

Supplementary Materials

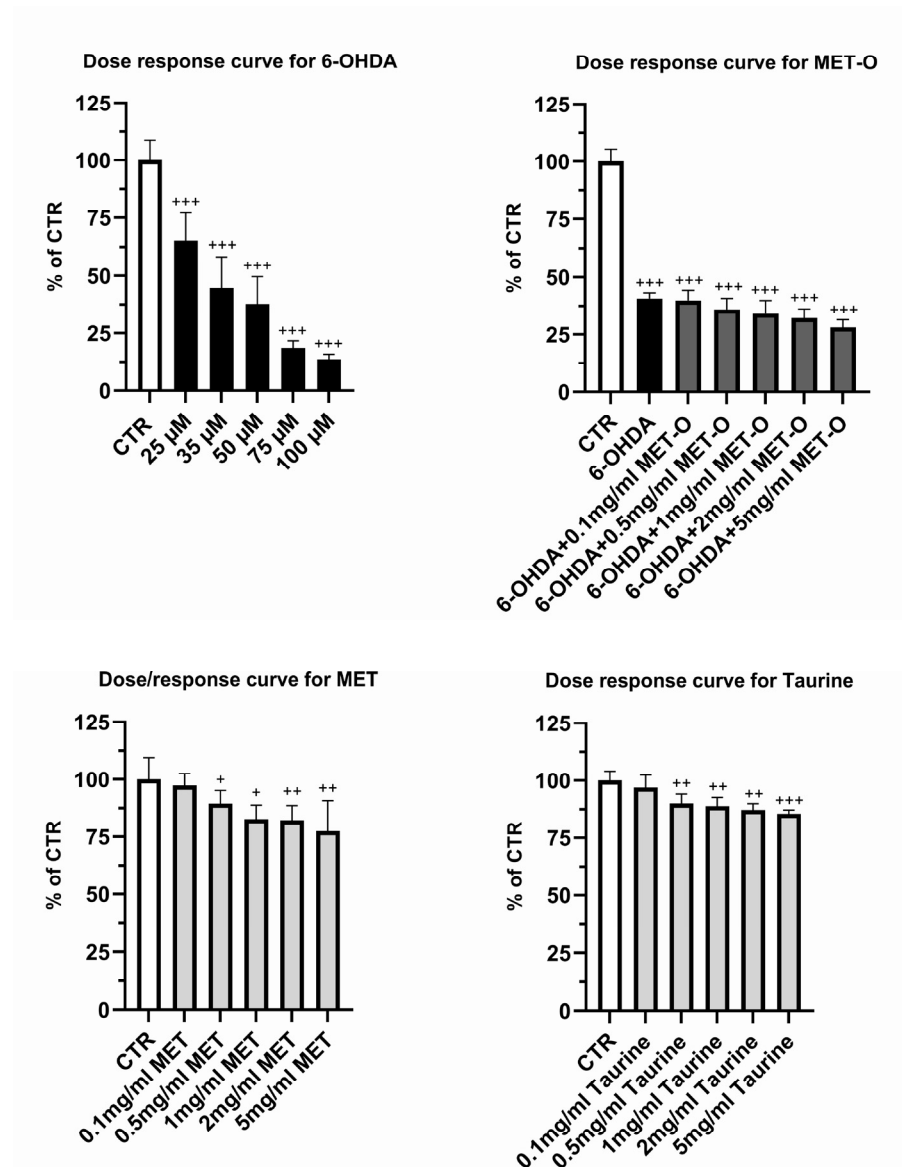


Figure S1. Dose response curve for Met, Met-O, taurine and 6-OHDA. Data are mean \pm SD of 3 different experiments. Data are expressed as % of CTR. +++ $p < 0.0001$; ++ $p < 0.005$; + $p < 0.05$ vs. CTR.

