Figure 1

Capsid	Brain	Eyes	Lung	Heart	Liver	Pancreas	Spleen	Kidney	Front Limb
Bba.45	1.14E+05	5.62E+04	8.18E+06	2.69E+05	3.50E+07	2.46E+05	2.40E+05	1.54E+05	1.64E+04
	6.38E+04	3.15E+04	7.27E+06	1.25E+05	1.81E+07	1.69E+05	1.43E+05	9.09E+04	1.49E+04
Bba.46	2.01E+05	9.29E+04	8.73E+06	4.18E+05	1.90E+08	8.64E+05	3.94E+05	3.85E+05	4.14E+04
	8.32E+04	8.42E+04	4.90E+06	2.07E+05	2.30E+08	9.18E+05	3.50E+05	3.46E+05	1.16E+04
Bba.47	1.51E+05	7.63E+04	7.06E+06	2.97E+05	6.87E+07	4.79E+05	5.14E+05	2.62E+05	3.11E+04
	5.43E+04	2.72E+04	1.90E+06	1.37E+05	5.62E+07	1.62E+05	8.02E+04	1.07E+05	2.11E+04
Bba.49	2.93E+05	9.94E+04	9.30E+06	3.79E+05	1.73E+08	9.37E+05	3.14E+04	4.76E+05	1.65E+05
	3.09E+05	1.06E+05	3.11E+06	1.61E+05	2.64E+08	1.19E+06	8.33E+05	6.08E+05	1.26E+05
Bba.50	7.14E+04	4.63E+04	1.43E+06	1.15E+05	2.23E+07	1.27E+05	1.04E+05	8.85E+04	2.01E+04
	5.18E+04	4.49E+04	5.57E+05	3.39E+04	8.36E+06	4.32E+04	1.33E+04	5.76E+04	2.42E+04
Bba.51	1.65E+05	7.31E+04	1.33E+07	2.86E+05	4.15E+07	3.97E+05	2.19E+05	2.04E+05	5.97E+04
	5.67E+04	3.54E+04	4.31E+06	1.07E+05	2.03E+07	1.02E+06	9.78E+04	5.68E+04	5.30E+04

Capsid	Quadriceps	Gastrocnemius	Tibialis Anterior	Diaphragm	Tongue	Skin	Masseter MS	Lymph Nodes	Soleus
Bba.45	8.99E+04	2.16E+05	5.43E+04	3.02E+05	8.17E+04	6.34E+04	3.73E+04	5.51E+05	1.91E+04
	5.25E+04	1.53E+05	4.61E+04	1.82E+05	5.69E+04	3.72E+04	2.24E+04	3.63E+05	1.12E+04
Bba.46	2.01E+06	2.06E+06	1.66E+06	5.36E+05	7.97E+04	1.30E+05	4.57E+04	4.80E+05	6.68E+04
	1.59E+06	1.45E+06	1.57E+05	3.35E+05	5.13E+04	9.52E+04	1.73E+04	2.49E+05	6.88E+04
Bba.47	1.49E+06	3.41E+06	1.88E+05	6.09E+05	1.49E+05	1.43E+05	6.88E+04	7.64E+05	8.98E+04
	1.52E+06	3.24E+06	1.80E+05	4.00E+05	1.09E+05	1.14E+05	2.69E+04	2.20E+05	8.91E+04
Bba.49	1.13E+07	6.32E+06	8.79E+05	1.35E+06	1.52E+05	2.43E+05	1.28E+05	1.09E+06	1.68E+05
	6.06E+06	2.70E+06	9.40E+05	7.73E+05	5.83E+04	5.40E+04	4.00E+04	6.45E+05	1.42E+05
Bba.50	1.92E+06	2.44E+06	7.94E+04	1.37E+05	1.88E+05	7.42E+04	2.34E+04	1.18E+05	2.42E+04
	3.00E+06	8.57E+05	5.74E+04	4.95E+04	9.97E+04	1.88E+04	1.69E+04	4.21E+04	1.17E+04
Bba.51	2.72E+06	3.15E+06	1.23E+05	3.85E+05	1.30E+05	1.46E+05	7.69E+04	5.13E+05	5.32E+04
	1.67E+06	3.22E+06	7.77E+04	1.40E+05	5.05E+04	1.00E+05	3.79E+04	2.63E+05	3.70E+04

