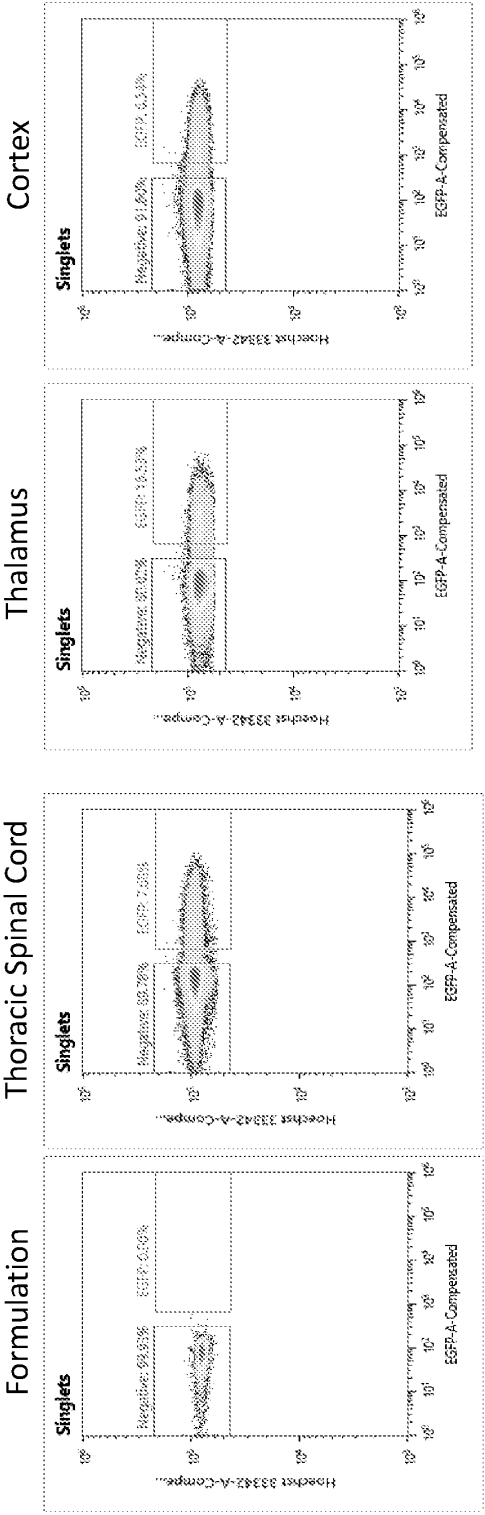
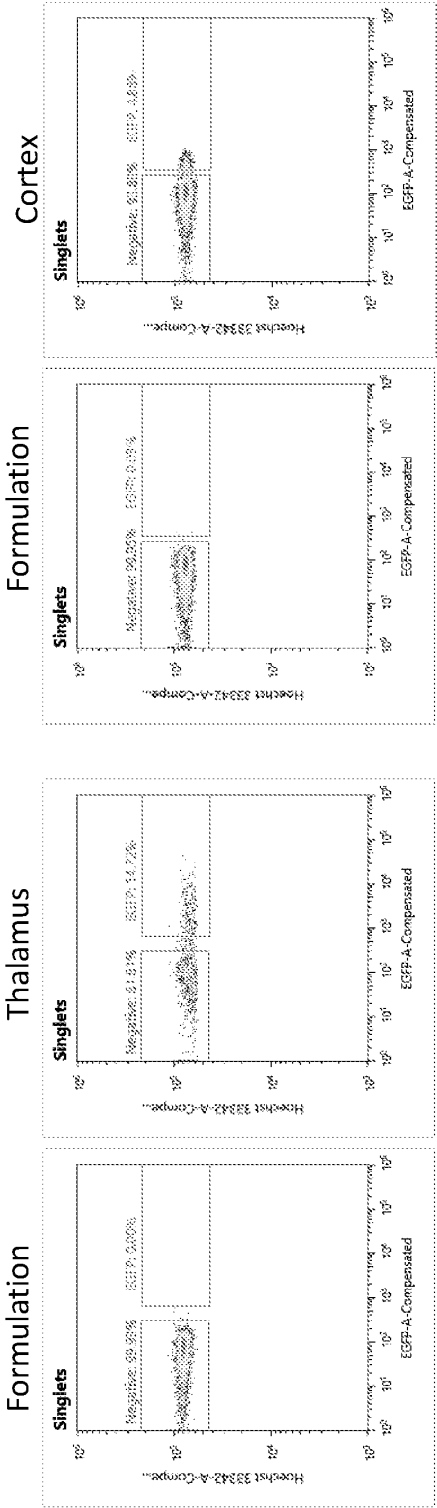


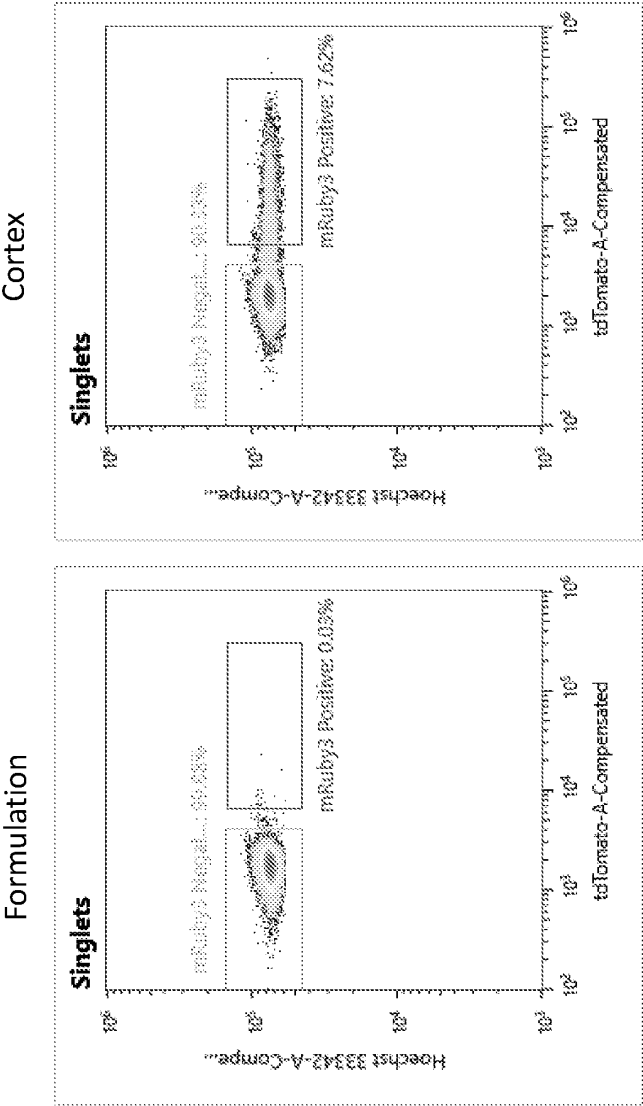
FIG. 12



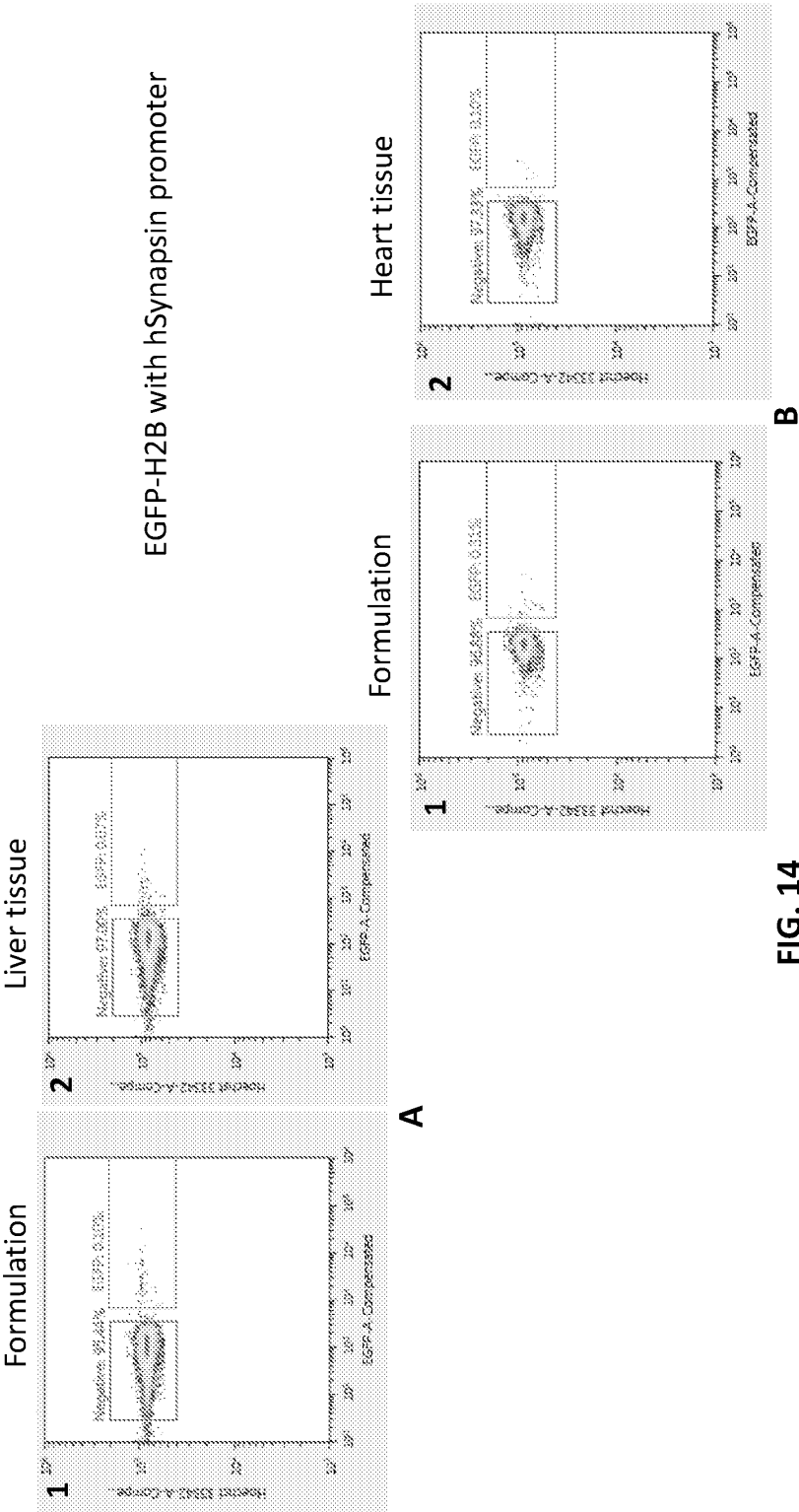
mClover3 positive nuclei

EGFP KASH positive nuclei

FIG. 13



EGFP-H2B with hSynapsin promoter



EGFP-H2B with TTR promoter in HepG2 cells

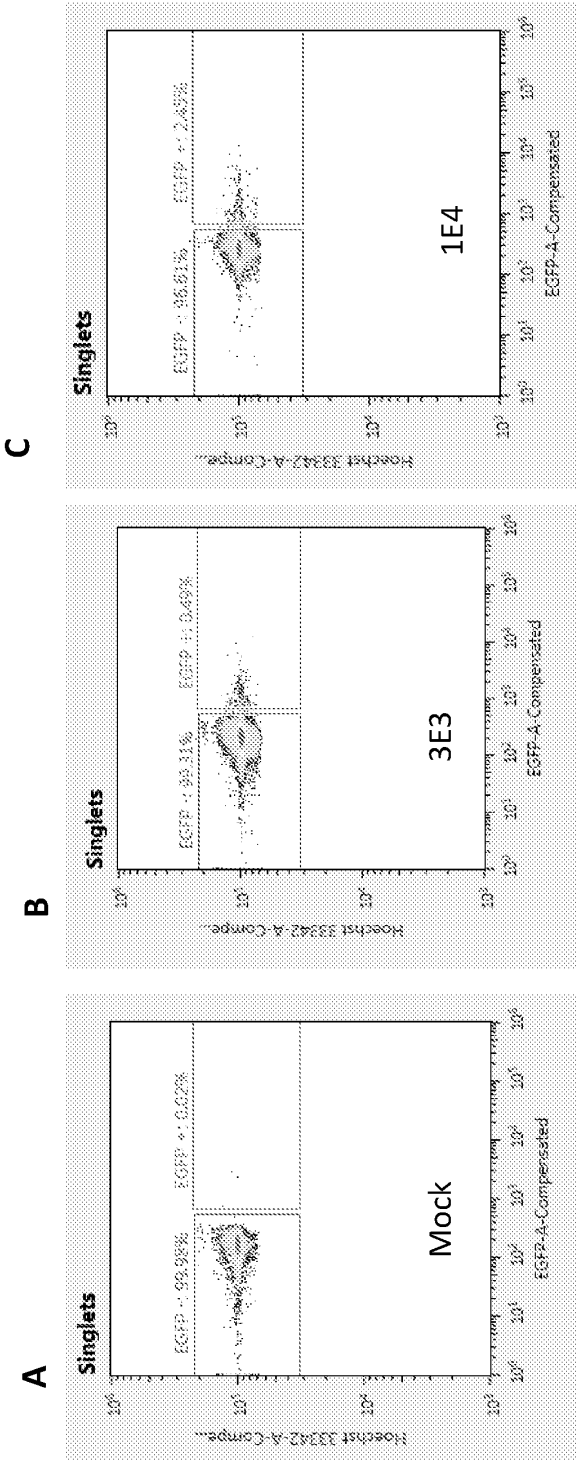
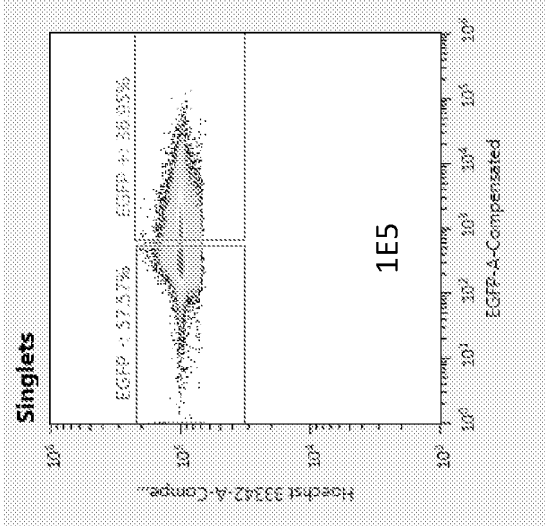