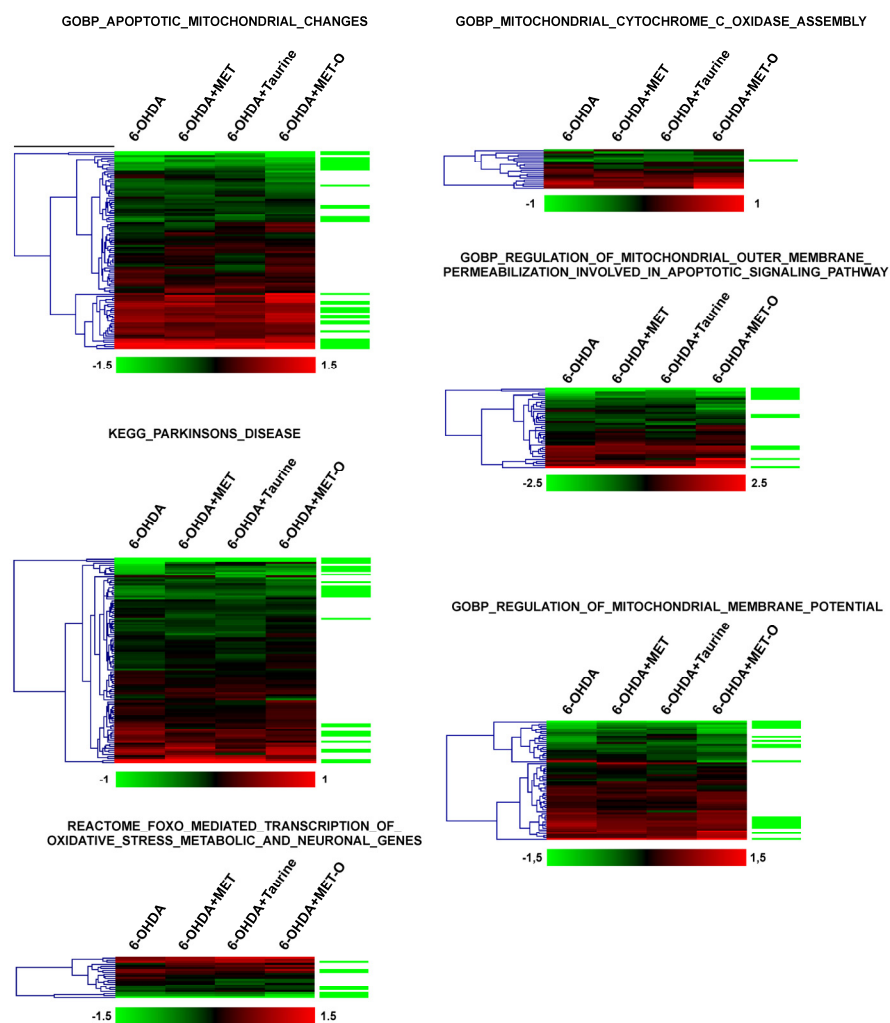


Figure S2. Heatmap of hierarchical clustering of the selected pathways. Color scale represents log₂ ratios of the expression levels in the indicated condition versus control. Color scale limits are indicated in the boxes below the respective heatmap.