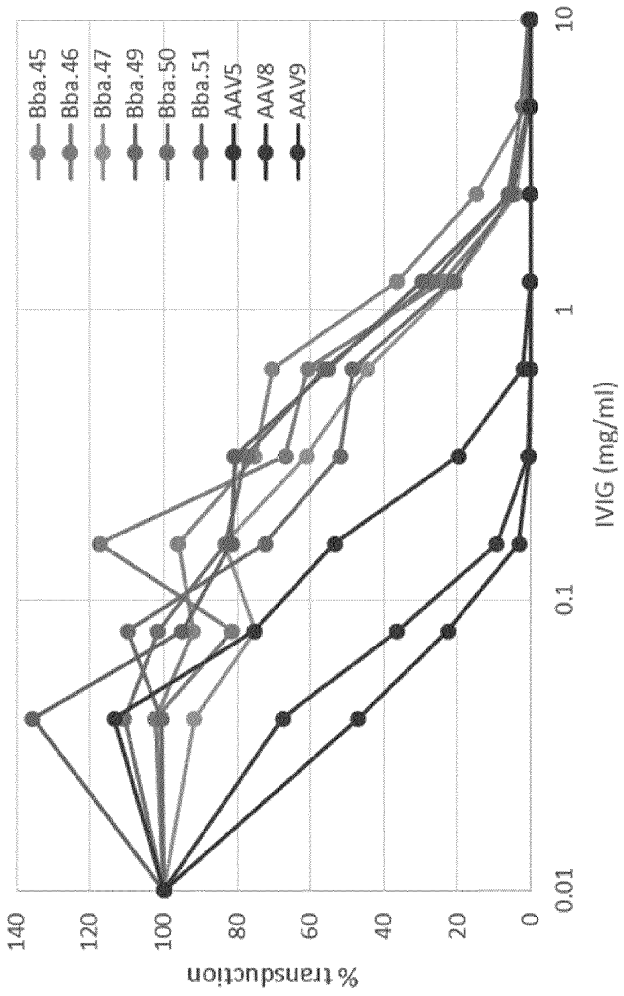

Bba.45
Bba.46
Bba.47
Bba.49
Bba.50
Bba.51
AAV5
AAV8
AAV9
% transduction
140
120
100
80
60
40
20
0
0.01
0.1
1
10
IVIG (mg/ml)