FIG. 15A

EGFP-H2B with TTR promoter in HepG2 cells

E



D

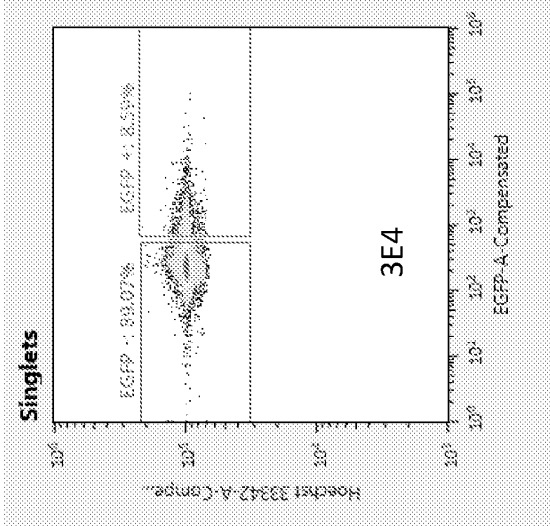
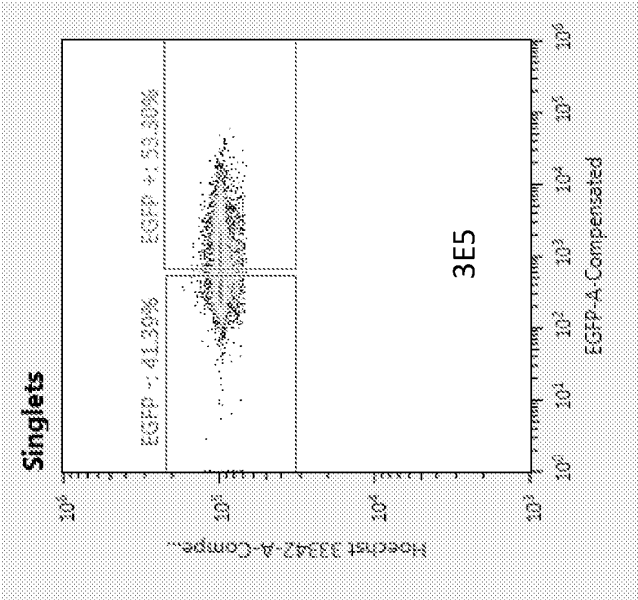


