

**Supplemental Table S1.** RT-qPCR results for transgene ET-1 gene expression.

Sprague Dawley rats recieved  $3.2 \times 10^{10}$  vg/eye AAV2/2-CAG-mEDN1-WPRE (AAV-ET-1, n=22) or vehicle (n=8) on day 0, delivered intravitreally to the right eye. Contralateral eyes were left untreated. Transgene mouse ET-1 gene (mEDN1) expression was measured using RT-qPCR on retinal tissue from right (DEX) treated and left (SIN) untreated eyes collected on different days after the injection.

Sample#		mean CT		mean CT		ΔCT		ΔΔCT		Fold change		
		Transgene (mouse ET-1)		Reference gene (B-actin)		Normalized Transgene (mouse ET-1)						
		DEX	SIN	DEX	SIN	DEX	SIN	DEX	SIN	DEX	SIN	
AAV-ET-1	Day 3	1	22.79	34.05	16.56	17.55	6.22	16.50				
		2	23.42	33.85	15.82	16.87	7.60	16.99				
		3	24.24	31.01	16.95	17.48	7.29	13.53				
		4	22.69	32.03	16.69	17.23	6.00	14.80				
		5	22.76	33.18	15.74	16.90	7.01	16.28				
		6	21.55	34.38	16.12	17.73	5.44	16.65				
	Average:		22.91	33.08	16.31	17.29	6.59	15.79	-9.20	0.00	586.72	1.00
	Day 8	7	20.92	34.88	16.84	17.59	4.08	17.29				
		8	21.07	34.21	16.98	17.60	4.09	16.61				
		9	21.27	35.08	17.42	17.67	3.85	17.41				
		10	21.74	34.73	17.03	17.56	4.71	17.17				
		11	24.31	33.66	16.98	16.98	7.33	16.68				
		12	22.55	34.68	16.73	17.51	5.82	17.17				
	Average:		21.98	34.54	17.00	17.49	4.98	17.05	-12.07	0.00	4,309	1.00
	Day 22	13	17.15	33.65	17.54	17.56	-0.39	16.08				
		14	17.44	34.26	17.67	17.57	-0.23	16.70				
		15	18.32	34.25	17.60	17.28	0.73	16.97				
		16	17.49	33.32	17.32	17.67	0.16	15.65				
		17	18.67	33.28	17.93	18.04	0.74	15.24				
	Average:		17.81	33.75	17.61	17.63	0.20	16.13	-15.93	0.00	62,245	1.00
	Day 50	18	16.56	34.30	17.18	17.49	-0.62	16.81				
		19	16.32	32.20	17.41	17.15	-1.08	15.05				
		20	16.62	28.64	16.94	16.56	-0.32	12.08				
		21	17.03	33.18	17.27	17.55	-0.23	15.64				
		22	16.68	31.40	17.22	17.55	-0.54	13.86				
	Average:		16.64	31.95	17.20	17.26	-0.56	14.69	-15.25	0.00	38,865	1.00
Vehicle	Day 3	23	33.17	34.11	16.83	16.99	16.34	17.12				
		24	34.12	33.72	17.17	17.09	16.95	16.63				
		Average:	33.64	33.92	17.00	17.04	16.65	16.87	-0.23	0.00	1.17	1.00
	Day 8	25	33.35	34.00	16.42	16.82	16.92	17.18				
		26	32.84	32.42	16.88	16.10	15.96	16.32				
		Average:	33.09	33.21	16.65	16.46	16.44	16.75	-0.31	0.00	1.24	1.00
	Day 22	27	34.36	32.39	17.84	17.69	16.52	14.70				
		28	33.76	34.30	17.84	17.85	15.92	16.45				
		Average:	34.06	33.34	17.84	17.77	16.22	15.57	0.65	0.00	0.64	1.00
	Day 50	29	33.96	33.86	17.81	17.71	16.15	16.15				
30		32.02	32.90	17.53	16.97	14.49	15.93					
Average:		32.99	33.38	17.67	17.34	15.32	16.04	-0.72	0.00	1.65	1.00	

mean CT = Mean cycle threshold of three repetetive measurements

$\Delta$ CT (delta cycle threshold) = difference in expression between gene of interest, i.e. transgene, and a reference gene (B-actin)

$\Delta\Delta$ CT = difference between  $\Delta$ CT of treated right eye and untreated control left eye. This value is used to calculate fold change

Fold change = Ratio of transgene expression in treated eyes relative to untreated eyes. Calculated as  $2^{-\Delta\Delta CT}$