Figure 2

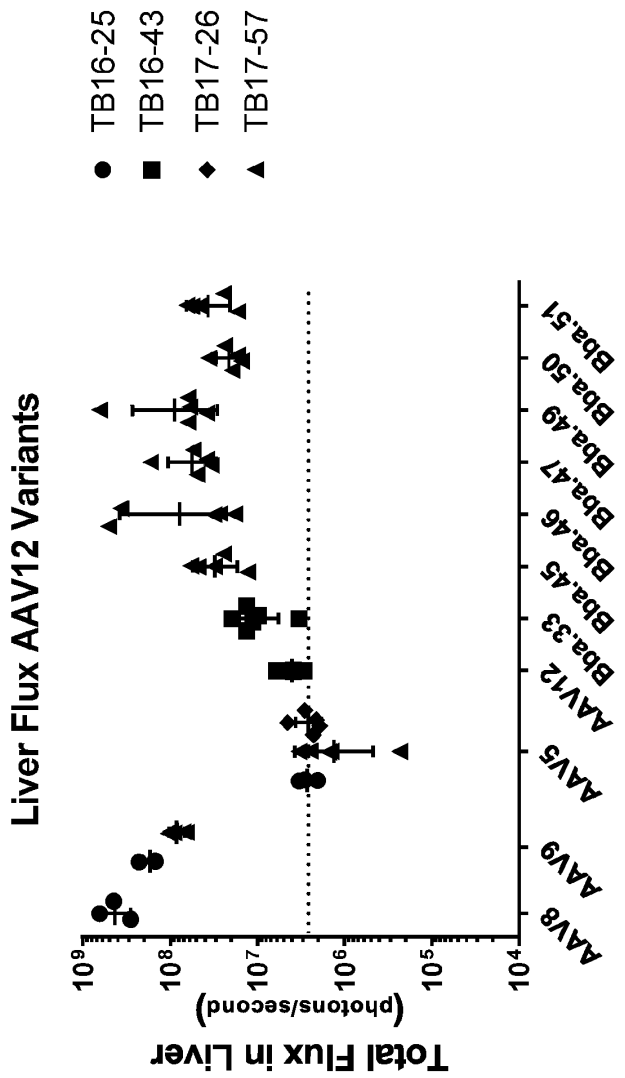

Liver Flux AAV12 Variants
TB16-25
TB16-43
TB17-26
TB17-57
Total Flux in Liver
(photons/second)
10^9
10^8
10^7
10^6
10^5
10^4
AAV8
AAV9
AAV5
AAV12
Bba.33
Bba.45
Bba.46
Bba.47
Bba.49
Bba.50
Bba.51

Figure 3

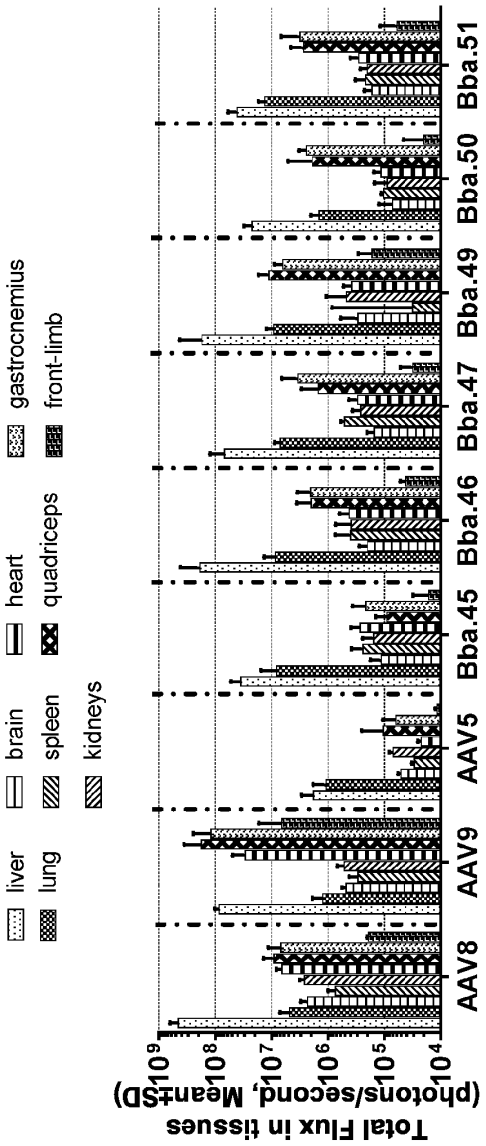

liver
lung
brain
spleen
heart
quadriceps
gastrocnemius
front-limb
kidneys
Total Flux in tissues
(photons/second, Mean±SD)
10^9
10^8
10^7
10^6
10^5
10^4
AAV8
AAV9
AAV5
Bba.45
Bba.46
Bba.47
Bba.49
Bba.50
Bba.51