FIG. 15B

EGFP-H2B with TTR promoter in HepG2 cells

F



G

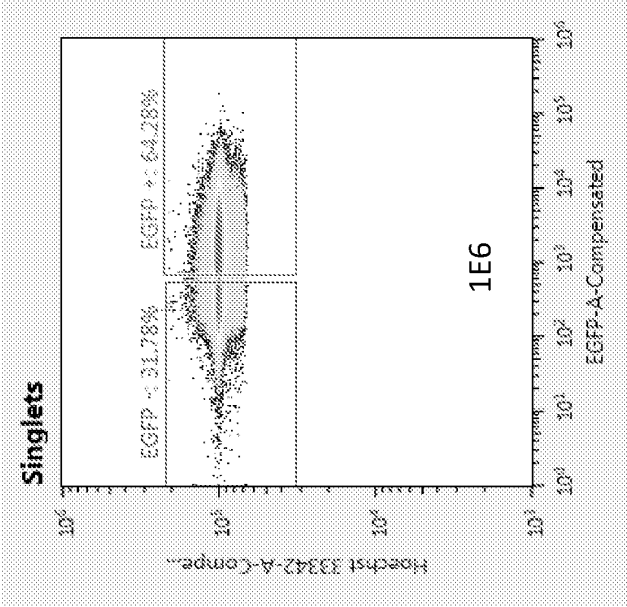


FIG. 15C

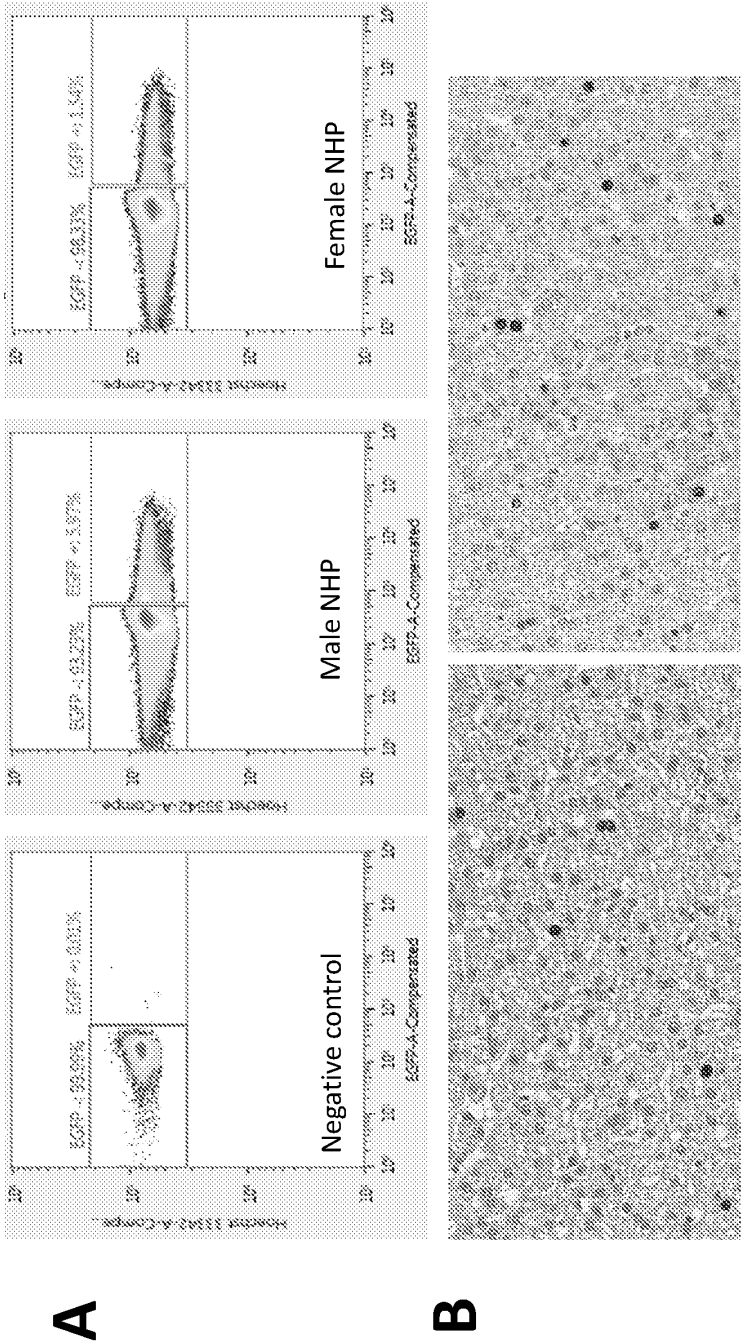


FIG. 16

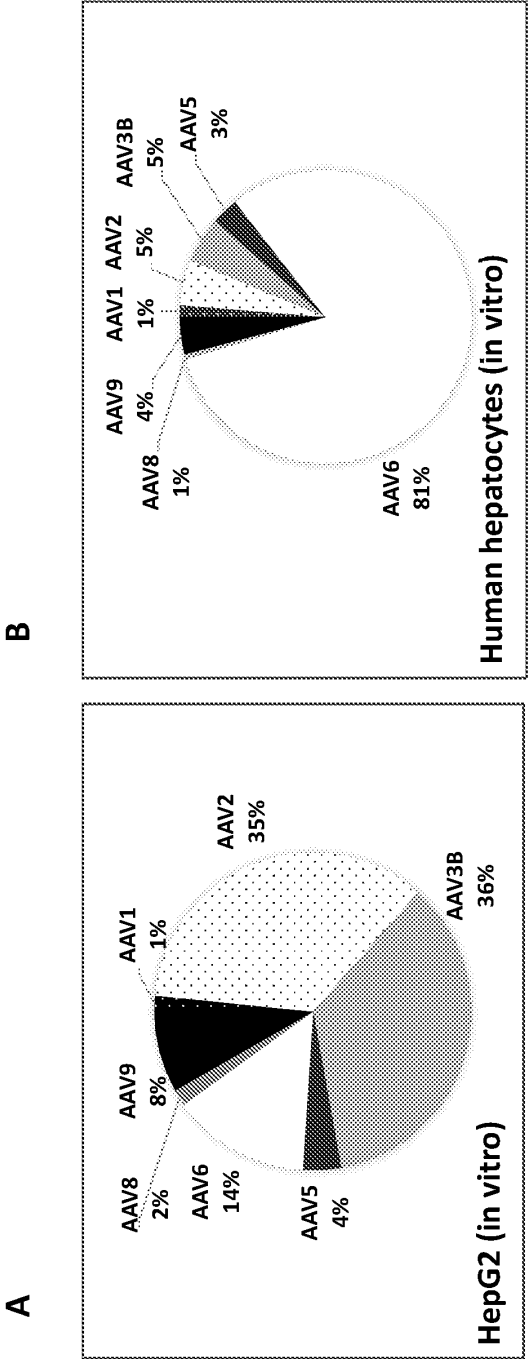


FIG. 17A

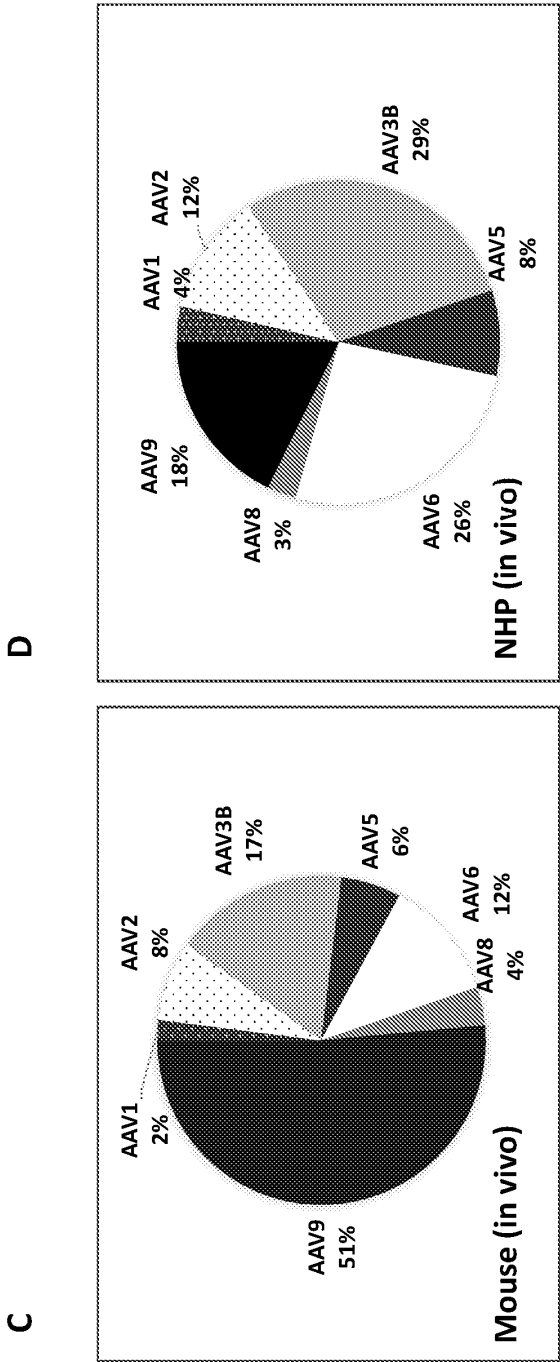


FIG. 17B

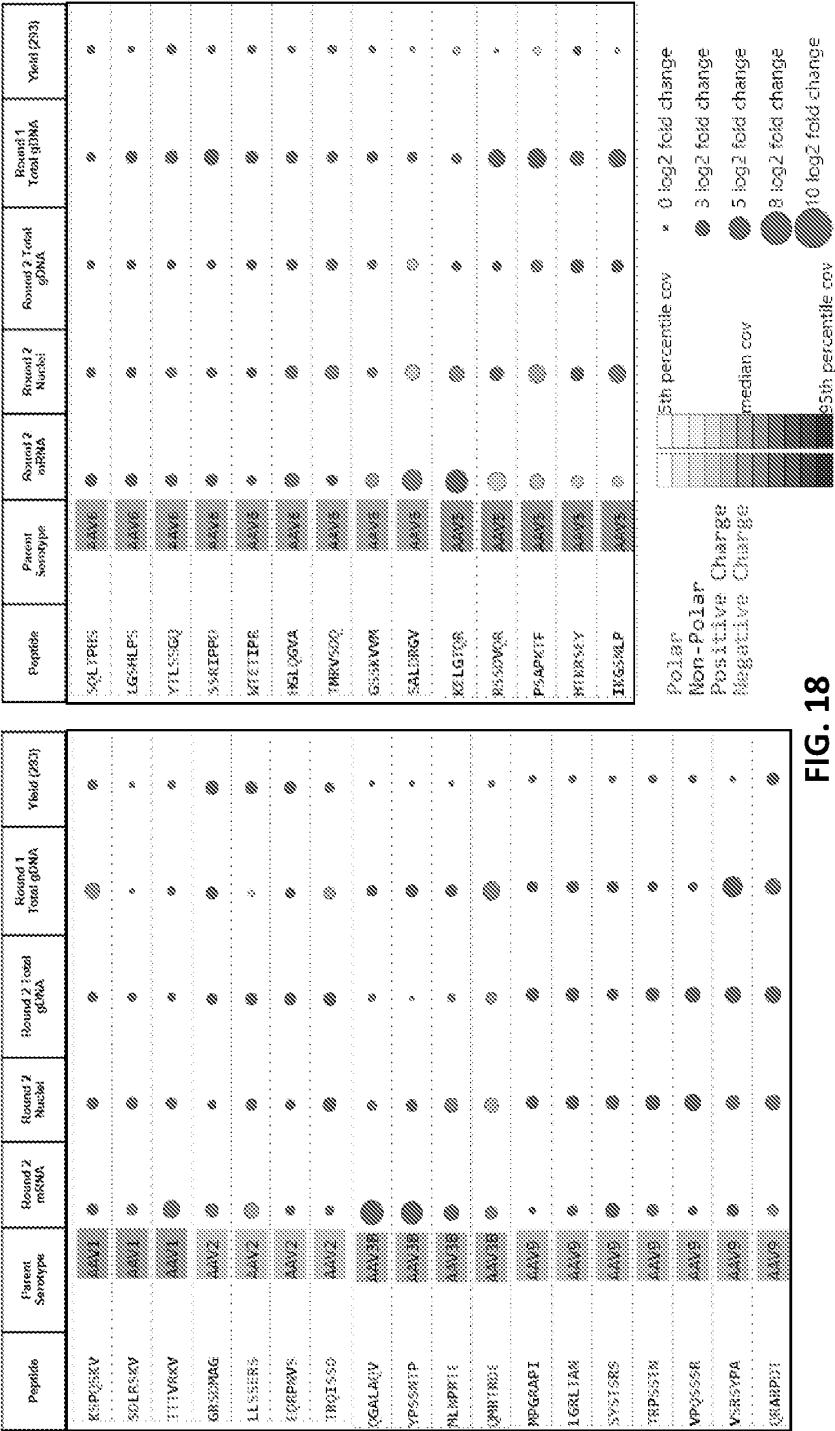
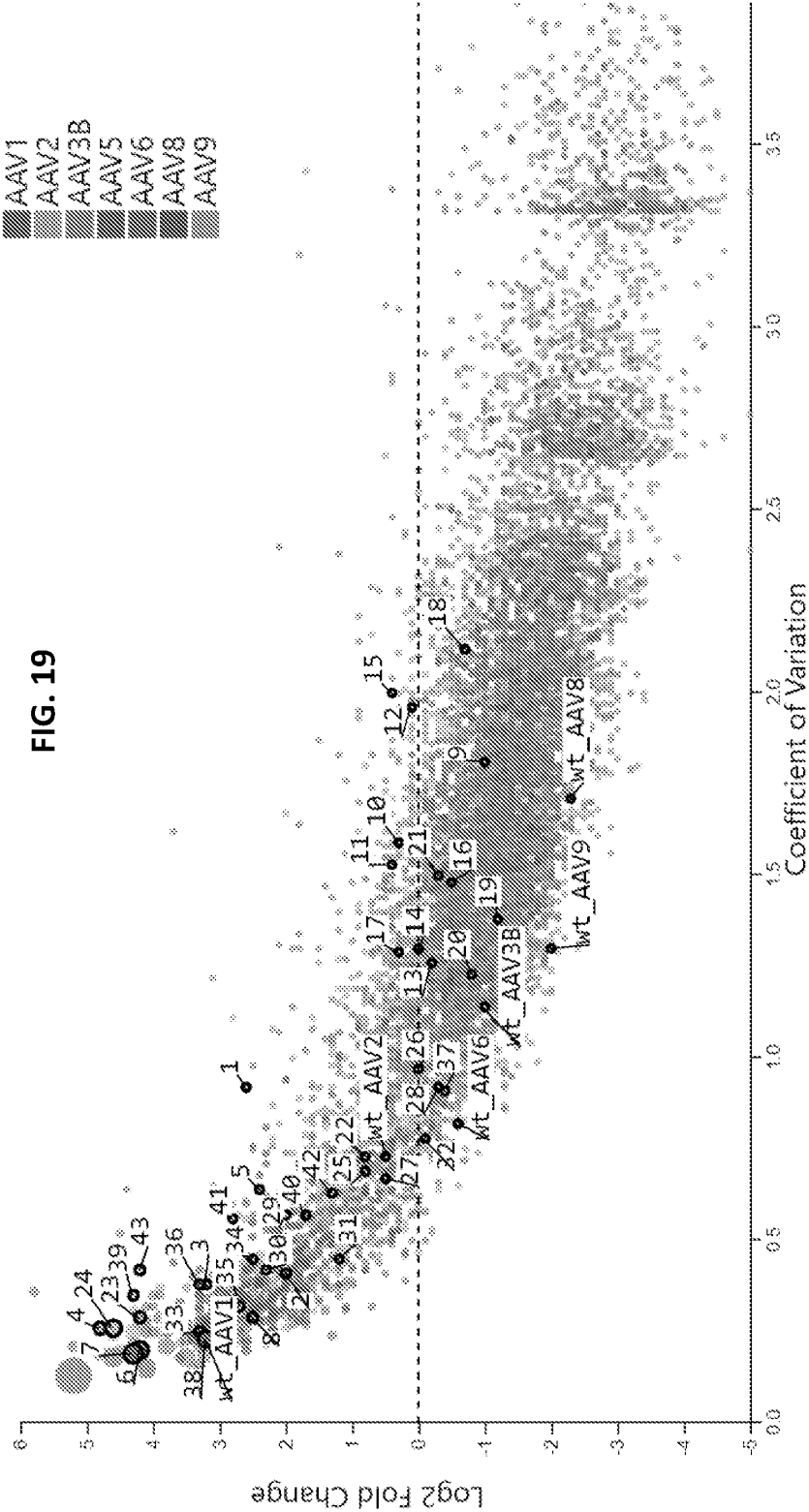
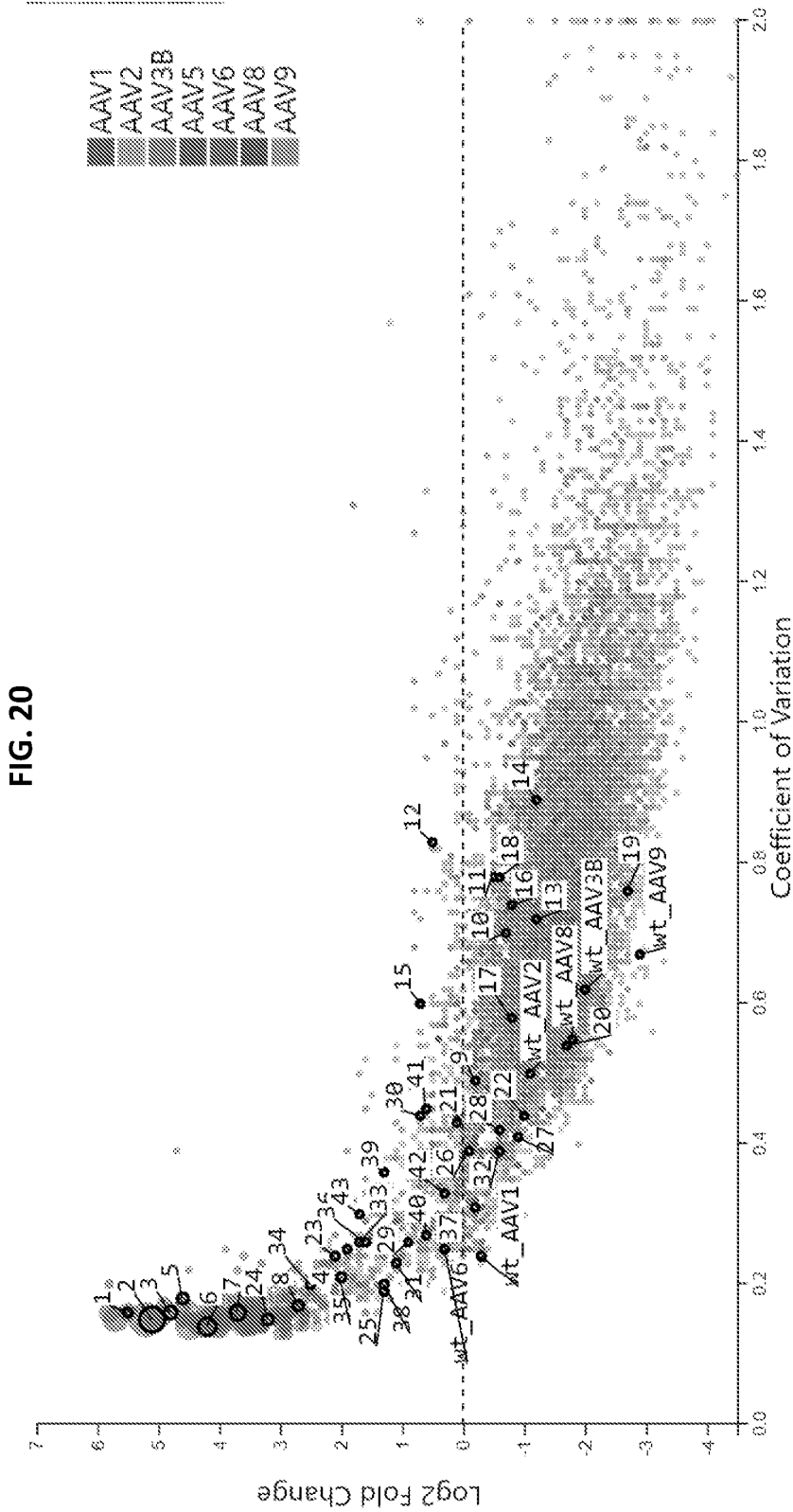
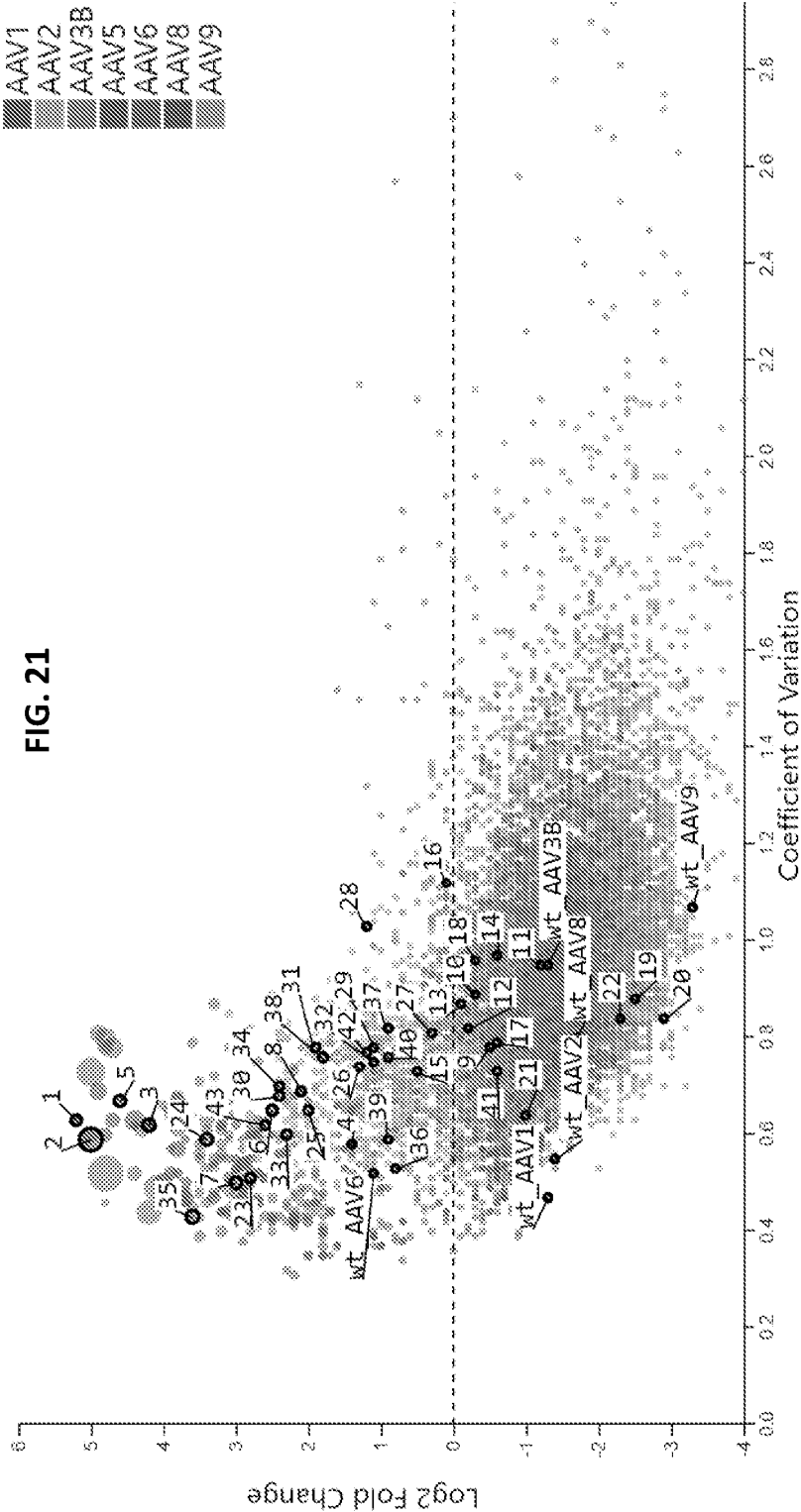
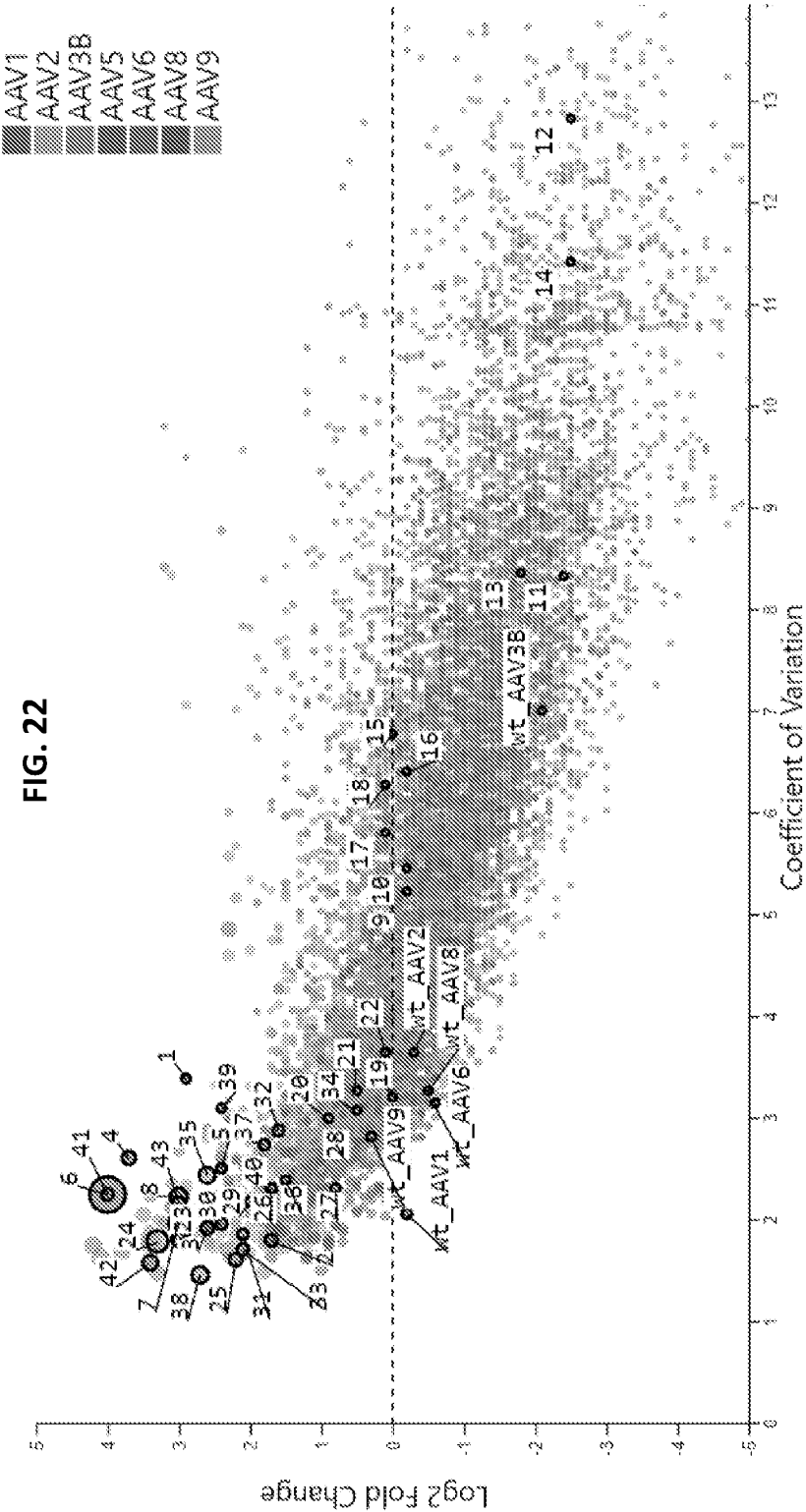


