

**Supplemental Table 1: Antibodies**

<b>Antibody</b>	<b>Species</b>	<b>Manufacturer</b>	<b>Catalogue Number</b>	<b>Dilution/Remarks</b>
Anti-DAT (MAB369)	Rat	Millipore Sigma	MAB 369	1:1000
Anti-Rat-HRP	Goat	Thermo Fisher Scientific	31470	1:5000
Anti-TH	Rabbit	Cell Signaling Technology	2792	1:1000
Anti-pTH (Ser 31)	Rabbit	Cell Signaling Technology	3370	1:1000
Anti-pERK1/2	Rabbit	Cell Signaling Technology	9101	1:1000
Anti-ERK1/2	Rabbit	Cell Signaling Technology	9102	1:1000
Anti-Actin I-19	Goat	Santa Cruz Biotechnology	SC-1616	1:5000
Anti-Rabbit-HRP	Donkey	Thermo Fisher Scientific	A16023	1:5000

**Supplemental Table 2: Ratio of DA to its metabolites in striatum**

<b>Ratio</b>	<b>WT</b> (mean $\pm$ SEM)	<b>DAT T356M<sup>+/+</sup></b> (mean $\pm$ SEM)	<b>p</b>
DA/DOPAC	17.01 $\pm$ 0.55	9.547 $\pm$ 0.63	<0.0001
DA/3-MT	18.28 $\pm$ 2.175	5.047 $\pm$ 0.70	<0.0001
DA/HVA	9.149 $\pm$ 0.65	1.87 $\pm$ 0.17	<0.0001
5-HT/5-HIAA	3.115 $\pm$ 0.32	2.042 $\pm$ 0.26	0.9026

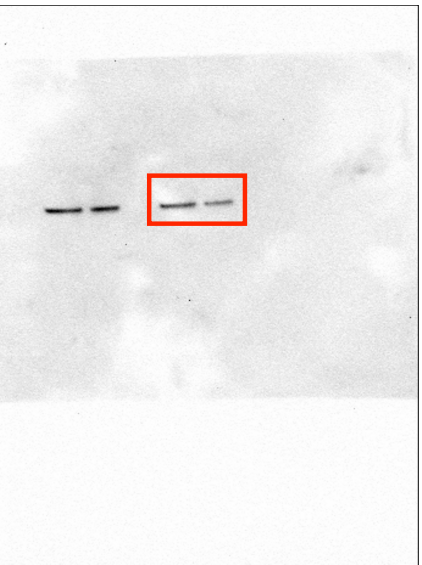
**Supplemental Table 3: Incidence of observed behaviors**

<b>Behavior</b>	<b>WT</b> (mean $\pm$ SEM)	<b>DAT T356M<sup>+/+</sup></b> (mean $\pm$ SEM)	<b>p</b>
Digging	28 $\pm$ 4	16 $\pm$ 3	0.0773
Grooming	14 $\pm$ 1	13 $\pm$ 1	0.9997
Rearing	71 $\pm$ 5	123 $\pm$ 9	<0.0001
Tail Flick	3 $\pm$ 1	4 $\pm$ 1	0.9999
Jumping	0 $\pm$ 1	1 $\pm$ 1	>0.9999
Climbing	11 $\pm$ 2	20 $\pm$ 4	0.3523

**Supplemental Table 4: Effect of ACT-01 on HEK-hDAT, HEK-hSERT and HEK-hNET cells**

<b>HEK-hDAT cells</b>	<b>ACT-01</b>	<b>Cocaine</b>
[ <sup>125</sup> I]RTI-55 Binding Ki (nM)	710 ± 170	595 ± 59
Hill coefficient	-0.87 ± 0.07	-1.06 ± 0.11
[ <sup>3</sup> H]Dopamine Uptake IC <sub>50</sub> (nM)	276 ± 36	370 ± 110
<b>HEK-hSERT cells</b>	<b>ACT-01</b>	<b>Cocaine</b>
[ <sup>125</sup> I]RTI-55 Binding Ki (nM)	>9100#	468 ± 49
Hill coefficient		-0.93 ± 0.04
[ <sup>3</sup> H]Serotonin Uptake IC <sub>50</sub> (nM)	>10 μM	286 ± 19
<b>HEK-hNET cells</b>	<b>ACT-01</b>	<b>Cocaine</b>
[ <sup>125</sup> I]RTI-55 Binding Ki (nM)	>9,800#	2,240 ± 320
Hill coefficient		-1.12 ± 0.15
[ <sup>3</sup> H]NE Uptake IC <sub>50</sub> (nM)	>6,000	203 ± 14