Figure 4

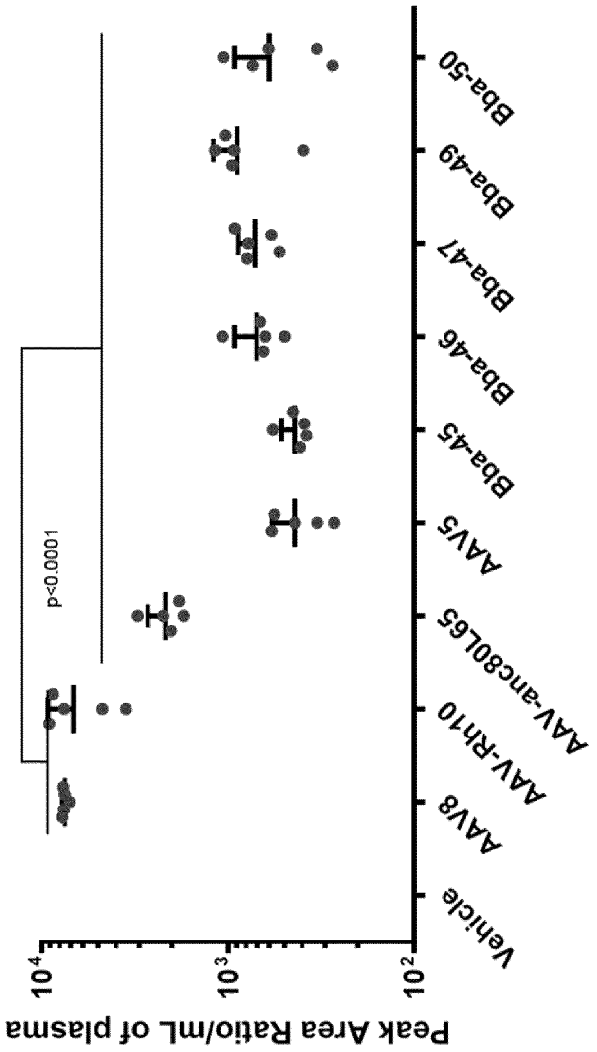

Peak Area Ratio/mL of plasma
10^4
10^3
10^2
p<0.0001
Vehicle
AAV8
AAV-Rh10
AAV-anc80L65
AAV5
Bba-45
Bba-46
Bba-47
Bba-49
Bba-50