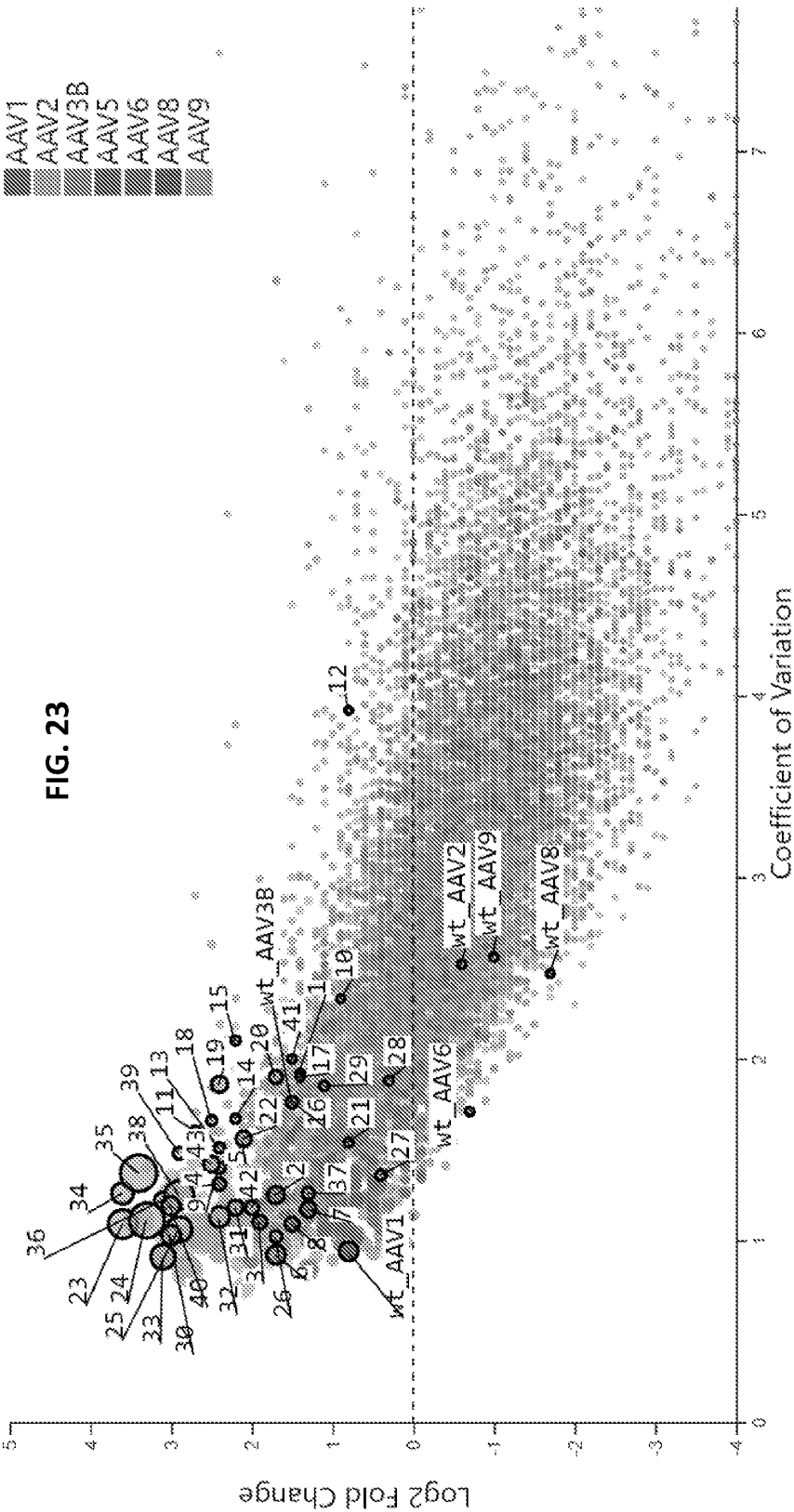
FIG. 18

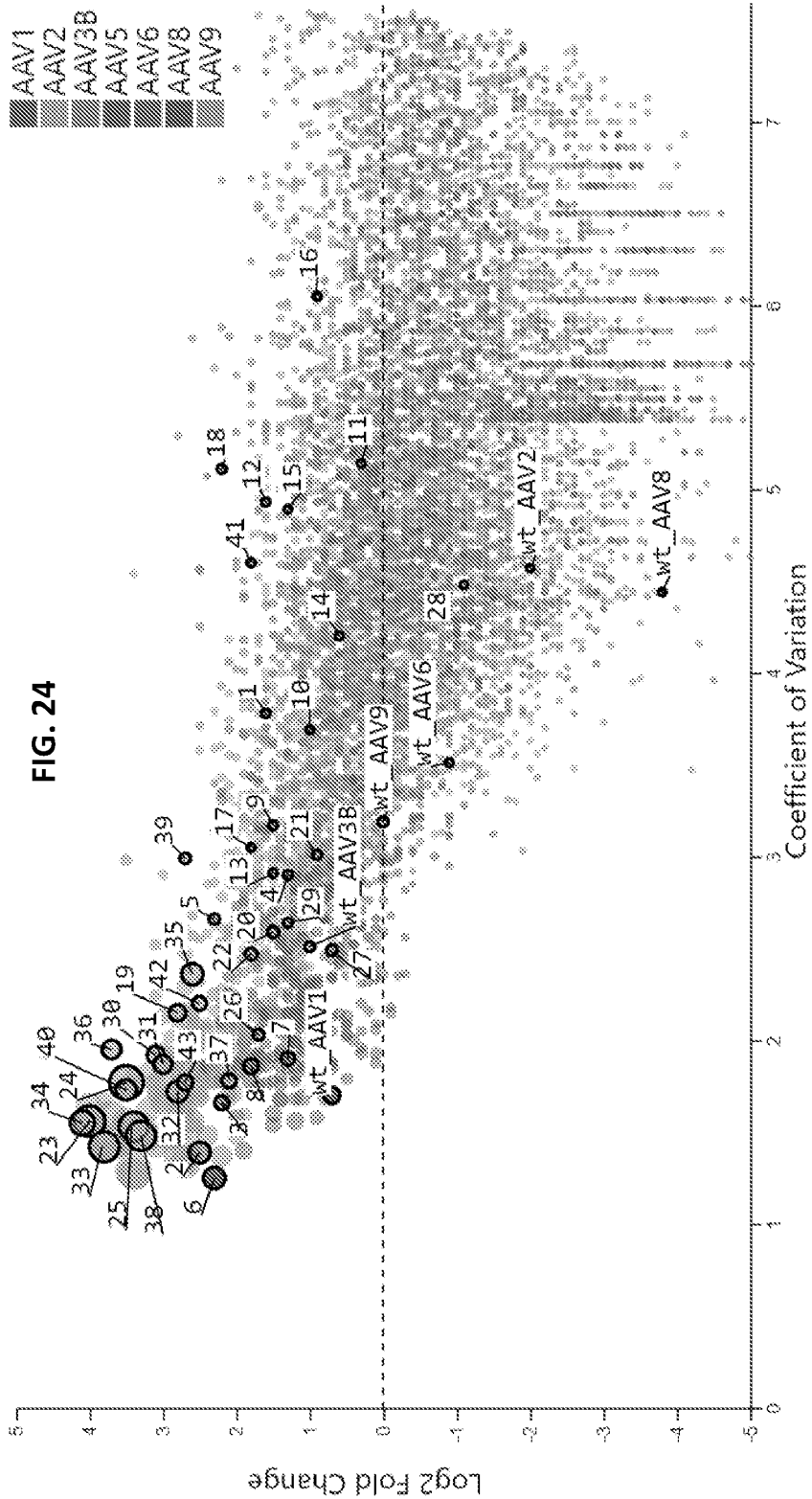


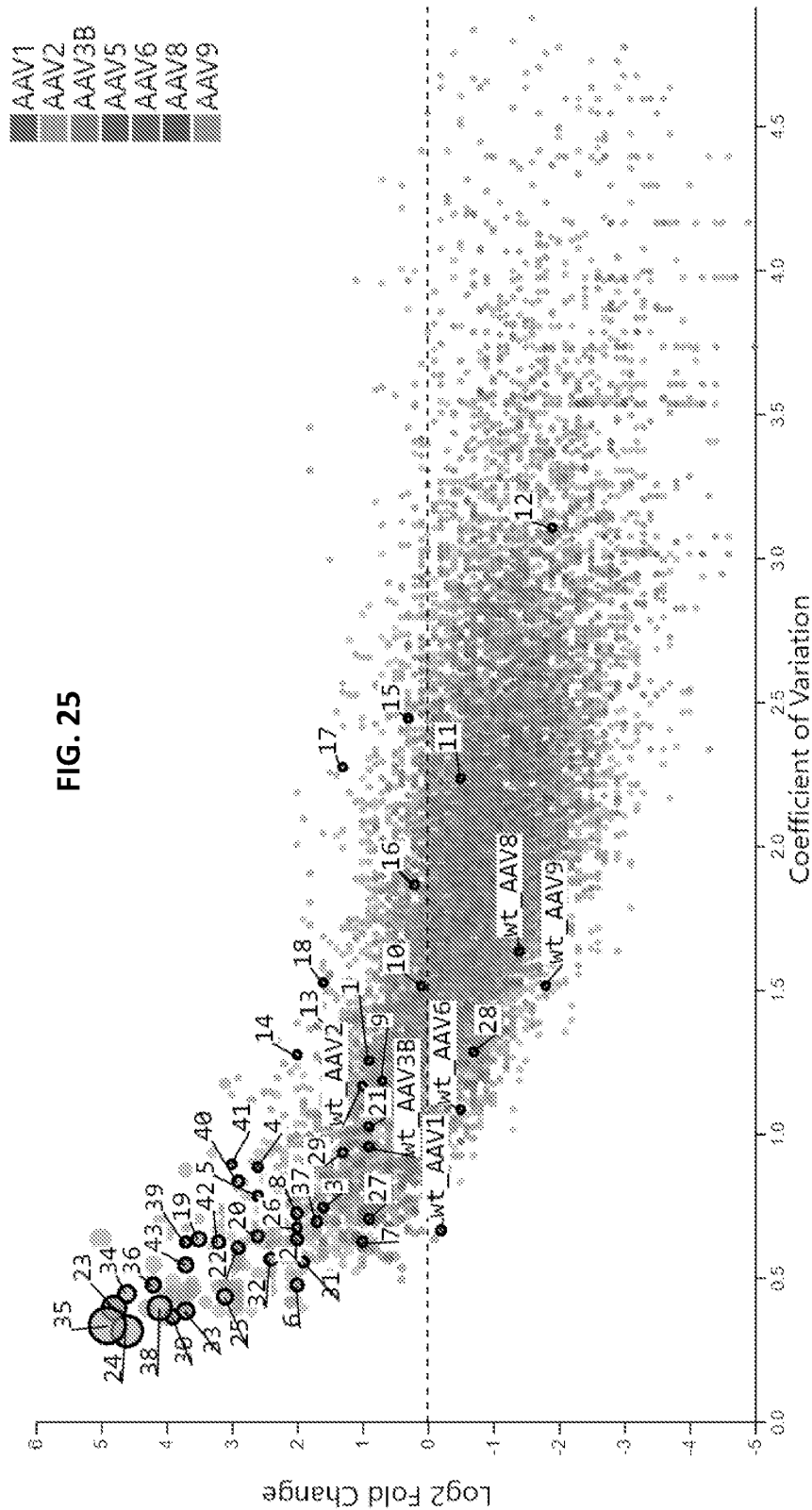


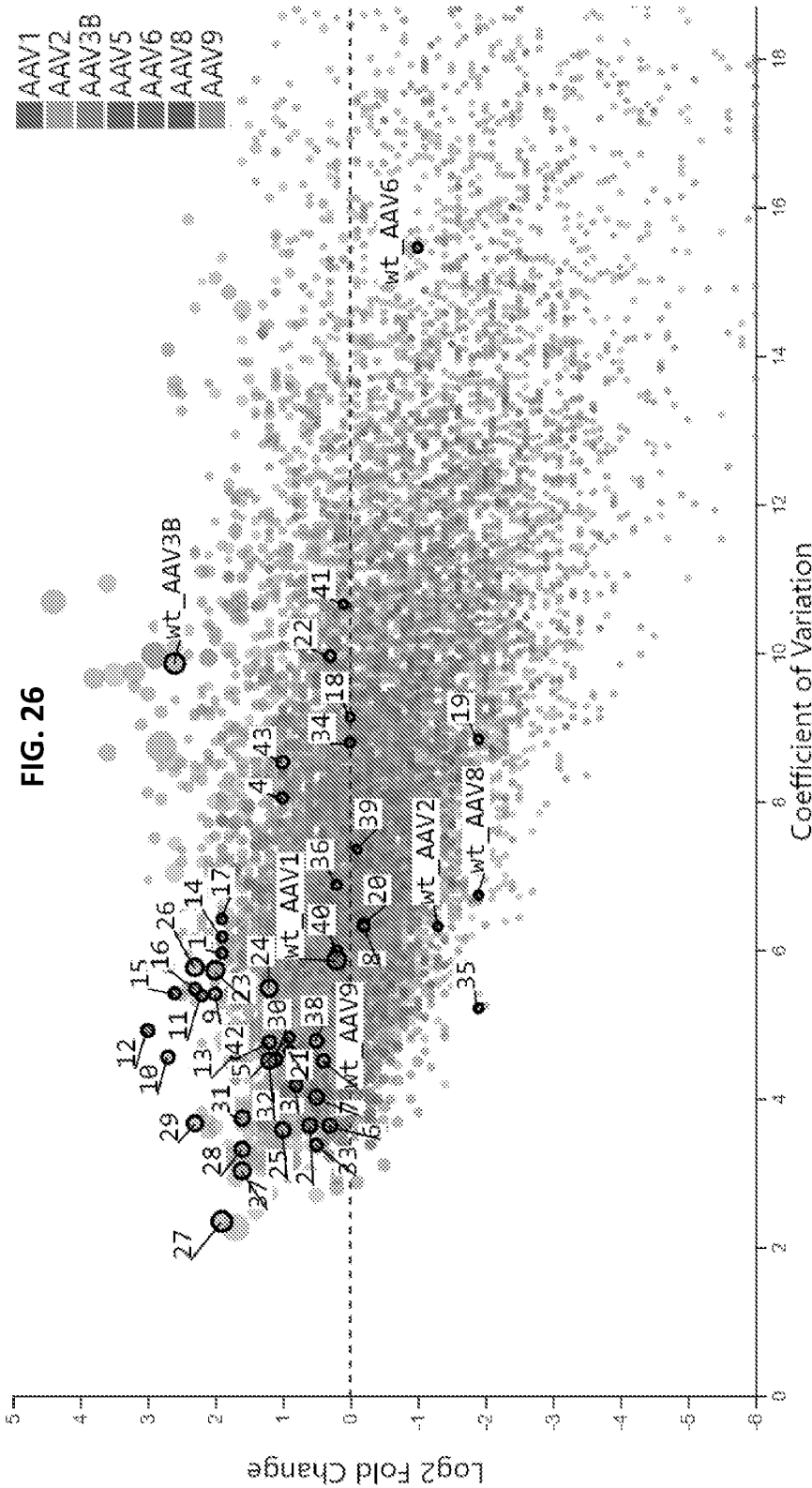


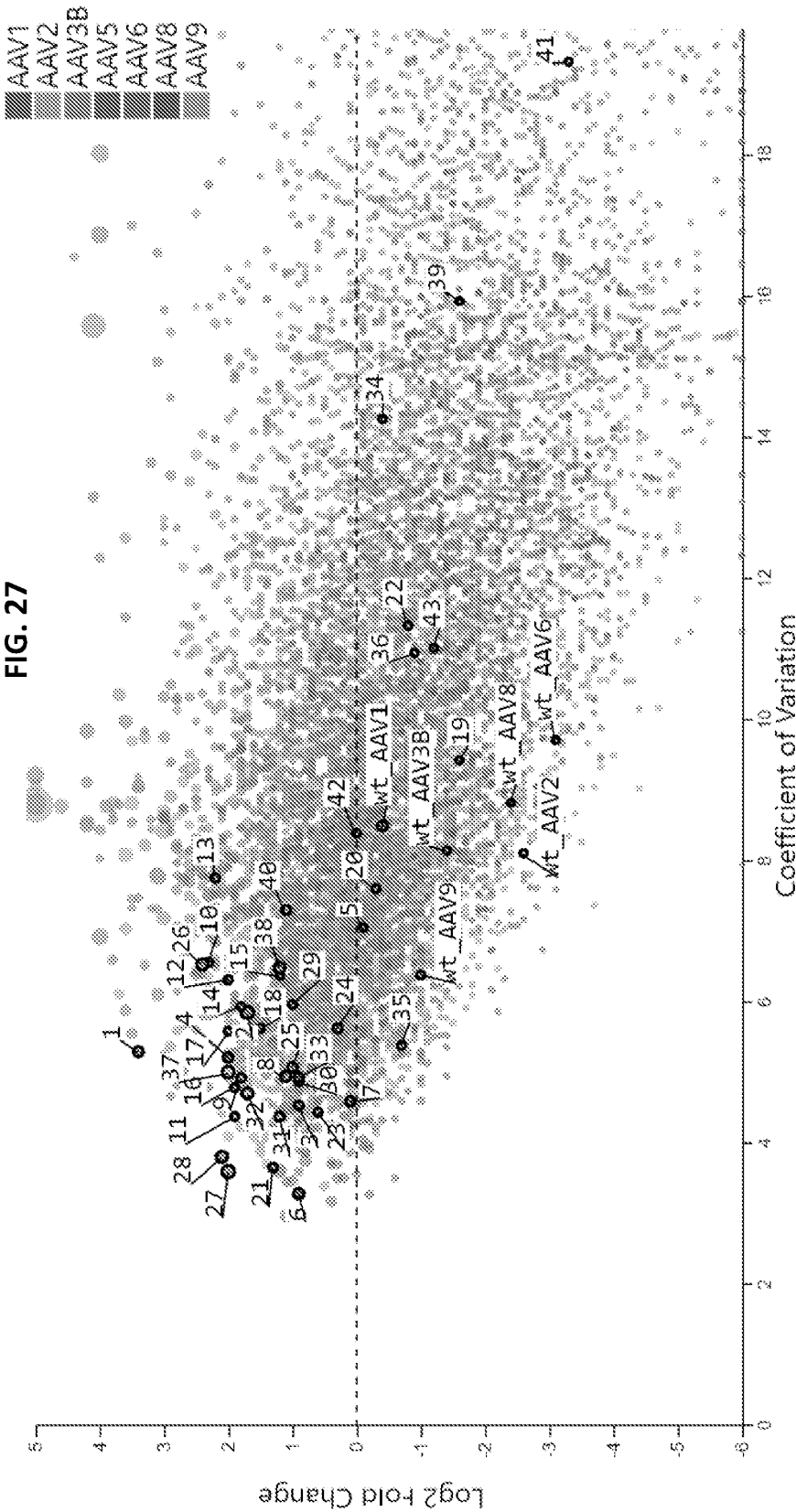












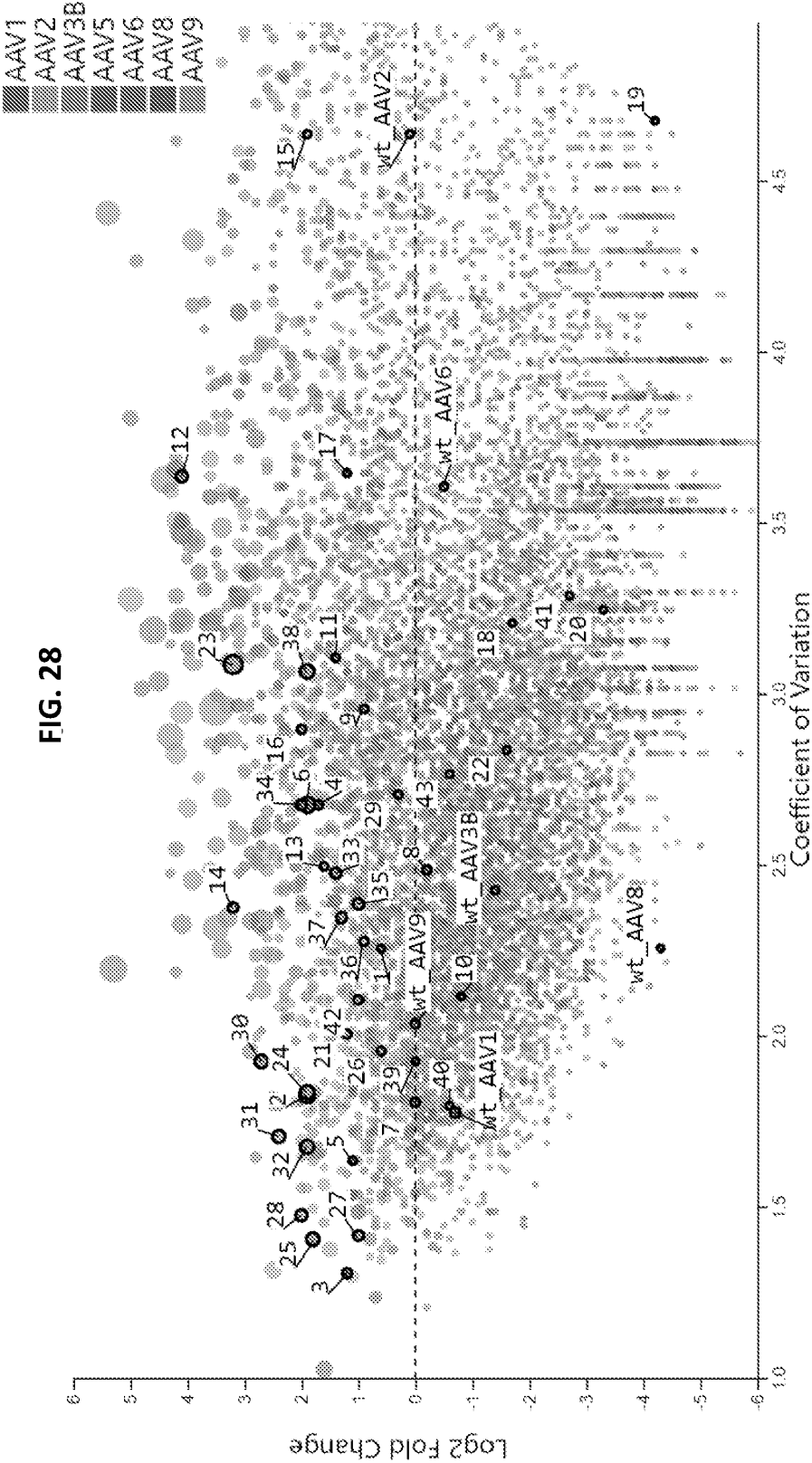


FIG. 29D

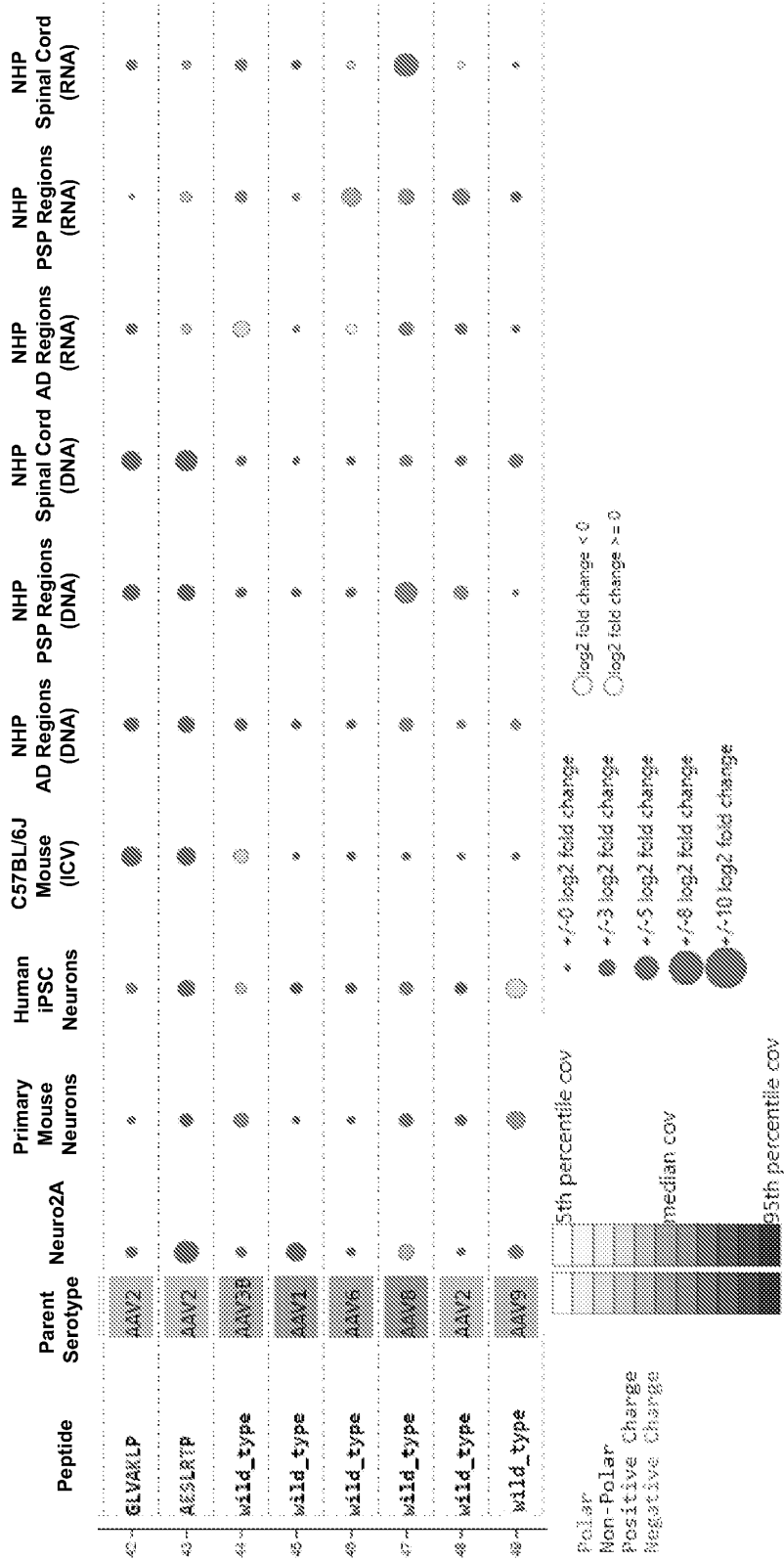


FIG. 30

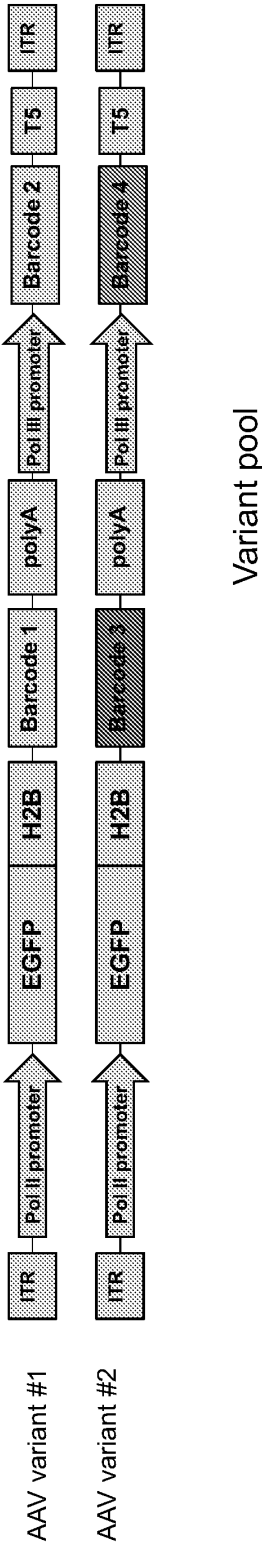


FIG. 31

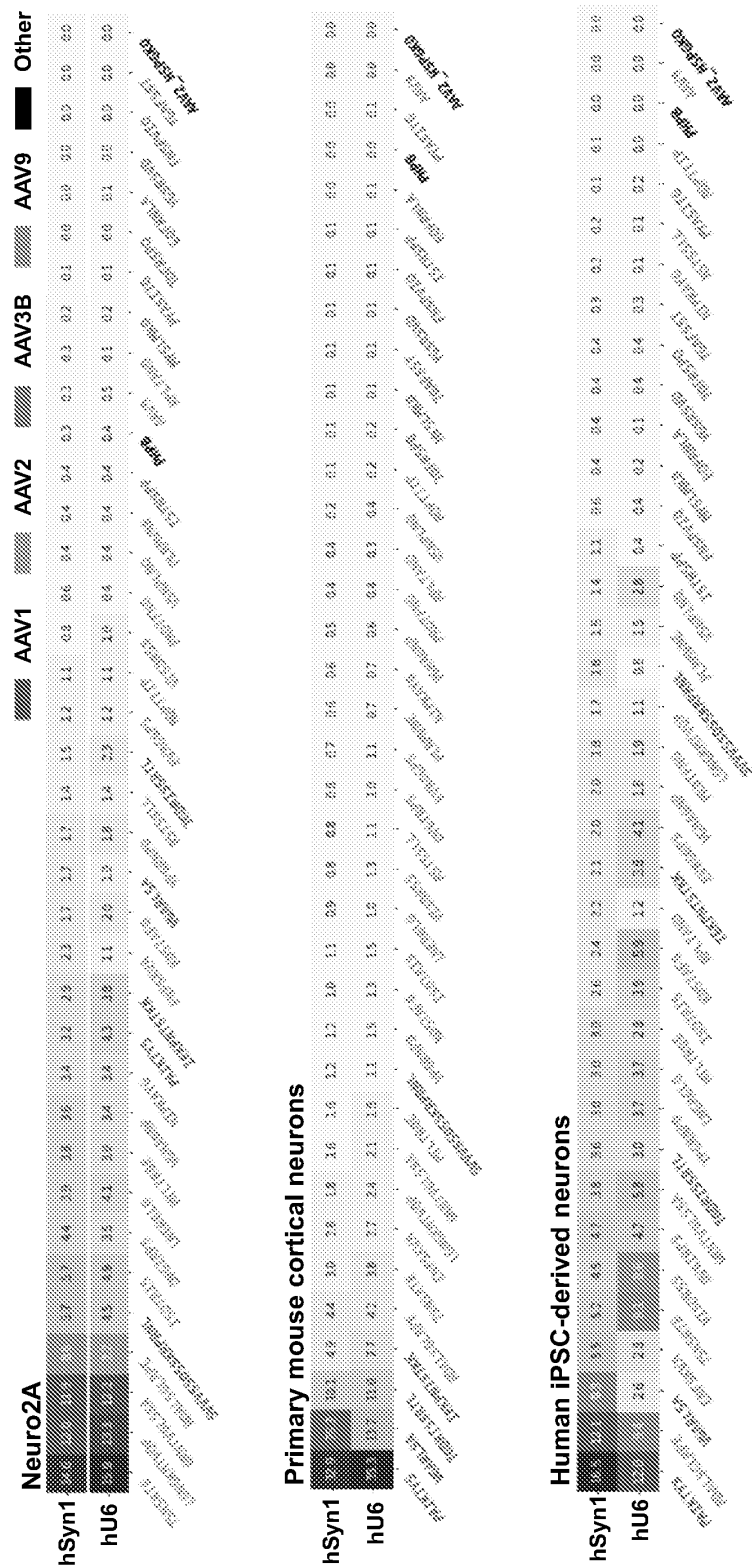


FIG. 32

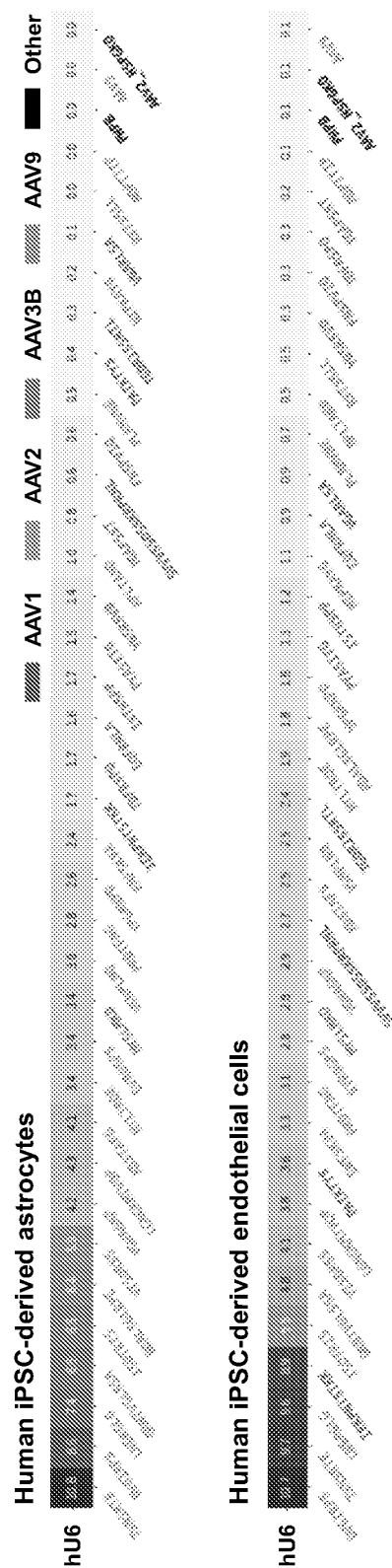


FIG. 33

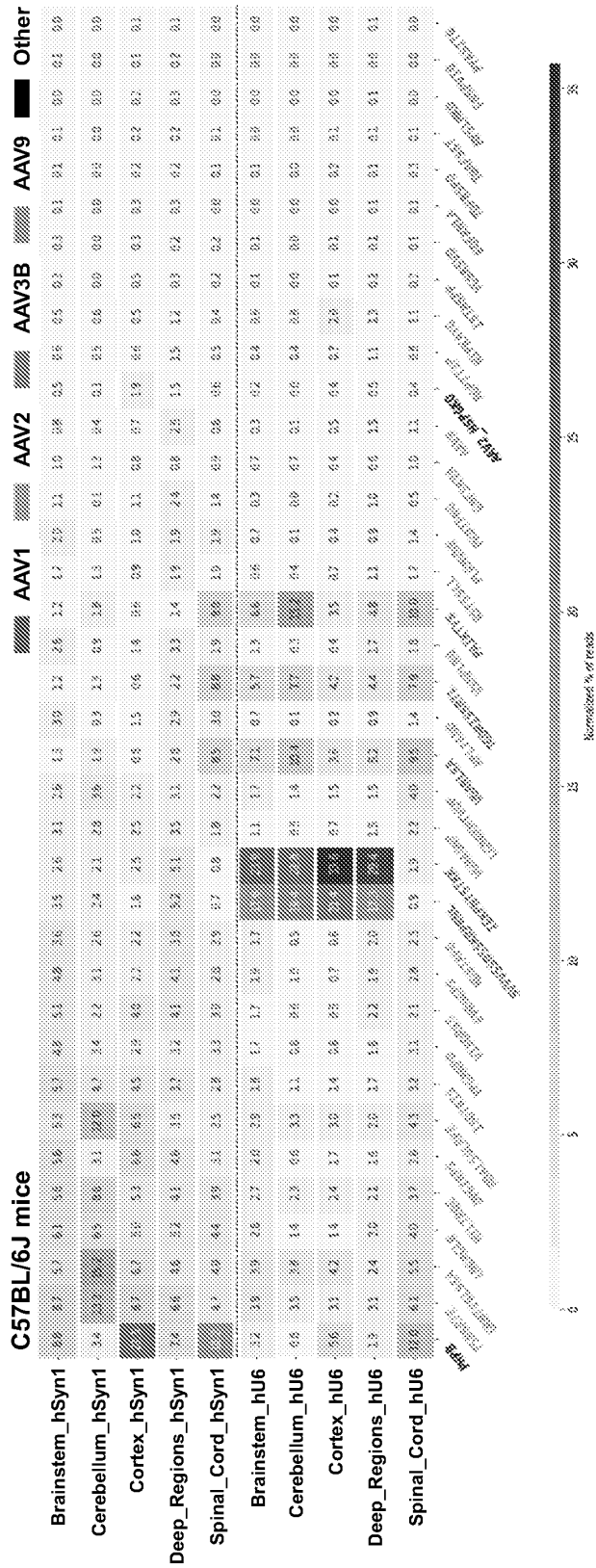


FIG. 34

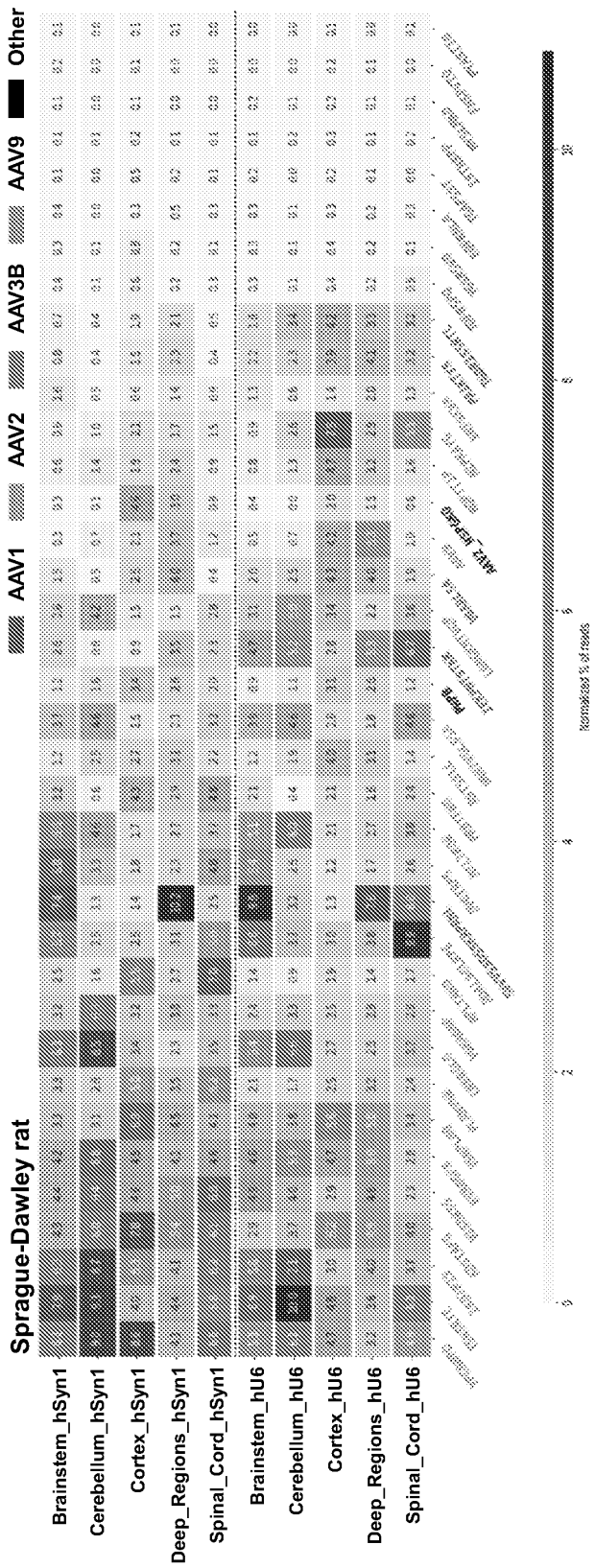


FIG. 35

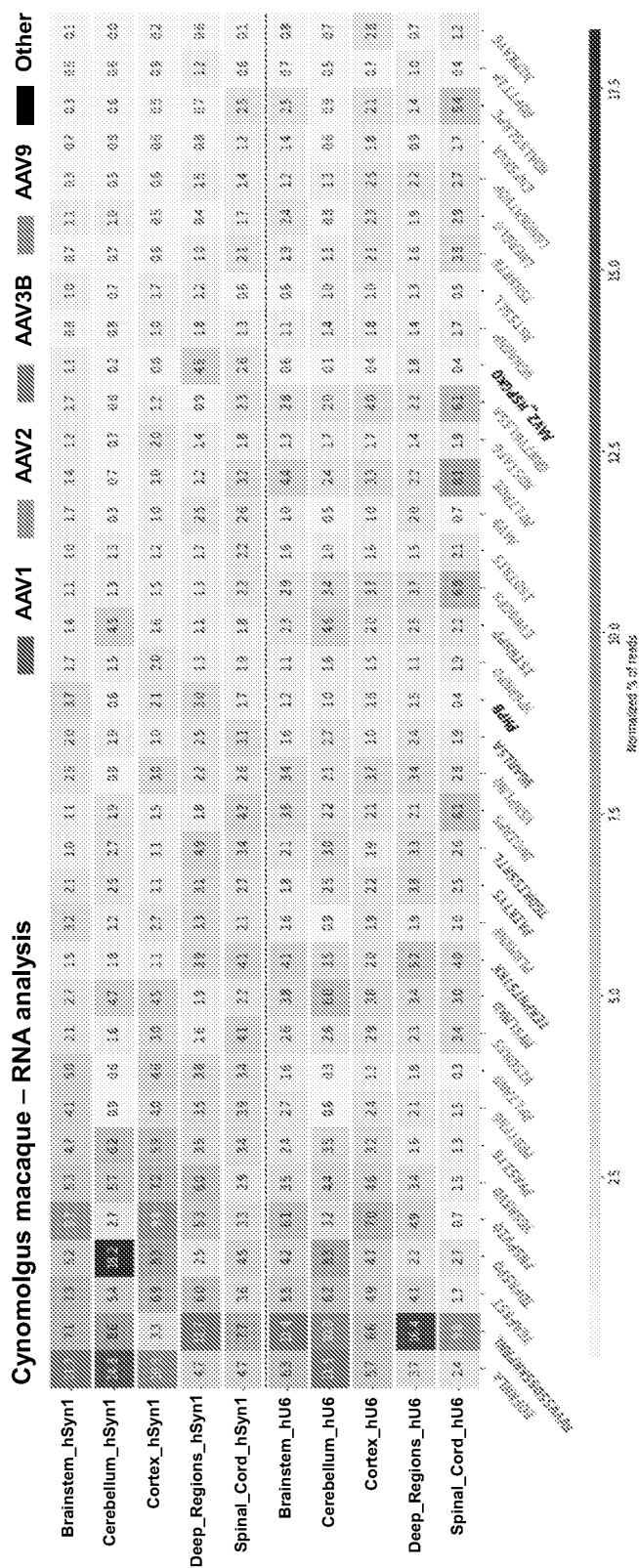


FIG. 36

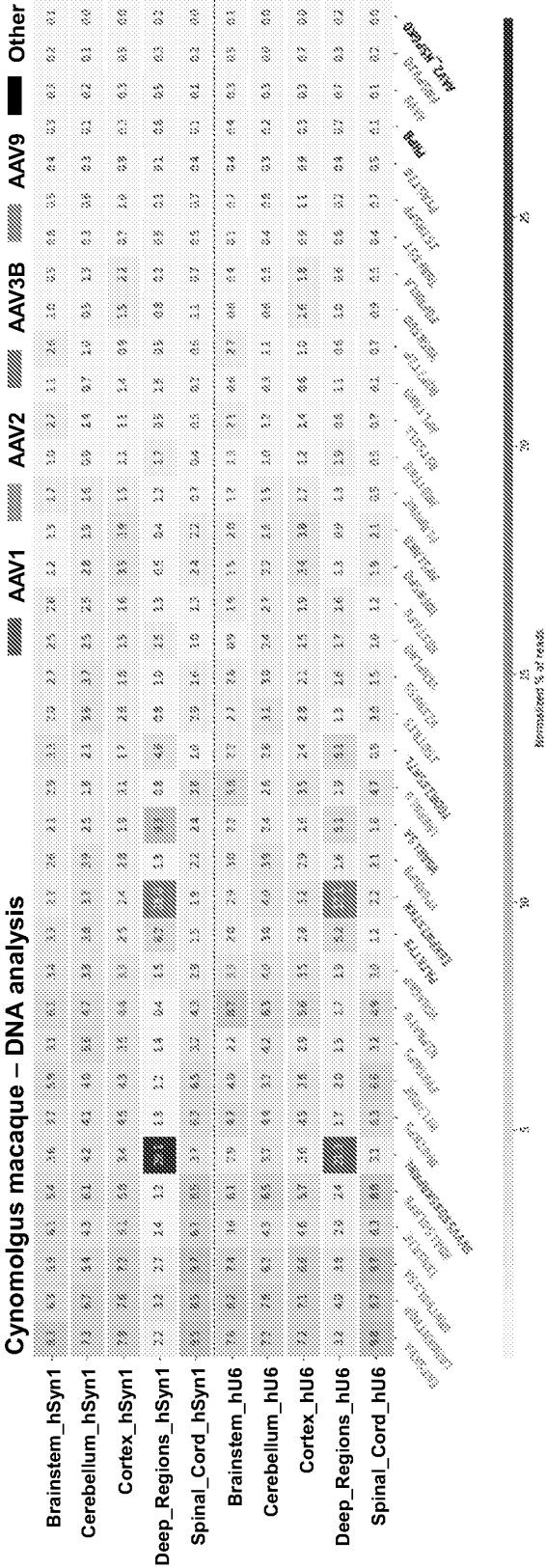


FIG. 37

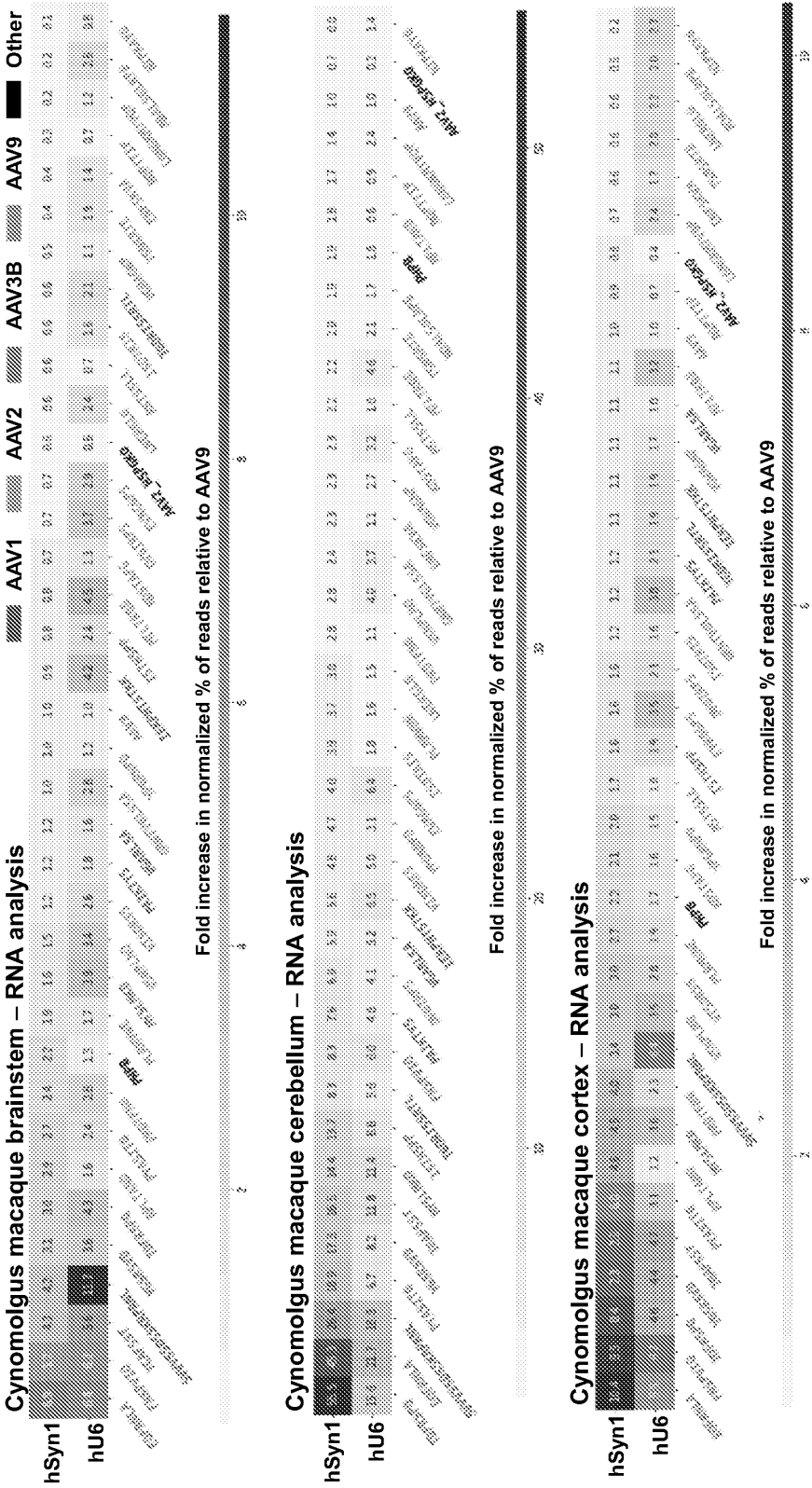


FIG. 38

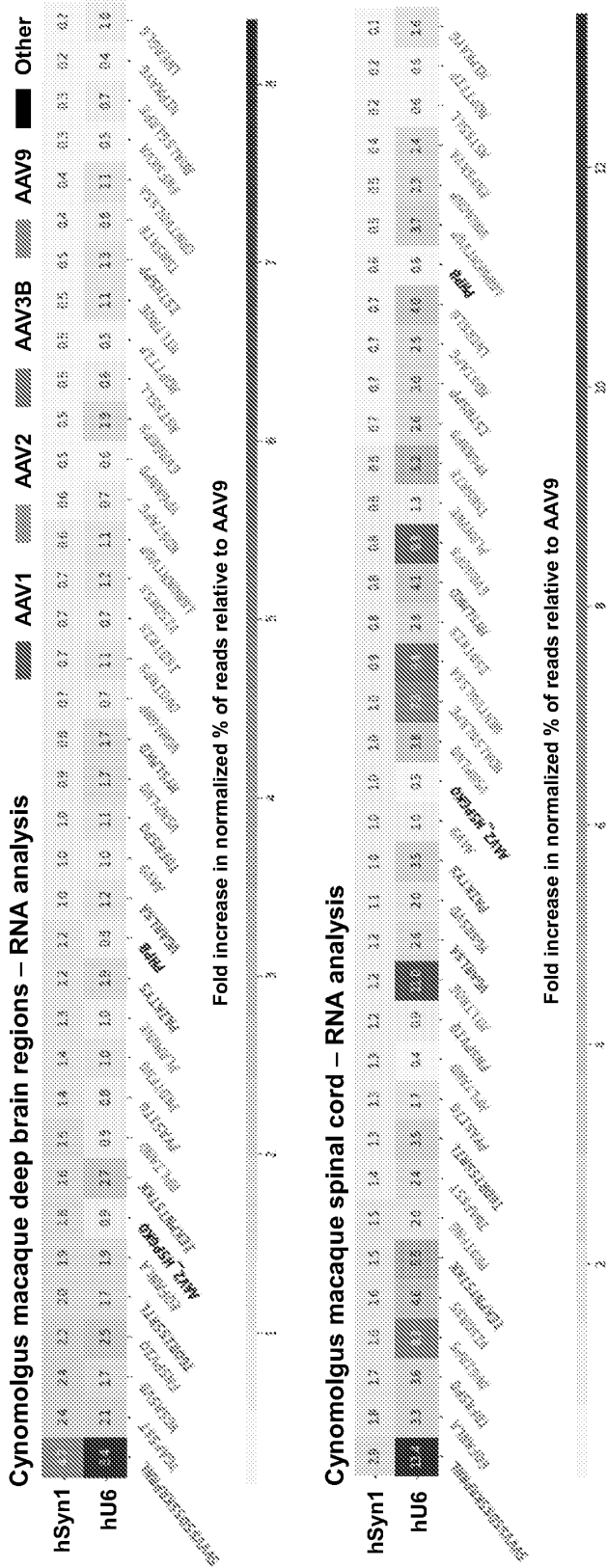


FIG. 39

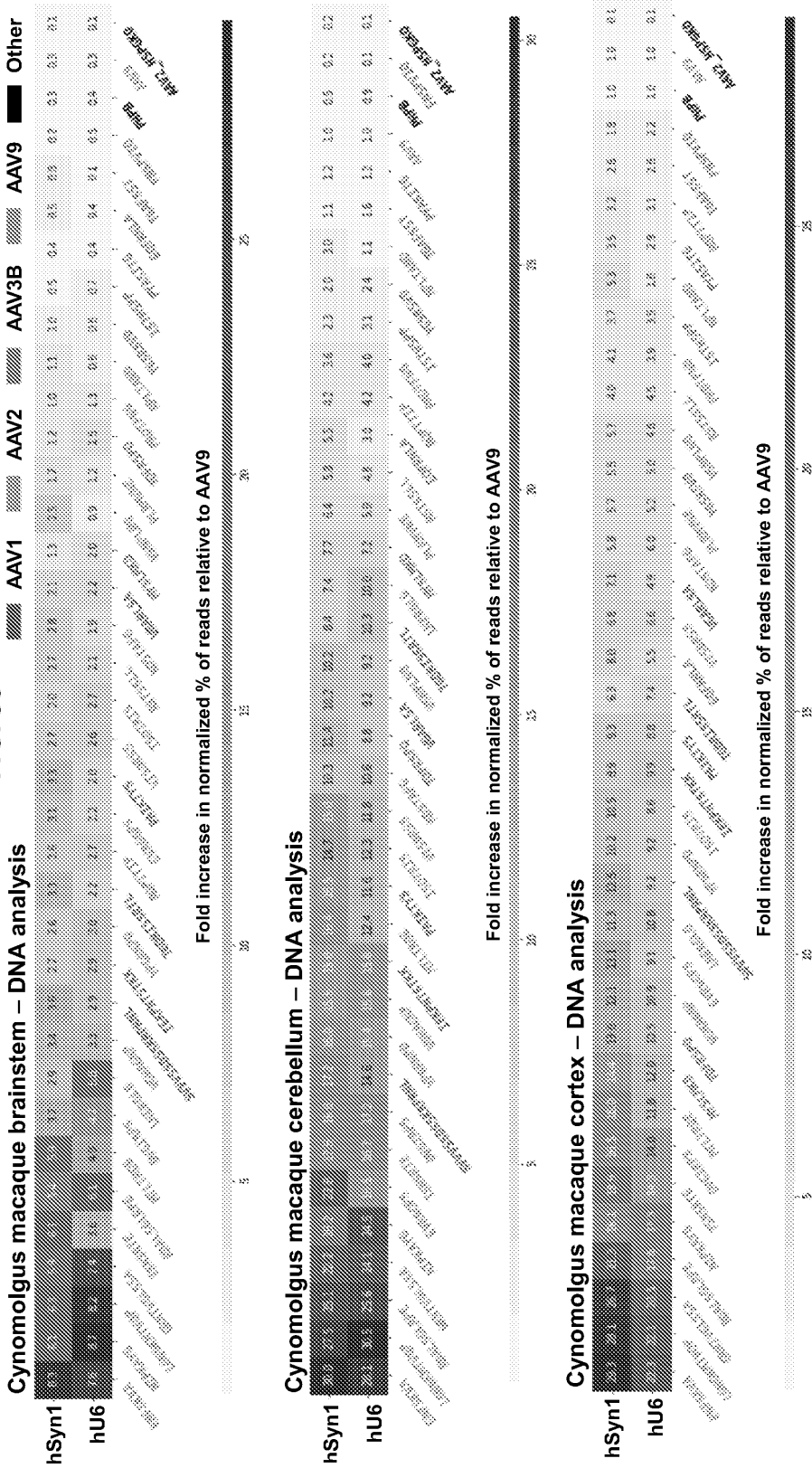


FIG. 40

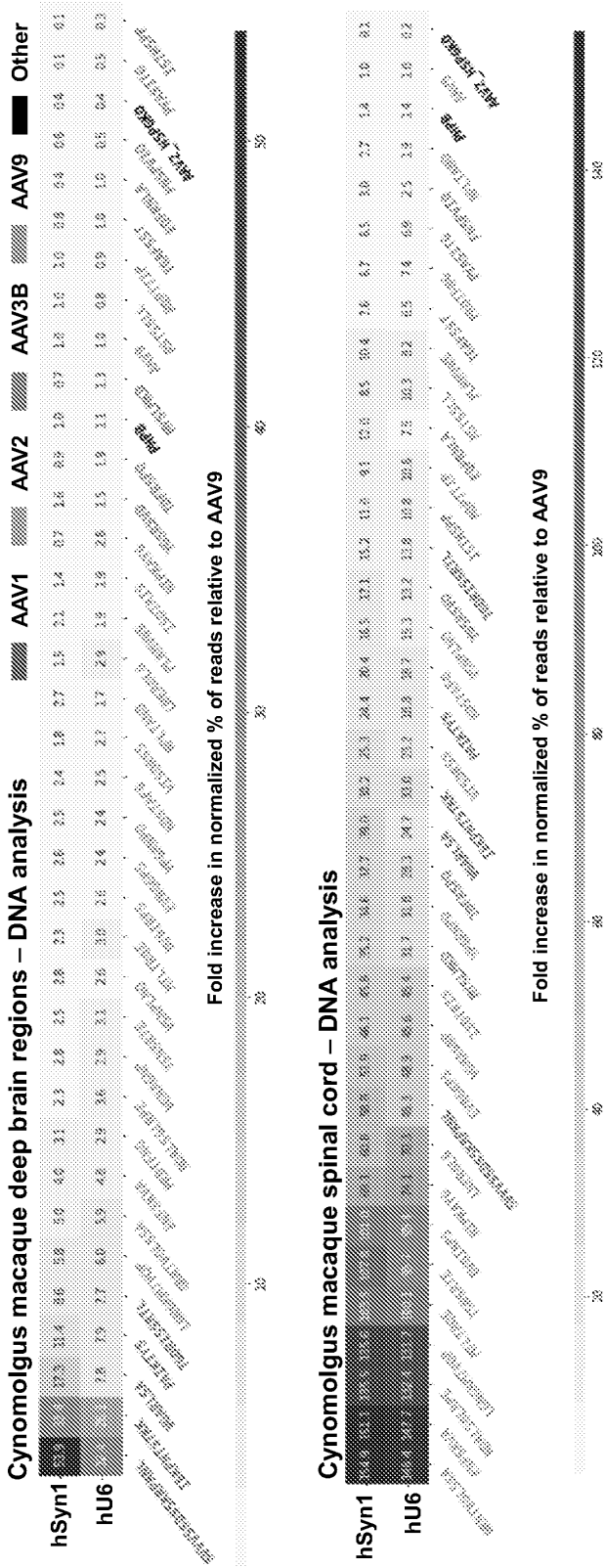


FIG. 41

Summary of hSyn1 data		AAV1	AAV2	AAV3B	AAV9	Other
NHP_Brainstem_hSyn1	21.7 71.7 72.3 52.9 53.4 47.4 50.2 21.7 15.3 22.1 10.1 11.2 25.2 37.1 17.4 11.1 10.1 17.4 12.1 17.1 11.0 0.8 10.7 11.1 0.3 0.7 0.3 0.5 0.1					
Rat_Brainstem_hSyn1	-0.4 74.4 0.1 0.4 0.2 0.3 0.1 3.2 25.4 4.4 0.1 2.6 3.3 0.8 0.7 6.8 3.3 1.5 1.2 6.2 0.1 4.2 6.3 0.3 5.6 4.3 3.7 0.3 3.2 1.2 7.9 6.3 2.6 1.6 5.7 0.6 0.6					
Mouse_Brainstem_hSyn1	-0.1 35.0 0.1 0.1 0.1 0.3 0.0 1.1 2.0 5.1 0.0 2.6 2.0 1.2 1.2 5.6 2.6 1.3 8.8 4.8 0.2 4.8 5.7 0.8 5.6 3.6 5.7 0.5 3.1 1.7 8.7 6.1 2.6 1.0 5.3 0.6 0.9					
