

Supplementary material.

Table S1. ETM_{30} (mean \pm SD), dosage and carrier (aqueous or oil) for drugs shown in Figure 1A.

Table S2. ETM_{30} (mean \pm SD), dosage and carrier (aqueous or oil) for drugs shown in in Figure 1D.

Table S3. PCR primers for genotyping *Oprm1*, *Abcb1a*, *Pde6b*, and *Htt* R6/2 mice.

Figure S1. Representative examples of eye movement recordings before and after IP injection of phosphate buffered saline. Data are shown

for four mice (labeled A-D). Each mouse was exposed to alternating 30 second intervals of a uniform grey stimulus or to moving black and white vertical stripes, as described for Figure 1A. Eye movements were recorded during the ~15 minutes immediately before and the ~15 minutes immediately after the IP injection. Three representative 90-second segments are shown for each mouse before (upper panels) and after (lower panels) the IP injection. OKR amplitude and timing show some variation from panel to panel, and on average several spontaneous eye movements are seen per 30-second rest period. IP injection of PBS has no effect on the OKR or the frequency of spontaneous eye movements. Scale bar: 0.5 mm.

Figure S2. Kaplan-Meier survival curve for *Abcb1a*^{+/+} and *Abcb1a*^{-/-} littermates following a single IP injection of 0.5 mg/kg ivermectin.

Drug	ETM Average	Standard deviation	Dose	N = Number of Mice	Solvent
preinjection	9.9	1.2	NA	9	NA
amantadine	2.4	0.8	75mg/kg	3	aqueous
baclofen	6.6	1.6	5 and 10mg/kg	7	aqueous
bromocriptine	6.6	1.4	45mg/kg	4	oil
buspirone	7.5	0.4	5mg/kg	3	aqueous
caffeine	5.3	1.2	75mg/kg	3	aqueous
carbamazepine	9.1	1.1	20mg/kg	3	oil
chloral hydrate	0.3	0.1	400mg/kg	3	aqueous
chlorpromazine	1.7	0.6	5mg/kg	3	aqueous and oil
clobazam	0.4	0.4	5mg/kg	4	oil
clozapine	0.1	0.2	12.5mg/kg	3	oil
clonidine	1.1	0.3	75mg/kg	3	aqueous
desipramine	4.3	0.5	25mg/kg	4	aqueous
fluoxetine	6.7	1.7	20mg/kg	3	aqueous
haloperidol	0.6	0.5	10mg/kg	3	oil
l-dopa	8.1	1.6	100mg/kg	2	aqueous
lithium	8	0.6	56mg/kg	3	aqueous
memantine	4.7	0.5	30mg/kg	3	aqueous
meprobamate	3.9	1.4	100mg/kg	2	oil
methylphenidate	9.9	1.6	20mg/kg	3	aqueous
methysergide	1.5	0.3	30mg/kg	3	aqueous
modafinil	8.4	0.3	30mg/kg	3	oil
mk-801	0.7	1.2	10mg/kg	3	aqueous
nicotine	9.5	0.6	10mg/kg	3	aqueous
nipicotic acid	8.3	1.8	225mg/kg	3	aqueous
pentylenetetrazol	0.7	0.5	50mg/kg	3	aqueous
perphenazine	2.4	1.8	5mg/kg	3	oil
phenobarbital	0.6	0.2	20mg/kg	2	aqueous
tacrine	4.2	4.3	10mg/kg	4	aqueous
trihexyphenidyl	14.3	1.2	40mg/kg	3	oil
valproic acid	10.1	0.5	150mg/kg	2	aqueous
vigabatrin	8.4	0.6	125mg/kg	3	aqueous

Cahill et al.
Supplemental Table 1

Drug	ETM Average	Stand. Deviation	Dose	N=Number of Mice	Solvent
preinjection	9.9	1.2	NA	9	NA
amphetamine	10.7	1.7	3mg/kg	3	aqueous
anandamide	2.7	2.8	100mg/kg	2	oil
buprenorphine	9.1	1.9	10mg/kg	6	aqueous
cocaine	1.1	0.6	50mg/kg	4	aqueous
codeine	7.7	0.8	20mg/kg	4	aqueous
ethanol	5.5	1.5	1980mg/kg	4	aqueous
gp1a	7.5	0.6	25mg/kg	3	oil
ketamine	31.5	11.4	50mg/kg	4	aqueous
methadone	3	0.6	20mg/kg	3	aqueous
morphine	5	2	30,40,65mg/kg	5	aqueous
naloxone	8.9	1.8	60mg/kg	4	aqueous
phencyclidine	20	9.6	10mg/kg	6	aqueous
snc-80	1.5	1.5	60mg/kg	3	aqueous