Figure 5

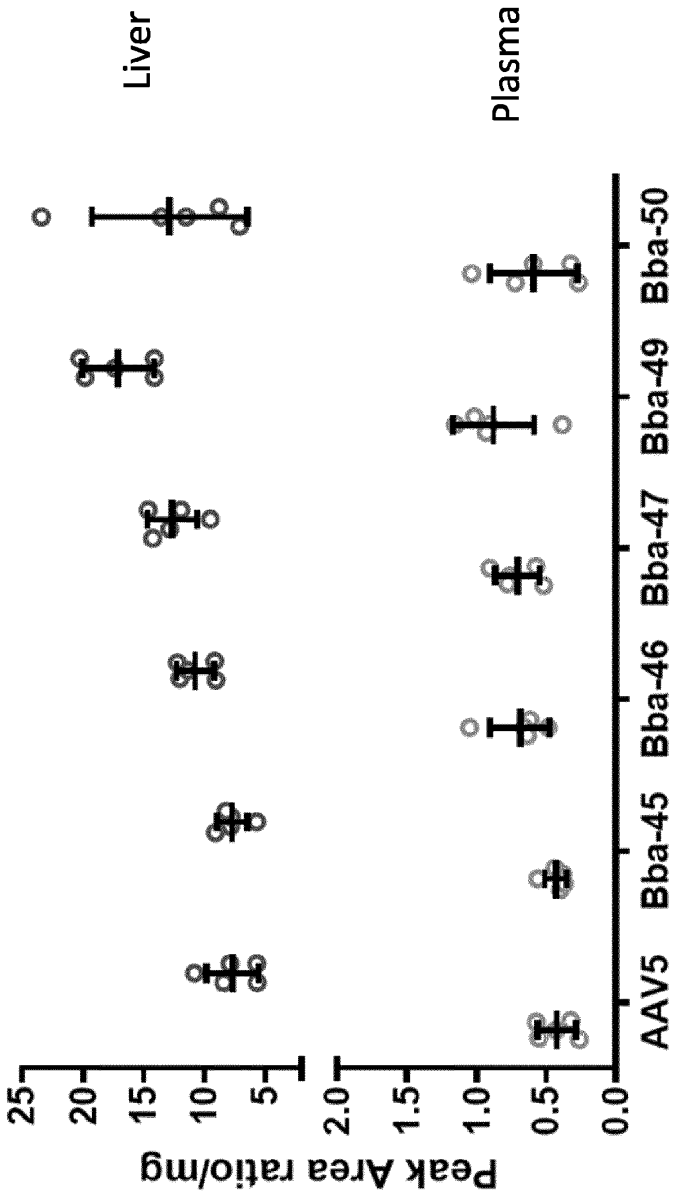

Liver
Plasma
Peak Area ratio/mg
25
20
15
10
5
2.0
1.5
1.0
0.5
0.0
AAV5
Bba-45
Bba-46
Bba-47
Bba-49
Bba-50

