

Supplementary Table 1: Medial prefrontal cortex (top) & striatal (bottom) metabolite levels (mM) in adult male & female Tat-tg mice. Shown are means, standard deviations and Ns along with results from Two-way ANOVAs. Significant effects are shown in **bold text**.

MPFC	Old males	Old females	Young males	Young females	Age ANOVA $F; p$	Sex ANOVA $F; p$
Asp	3.14 ± 1.00 (10)	3.71 ± 1.35 (13)	3.76 ± 1.15 (10)	4.20 ± 1.49 (10)	$F_{(1,39)}=2.03$; NS	$F_{(1,39)}=1.66$; NS
GABA	1.86 ± 0.58 (10)	1.84 ± 0.42 (13)	2.20 ± 0.53 (10)	2.46 ± 0.74 (10)	$F_{(1,39)}=7.71$; $p=0.008$	$F_{(1,39)}=0.50$; NS
Gln	3.68 ± 0.70 (9)	3.32 ± 0.72 (12)	3.50 ± 0.85 (10)	3.85 ± 0.79 (10)	$F_{(1,37)}=0.56$; NS	$F_{(1,37)}=0.00$; NS
Glu	12.5 ± 1.96 (10)	12.4 ± 1.80 (13)	15.7 ± 1.26 (10)	14.24 ± 1.89 (10)	$F_{(1,39)}=21.6$; $p<0.001$	$F_{(1,39)}=2.00$; NS
GSH	2.71 ± 0.39 (10)	2.10 ± 0.45 (13)	2.48 ± 0.43 (10)	2.51 ± 0.59 (10)	$F_{(1,39)}=0.37$; NS	$F_{(1,39)}=4.09$; $p=0.050^*$
ml	6.72 ± 1.04 (10)	7.11 ± 1.57 (13)	7.39 ± 1.00 (10)	6.92 ± 1.47 (10)	$F_{(1,39)}=0.35$; NS	$F_{(1,39)}=0.01$; NS
NAA	9.06 ± 1.46 (10)	8.78 ± 1.12 (13)	9.27 ± 0.86 (10)	9.59 ± 1.02 (10)	$F_{(1,39)}=2.14$; NS	$F_{(1,39)}=0.00$; NS
Tau	14.8 ± 2.60 (10)	13.5 ± 2.23 (13)	17.3 ± 1.48 (10)	15.5 ± 2.04 (10)	$F_{(1,39)}=11.7$; $p=0.002$	$F_{(1,39)}=5.61$; $p=0.023$
tCho	2.51 ± 0.90 (10)	2.95 ± 0.76 (13)	3.09 ± 0.63 (10)	2.91 ± 0.88 (10)	$F_{(1,39)}=1.27$; NS	$F_{(1,39)}=0.29$; NS
tCr	9.98 ± 1.42 (10)	9.08 ± 1.01 (13)	10.1 ± 0.89 (10)	9.83 ± 0.89 (10)	$F_{(1,39)}=1.91$; NS	$F_{(1,39)}=3.41$; NS
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Asp	2.02 ± 1.11 (10)	2.20 ± 0.72 (11)	2.96 ± 1.05 (7)	2.26 ± 0.80 (5)	$F_{(1,29)}=2.18$; NS	$F_{(1,29)}=0.59$; NS
GABA	1.61 ± 0.66 (10)	2.10 ± 0.64 (13)	2.28 ± 0.52 (10)	2.41 ± 0.90 (10)	$F_{(1,38)}=5.33$; $p=0.027$	$F_{(1,38)}=2.20$; NS
Gln	4.07 ± 0.51 (9)	4.16 ± 1.63 (13)	3.67 ± 0.41 (10)	4.03 ± 0.60 (10)	$F_{(1,38)}=0.70$; NS	$F_{(1,38)}=0.51$; NS
Glu	8.22 ± 1.03 (10)	7.92 ± 1.74 (13)	8.70 ± 0.93 (10)	8.16 ± 0.82 (10)	$F_{(1,39)}=0.92$; NS	$F_{(1,39)}=1.20$; NS
GSH	1.99 ± 0.36 (10)	1.83 ± 0.60 (13)	2.26 ± 0.45 (10)	2.03 ± 0.60 (10)	$F_{(1,39)}=2.16$; NS	$F_{(1,39)}=1.46$; NS
ml	4.82 ± 0.73 (10)	4.75 ± 1.41 (13)	4.98 ± 1.14 (10)	5.47 ± 0.69 (10)	$F_{(1,39)}=1.81$; NS	$F_{(1,39)}=0.41$; NS
NAA	5.72 ± 0.53 (10)	5.41 ± 1.43 (13)	5.74 ± 0.63 (10)	5.92 ± 0.73 (10)	$F_{(1,39)}=0.81$; NS	$F_{(1,39)}=0.05$; NS
Tau	17.0 ± 1.15 (10)	14.9 ± 3.39 (13)	18.1 ± 1.52 (10)	17.2 ± 1.62 (10)	$F_{(1,39)}=6.37$; $p=0.016$	$F_{(1,39)}=4.92$; $p=0.033$
tCho	2.06 ± 0.36 (10)	2.37 ± 0.62 (13)	2.32 ± 0.37 (10)	2.35 ± 0.66 (10)	$F_{(1,39)}=0.53$; NS	$F_{(1,39)}=1.12$; NS
tCr	8.47 ± 0.57 (10)	7.55 ± 1.91 (13)	8.04 ± 0.95 (10)	8.02 ± 0.52 (10)	$F_{(1,39)}=0.00$; NS	$F_{(1,39)}=1.59$; NS

Legend: Asp = Aspartate; GABA = γ -aminobutyric acid; Gln = glutamine; Glu = glutamate; GSH = glutathione; mM = millimolar; ml = myo-inositol; MPFC = medial prefrontal cortex; NAA = N-acetylaspartate; NS = nonsignificant; Tau = taurine; tCho = choline + phosphocholine; tCr = creatine + phosphocreatine. *Age x Sex Interaction effect: $F_{(1,39)}=4.88$, $P=0.033$.