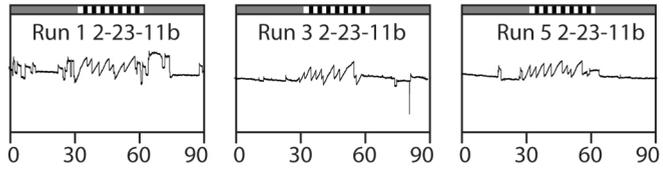
Cahill et al.
Supplemental Table 2

Primer Name	Gene	Allele	Primer Sequence
HC398	Abcb1a	wildtype	CTGGGATTTGCCTCAAATCCATTCT
HC399	Abcb1a	wildtype	TCCCCTGCCAGTTGTGAACAAGAAAC
HC389	Abcb1a	knockout	ATGTCCTGCGGGTAAATAGC
HC390	Abcb1a	knockout	CGTCAGGACATTGTTGGAGC
HC362	Oprm1	knockout	GCCAGAGGCCACTTGTGTAG
HC363	Oprm1	wildtype & knockout	ATCTTCACCCTCTGCACCAT
HC364	Oprm1	wildtype	TGCTGGGCTCCAGCTTTAAT
HC405	Htt	R6/2 transgene	ACGCAAGGCGCCGTGGGGGCTGCCG
HC406	Htt	R6/2 transgene	CGACTCGCGGCGCCGCTCAGCACCG
HC86	Pde6b	rd1	CATCCCACCTGAGCTCACAGAAAG
HC87	Pde6b	rd1	GCCTACAACAGAGGAGCTTCTAGC

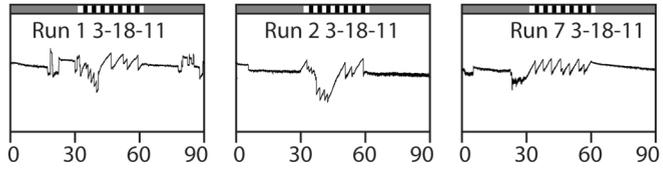
Cahill et al.
Supplemental Table 3

Eye Position

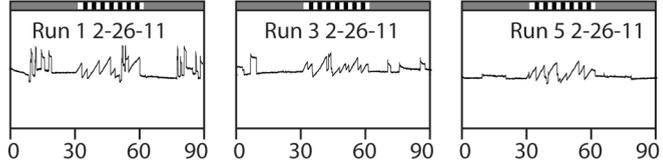
Pre - injection



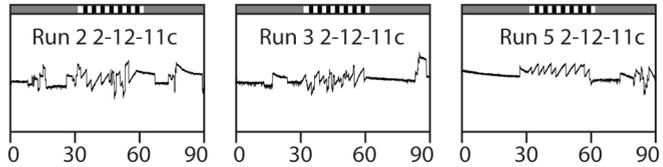
Pre - injection Mouse B



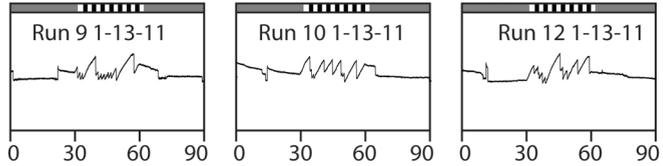
Pre - injection Mouse C



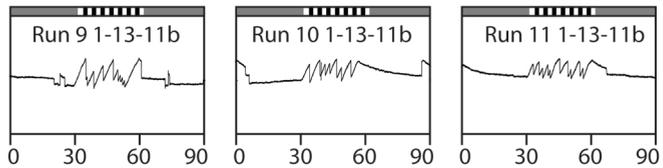
Pre - injection Mouse D



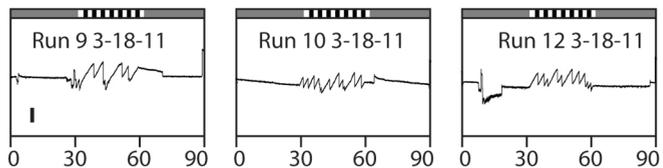
Post PBS injection Mouse A



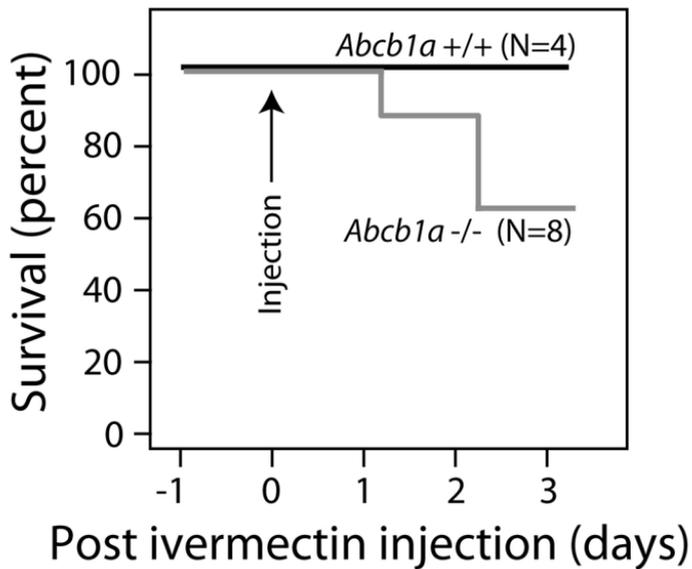
Post PBS injection Mouse B



Post PBS injection Mouse C



Time (seconds)



Cahill et al Figure S2