Figure 6

Figure 7A

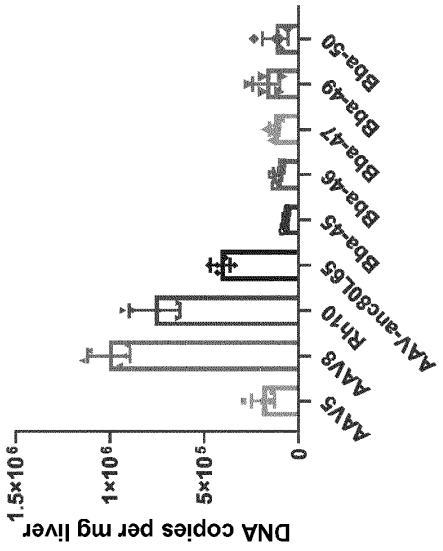


Figure 7B

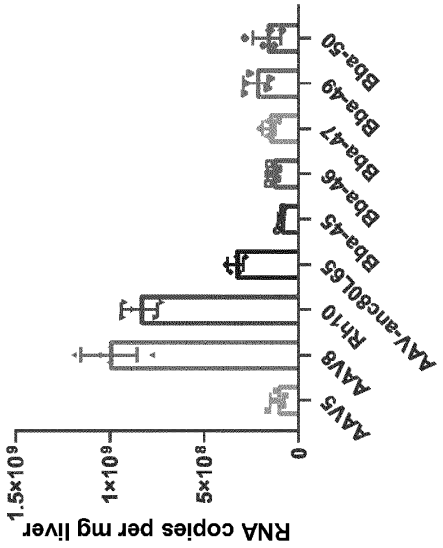


Figure 7C

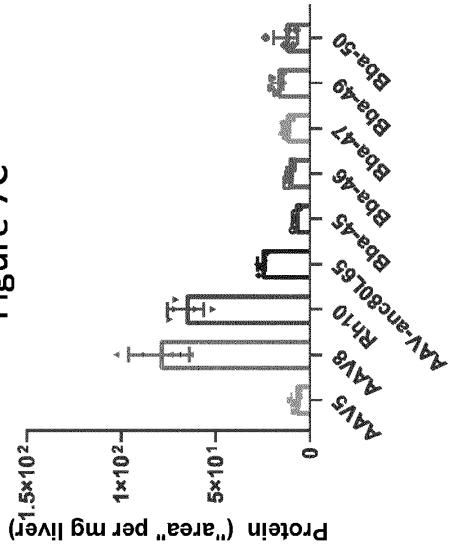


Figure 8B

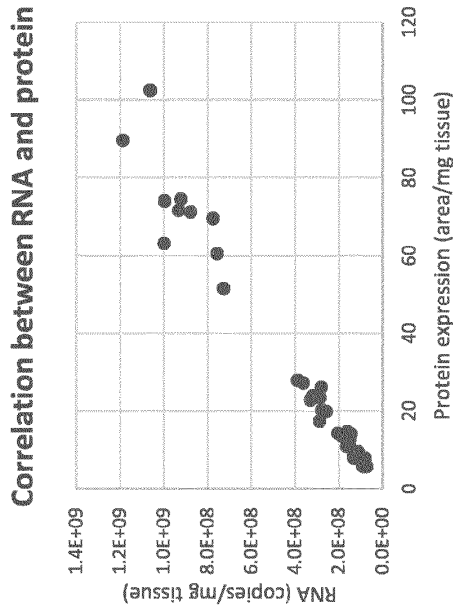
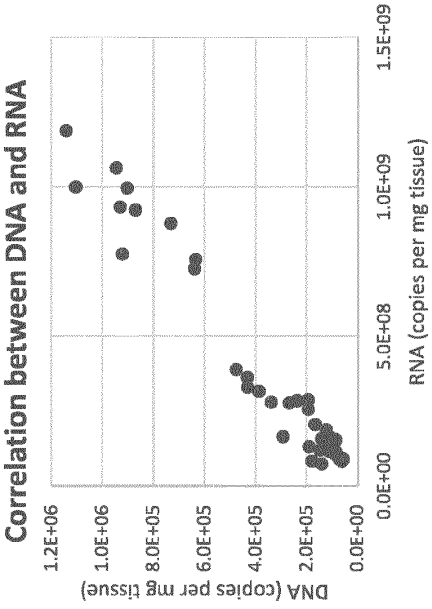


Figure 8A



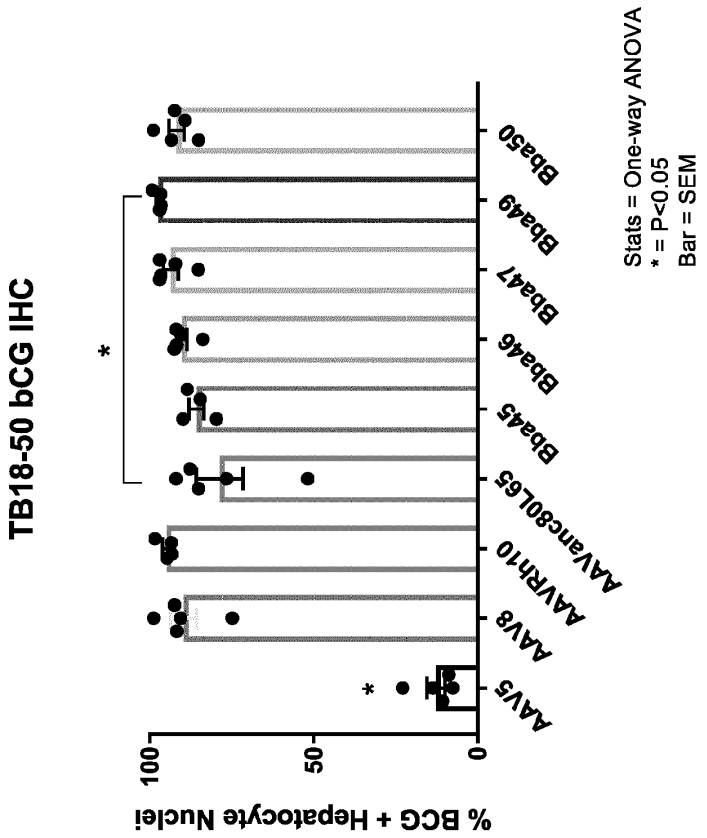

TB18-50 bCG IHC
% BCG + Hepatocyte Nuclei
100
50
0
AAV5
AAV8
AAVRh10
AAVanc80L65
BbaA5
BbaA6
BbaA7
BbaA9
BbaA50
*
*
Stats = One-way ANOVA
* = P<0.05
Bar = SEM