NHP_Cerebellum_hSyn1	24.0 86.5 54.7 27.5 57.6 62.9 0.9 0.6 1.6 4.7 1.8 1.2 2.5 2.7 1.9 0.9 1.8 0.0 1.5 4.5 1.3 1.3 0.3 0.7 0.7 0.8 0.2 0.8 0.7 0.7 1.0 0.5 0.8 0.0 0.6 0.0					
Rat_Cerebellum_hSyn1	-0.0 1.3 0.0 0.1 0.0 0.1 0.0 0.6 1.6 6.4 0.0 0.8 2.8 0.4 0.4 3.3 3.1 0.5 1.6 3.0 0.1 6.8 0.7 0.7 4.6 4.0 4.0 0.1 6.3 2.5 0.3 0.5 4.2 0.5 2.5 1.4 1.0					
Mouse_Cerebellum_hSyn1	-0.0 24.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0					
NHP_Cortex_hSyn1	30.3 33.3 69.9 63.9 63.9 72.3 59.4 40.4 46.3 30.4 45.1 27.1 11.1 13.1 15.1 30.1 18.1 21.1 20.1 16.1 15.1 12.1 10.1 10.1 10.1 10.1 10.1 10.1 10.1 10.1 10.1 10.1 10.1 10.1 10.1 10.1 10.1					
Rat_Cortex_hSyn1	-0.3 14.0 0.5 0.6 0.1 0.8 0.1 4.3 5.9 4.6 0.1 0.9 5.0 1.5 1.0 1.8 6.8 2.5 3.4 8.6 0.2 4.5 5.3 2.1 1.7 7.8 1.5 4.6 3.2 2.7 4.0 3.4 1.5 0.6 2.5 1.9 2.1					
Mouse_Cortex_hSyn1	-0.3 1.8 0.2 0.2 0.1 0.3 0.1 1.1 1.5 4.0 0.2 2.5 1.8 0.6 0.6 8.8 14.0 0.8 14.0 0.8 2.9 0.5 2.2 4.5 0.7 5.1 2.2 8.7 1.9 2.5 0.9 8.7 5.0 2.2 0.8 6.5 0.6 0.5					
NHP_Deep_Regions_hSyn1	-4.7 31.7 6.0 25.5 53.0 60.3 35.3 35.3 3.8 1.6 1.9 3.9 3.3 3.1 4.9 1.8 2.2 2.5 3.0 1.3 1.1 1.3 1.7 2.5 1.2 1.4 0.9 4.5 1.8 1.2 1.0 0.4 1.5 0.8 0.7 1.2 0.6					
Rat_Deep_Regions_hSyn1	-0.5 30.2 0.2 0.2 0.0 0.2 0.1 2.9 2.7 5.0 0.0 3.5 3.5 2.3 2.1 2.3 4.5 4.0 2.8 4.1 0.1 4.1 4.1 3.7 2.7 3.4 2.1 3.0 3.8 3.1 4.4 2.3 1.5 1.4 3.1 2.4 1.7					
Mouse_Deep_Regions_hSyn1	-0.3 5.2 0.2 0.2 0.2 0.2 0.1 2.4 2.9 4.1 0.3 5.1 1.9 1.4 2.2 4.6 3.3 2.8 7.4 3.2 0.3 4.1 3.7 2.5 4.1 3.8 4.0 1.5 3.5 1.9 6.6 5.2 3.1 0.8 3.5 1.5 1.2					