Full Unedited Gel for Figure 1D (Actin)

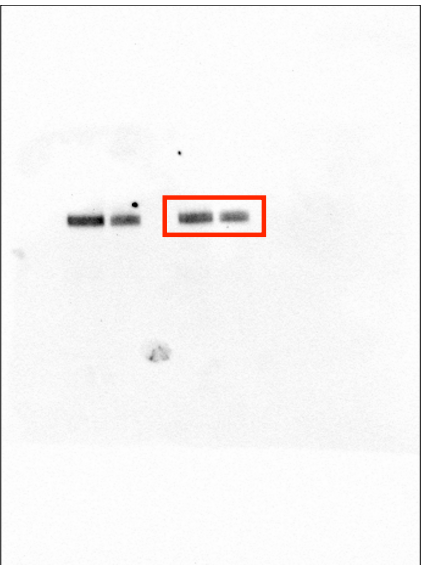


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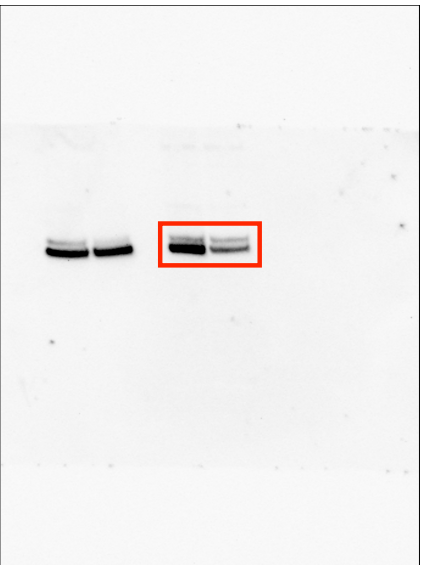
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### Full Unedited Gel for Figure 1D (DAT)

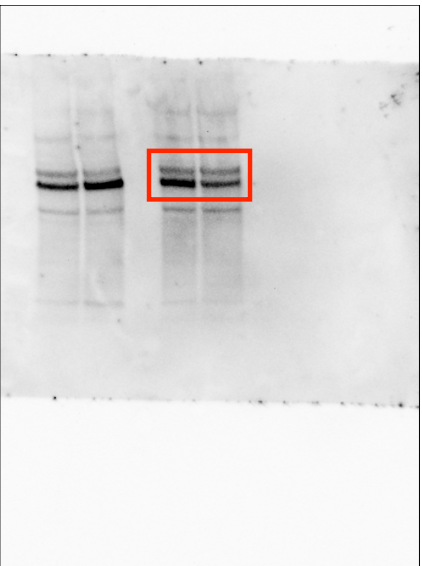


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Full Unedited Gel for Figure 2C (pTH)



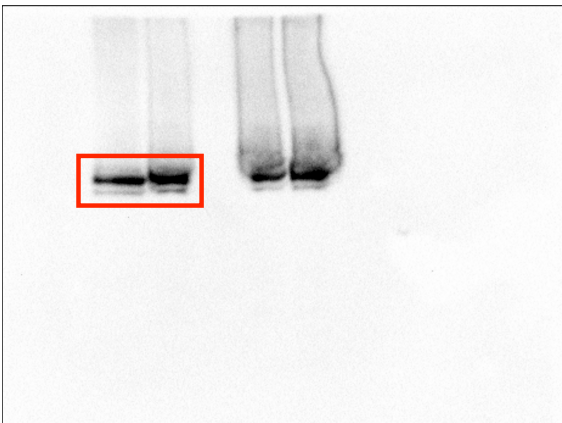
Full Unedited Gel for Figure 2C (TH)





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**Full Unedited Gel for Figure 2E (ERK)**



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**Full Unedited Gel for Figure 2E (pERK)**