Figure 9

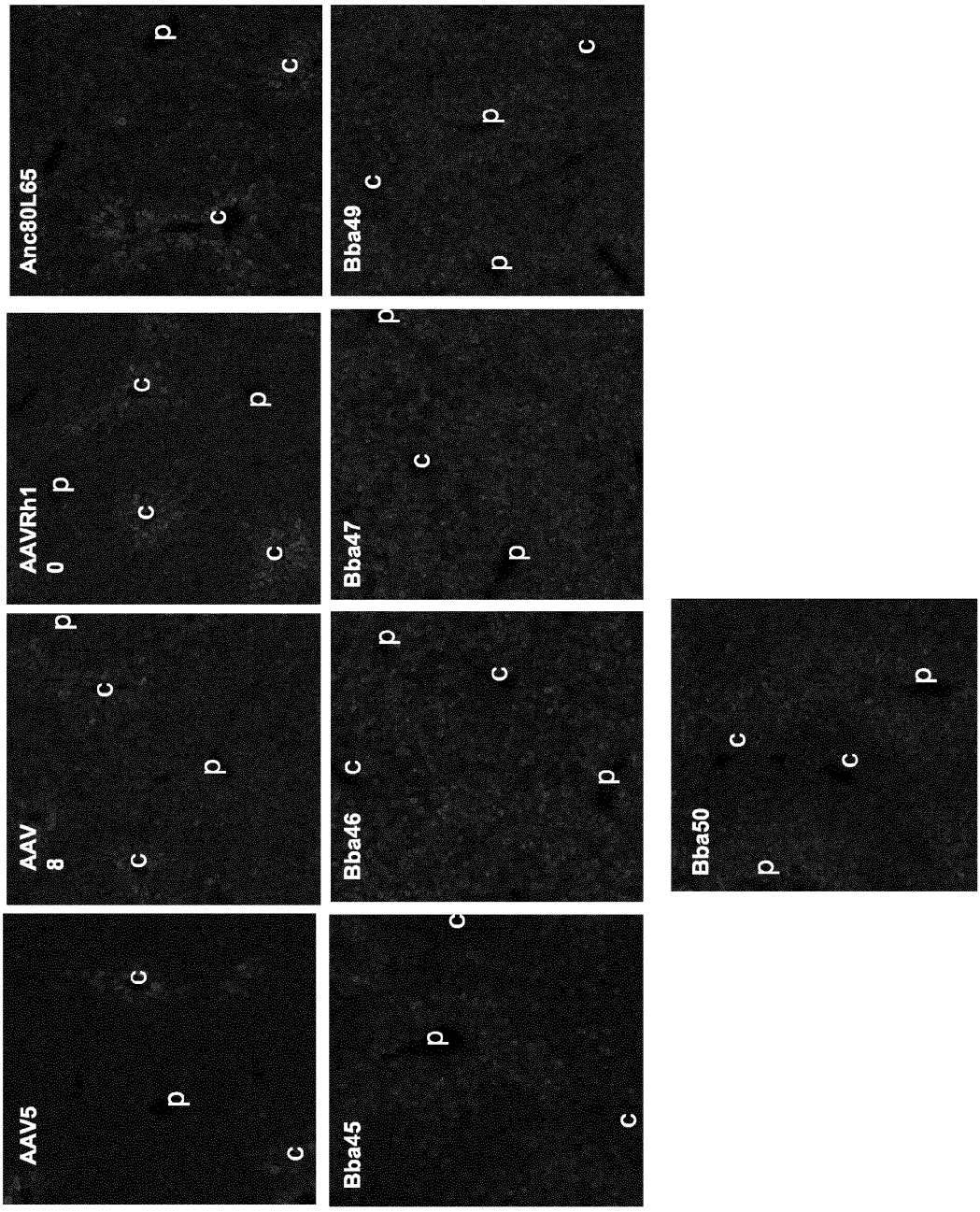
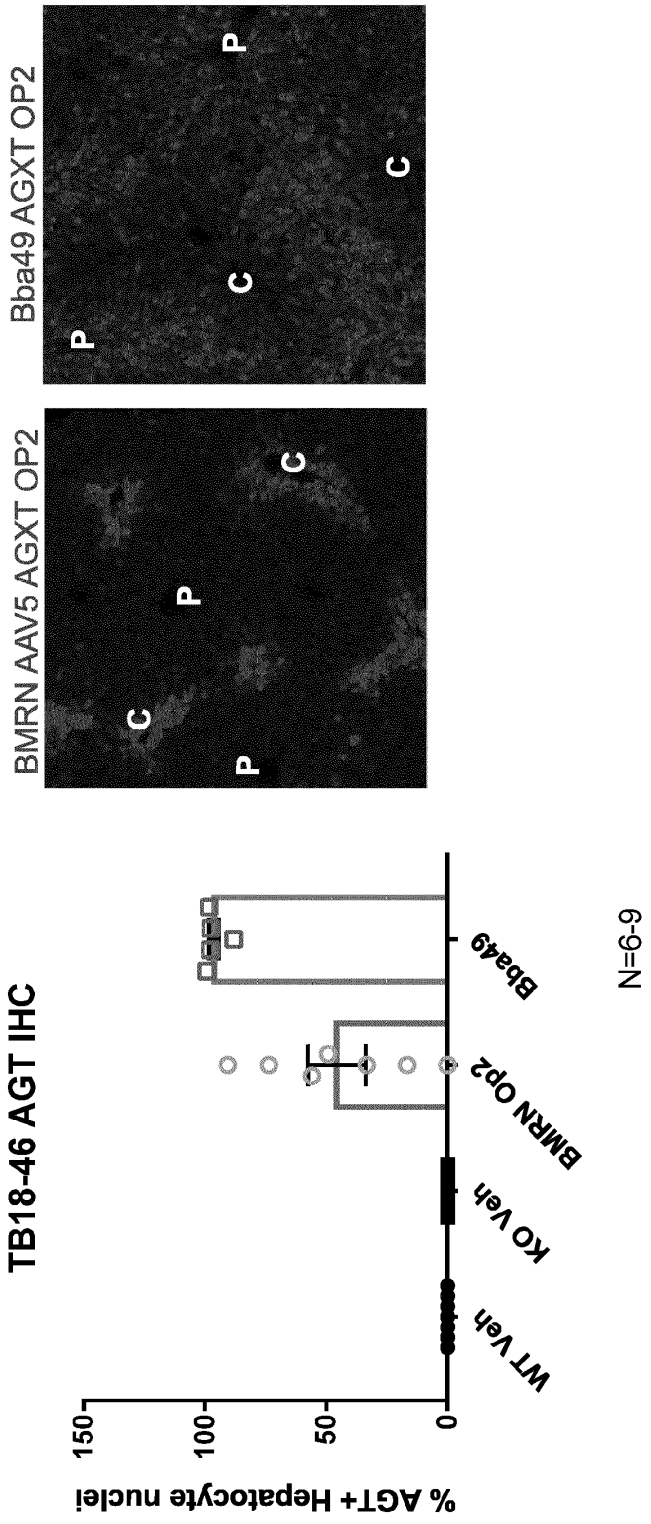


Figure 10

Figure 11


Bba49 AGXT OP2
BMRN AAV5 AGXT OP2
P
C
TB18-46 AGT IHC
% AGT+ Hepatocyte nuclei
150
100
50
0
WT Veh
KO Veh
BMRN OP2
Bba49
N=6-9