NHP_Spinal_Cord_hSyn1	-4.7 7.7 3.6 4.5 3.3 2.9 3.4 3.9 3.4 4.1 2.2 4.1 2.1 2.7 3.4 4.2 2.6 3.1 1.7 1.9 1.8 2.2 2.2 2.6 3.2 1.8 2.3 2.6 1.3 0.6 2.1 1.7 1.4 1.2 2.5 0.6 0.1					
Rat_Spinal_Cord_hSyn1	-0.3 2.5 0.1 0.3 0.0 0.1 0.0 4.8 7.9 6.8 0.0 2.3 5.2 0.4 0.5 4.8 4.1 6.4 2.0 6.6 0.1 4.6 6.2 1.2 3.7 6.1 3.2 0.8 3.3 2.2 5.8 3.5 2.8 0.9 5.0 0.9 1.5					
Mouse_Spinal_Cord_hSyn1	-0.0 0.7 0.1 0.1 0.0 0.2 0.0 1.4 3.0 3.0 0.0 0.8 1.9 0.0 0.8 3.1 1.9 0.5 1.7 0.0 3.3 0.2 2.8 2.8 0.6 3.9 2.9 4.0 0.6 1.8 1.0 4.7 4.4 2.2 0.9 2.5 0.9 0.4					
hiPSC_Neurons_hSyn1	-0.4 1.8 0.3 0.4 0.6 0.4 0.1 1.8 2.2 4.5 0.4 2.1 1.5 1.5 1.6 4.7 1.4 0.9 0.0 3.0 1.1 2.0 2.6 0.0 3.0 2.4 3.8 0.0 2.0 0.2 5.2 3.0 1.7 5.5 3.2 0.1 0.2					
Mouse_Neurons_hSyn1	-0.0 1.2 0.1 0.1 0.1 0.1 0.0 0.4 0.4 0.8 0.1 4.9 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5					
Neuro2A_hSyn1	-0.0 5.7 0.0 0.0 0.0 0.0 0.1 0.0 0.3 0.8 0.2 2.9 0.4 3.2 1.5 4.4 0.4 1.7 0.3 1.7 0.4 1.2 5.7 0.3 3.8 1.7 1.9 0.0 3.6 1.4 3.4 3.9 3.0 2.3 0.6 1.1 3.4					

FIG. 42

Summary of hU6 data		AAV1	AAV2	AAV3B	AAV9	Other																																	
NHP_Brainstem_hU6	33.4	6.3	3.8	5.5	2.9	4.2	4.1	4.4	6.1	3.5	3.4	2.8	2.6	3.6	2.3	1.8	2.1	2.4	2.4	1.2	1.9	2.5	1.6	2.7	1.6	1.3	1.1	1.1	0.8	1.2	1.4	1.0	1.6	0.6	0.7	0.6			
Rat_Brainstem_hU6	9.8	0.3	0.2	0.2	4.6	0.3	4.7	5.1	0.0	0.3	4.0	0.9	4.9	5.4	0.1	2.2	1.8	0.0	3.4	3.1	0.9	6.6	2.0	2.1	5.6	2.1	2.9	2.4	5.3	0.9	0.9	1.3	0.5	1.4	1.2	0.8	0.4		
Mouse_Brainstem_hU6	0.0	0.0	0.0	1.9	0.1	2.7	0.0	0.1	1.3	3.9	1.7	2.0	0.1	6.6	3.7	0.0	2.6	1.7	3.9	2.9	7.1	0.3	1.8	0.7	1.7	1.1	1.7	0.6	3.2	0.7	0.3	0.7	0.6	0.4	0.2				
NHP_Cerebellum_hU6	30.0	1.5	6.0	6.2	3.4	2.3	3.5	2.4	3.2	4.4	2.1	2.0	2.6	2.2	4.6	2.5	3.0	3.5	0.8	1.3	1.1	0.9	2.7	0.6	1.0	0.9	1.7	1.4	1.6	0.7	1.0	0.6	0.5	0.3	1.0	0.5	0.1		
Rat_Cerebellum_hU6	3.2	0.1	0.1	0.0	5.3	0.1	5.2	6.0	0.0	0.1	3.8	4.6	4.0	2.5	0.2	2.3	3.4	0.0	6.6	5.0	3.0	3.7	2.5	0.4	7.1	1.7	3.7	3.3	6.1	2.6	1.1	0.6	0.7	0.9	1.6	1.3	0.0		
Mouse_Cerebellum_hU6	0.0	0.0	0.0	1.0	0.0	2.3	0.0	0.0	0.3	3.8	0.6	0.0	0.0	0.0	0.0	0.0	7.7	0.0	1.4	1.4	3.5	3.3	3.4	0.0	1.1	0.1	0.5	0.5	0.6	0.8	0.7	0.1	0.1	0.4	0.4	0.0			
NHP_Cortex_hU6	6.6	5.7	3.8	4.9	3.7	4.7	2.0	3.3	7.0	4.6	3.7	4.0	2.9	2.1	2.0	2.2	1.9	3.2	2.3	2.5	2.1	2.1	1.0	2.4	1.6	1.9	1.7	1.8	1.5	2.8	1.8	1.0	1.2	1.0	0.7	0.4			
Rat_Cortex_hU6	1.3	0.3	0.2	0.2	4.7	0.4	2.8	2.1	0.2	0.4	5.6	2.0	2.9	1.2	0.3	3.9	4.2	0.1	2.7	3.4	4.8	3.0	4.3	2.1	3.0	2.5	0.2	1.4	0.4	6.6	0.7	0.6	2.0	5.6	0.4	0.5	0.2	0.7	0.4
Mouse_Cortex_hU6	0.0	0.0	0.1	0.7	0.2	2.4	0.0	0.1	0.4	4.2	0.5	1.7	0.1	3.5	4.2	0.0	1.4	1.5	3.1	3.0	3.6	0.2	1.4	0.4	6.6	0.7	0.6	2.0	5.6	0.4	0.5	0.2	0.7	0.4	0.5	0.2	0.7	0.4	
NHP_Deep_Regions_hU6	3.4	3.7	3.4	4.1	3.7	2.2	5.2	2.2	4.9	3.4	3.4	2.2	2.3	2.1	2.5	3.6	3.9	1.6	1.9	2.2	1.6	1.4	2.4	2.1	1.5	1.9	1.4	1.1	0.7	1.5	0.9	2.0	1.9	1.3	1.0	1.8			
Rat_Deep_Regions_hU6	7.6	0.2	0.1	0.1	5.8	0.2	5.3	2.7	0.1	0.2	5.0	1.8	4.6	1.7	0.1	4.1	3.3	0.0	2.5	2.2	3.6	3.8	4.0	1.8	4.0	3.2	4.9	2.8	3.2	2.9	2.6	2.0	5.3	1.4	3.1	3.2	1.5		
Mouse_Deep_Regions_hU6	0.1	0.1	0.1	1.0	0.1	2.1	0.0	0.1	1.7	2.4	2.2	1.6	0.2	4.8	4.4	0.1	2.0	1.5	3.1	2.0	5.2	1.0	1.7	0.9	3.0	1.5	1.6	1.3	1.9	0.6	1.5	0.9	1.1	1.1	0.5				
NHP_Spinal_Cord_hU6	9.8	2.4	3.0	1.7	6.6	2.7	4.0	0.1	0.7	1.5	2.0	6.1	3.4	6.1	2.2	2.5	2.6	1.3	2.9	2.7	3.8	5.4	1.9	1.5	2.1	1.0	1.9	1.7	1.9	1.2	0.4	1.7	0.7	0.3	0.5	0.4	0.4		
Rat_Spinal_Cord_hU6	6.0	0.3	0.1	0.0	2.8	0.5	8.7	3.8	0.0	0.1	3.4	4.6	2.3	2.6	0.2	3.2	3.2	0.1	3.7	3.6	6.2	9.9	1.9	2.4	3.7	2.4	4.0	2.8	4.9	5.5	1.2	1.3	1.0	1.7	1.4	1.6	0.6		
Mouse_Spinal_Cord_hU6	0.9	0.1	0.0	0.1	2.8	0.3	1.9	3.7	0.0	0.1	1.8	5.5	2.1	2.6	0.2	3.0	7.9	0.0	4.0	4.0	6.1	4.3	9.5	0.5	3.2	1.4	2.3	2.2	3.1	1.1	2.0	1.0	1.1	1.4	1.7	0.8	0.4		
hiPSC_Astrocytes_hU6	0.6	1.6	3.4	0.8	3.4	1.7	1.7	3.4	0.6	1.4	3.0	6.9	5.9	8.6	1.7	0.4	0.3	1.5	7.4	4.3	3.0	8.4	0.1	2.8	6.5	0.5	4.1	4.2	2.6	0.2	0.0	2.4	0.0	1.8	0.0	0.0			
hiPSC_Endothelial_Cells_hU6	2.7	0.9	2.8	0.2	2.8	0.3	8.9	1.9	0.3	0.3	2.5	4.8	4.1	3.0	1.2	3.6	2.4	1.3	9.6	3.8	9.7	1.8	0.9	3.1	5.5	0.7	2.5	2.9	1.8	1.1	0.1	3.3	0.1	0.5	0.5	0.1	0.1		
hiPSC_Neurons_hU6	0.8	0.1	0.2	0.3	4.1	0.4	3.8	2.8	0.4	0.4	2.8	5.8	8.6	4.7	0.4	3.0	3.0	0.2	3.7	1.1	0.1	0.4	2.6	1.9	3.9	1.5	5.9	1.8	3.7	0.1	0.0	2.8	0.0	1.2	0.1	0.0	0.0		
Mouse_Neurons_hU6	1.1	0.1	0.1	0.1	1.1	0.2	7.7	1.8	0.1	0.1	0.4	2.1	1.3	1.0	0.1	0.5	0.0	0.1	1.0	2.4	3.0	4.2	1.9	0.4	1.5	0.7	1.3	0.6	1.5	0.7	0.0	2.7	0.0	0.3	1.1	0.2	0.0		
Neuro2A_hU6	4.5	0.1	0.2	0.0	1.2	0.0	3.8	0.0	0.0	0.4	2.2	1.0	3.5	0.4	4.3	2.3	0.1	4.1	3.3	3.9	7.7	1.0	0.4	4.9	0.4	2.0	3.4	1.8	3.4	0.4	1.1	0.5	0.1	1.4	1.1	0.0	0.0		