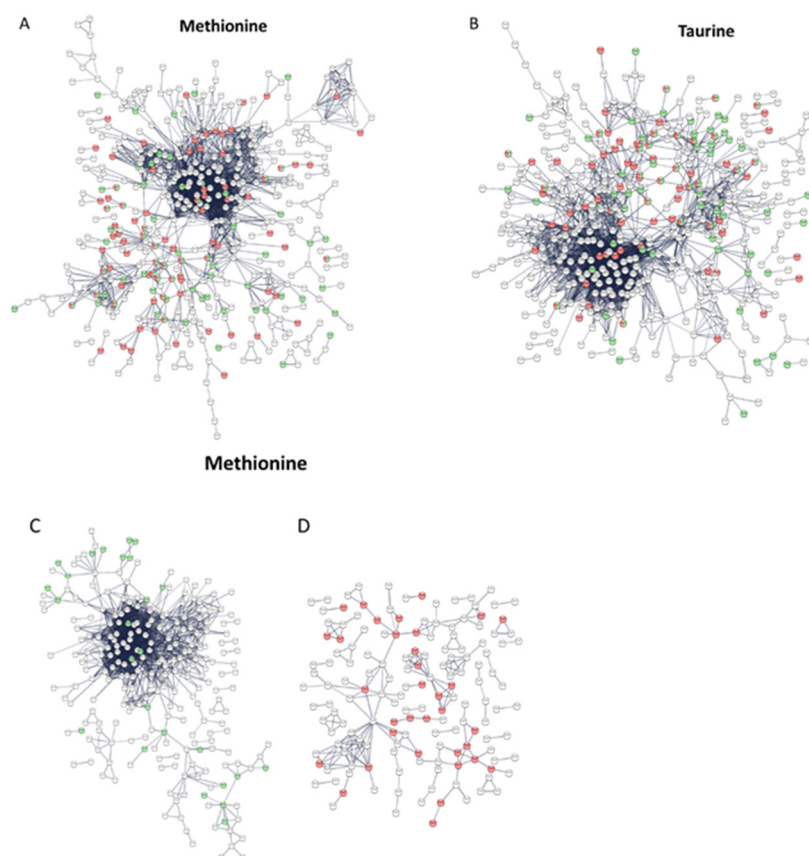


Figure S3. String protein network analysis. Upper panels. The analysis reveals that Methionine (A) and taurine (B) can modulate the expression of targets involved in apoptosis and cell death processes (red) and neurogenesis (green). Lower panels. Protein interactions associated with neurogenesis (green) and apoptosis/cell death (red) are mainly among the genes respectively down- (C) or up- (D) regulated by 6-OHDA and recovered by Methionine.

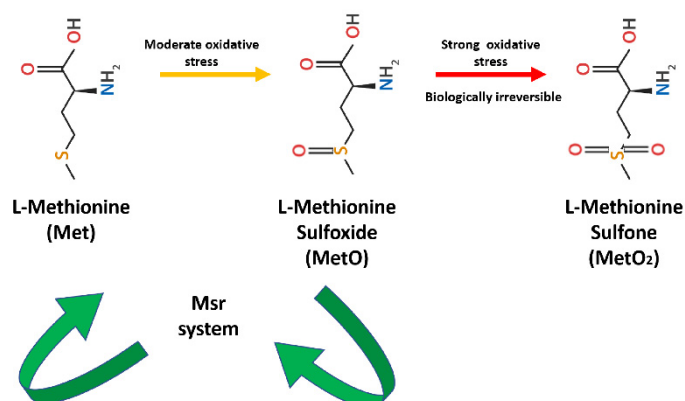


Figure S4. Schematic figure representative of the Msr system which reduce methionine sulfoxide to methionine repairing its antioxidant activity.

Table S1. Significance data relative to TMRM analyses (**Figure 9**) at different time points.

vs CTR						vs 6-OHDA					
0						0					
CTR vs. 6-OHDA	0	-0,1794 to 0,1794	No	ns	>0,9999	6-OHDA vs. CTR	0	-0,1794 to 0,1794	No	ns	>0,9999
CTR vs. 6-OHDA+MET	0	-0,1794 to 0,1794	No	ns	>0,9999	6-OHDA vs. 6-OHDA+MET	0	-0,1794 to 0,1794	No	ns	>0,9999
CTR vs. 6-OHDA+MET-O	0	-0,1794 to 0,1794	No	ns	>0,9999	6-OHDA vs. 6-OHDA+MET-O	0	-0,1794 to 0,1794	No	ns	>0,9999
CTR vs. 6-OHDA+TAU	0	-0,1794 to 0,1794	No	ns	>0,9999	6-OHDA vs. 6-OHDA+TAU	0	-0,1794 to 0,1794	No	ns	>0,9999
4						4					
CTR vs. 6-OHDA	0,6259	0,4465 to 0,8052	Yes	****	<0,0001	6-OHDA vs. CTR	-0,6259	-0,8052 to -0,4465	Yes	****	<0,0001
CTR vs. 6-OHDA+MET	0,2125	0,03315 to 0,3919	Yes	*	0,0151	6-OHDA vs. 6-OHDA+MET	-0,4133	-0,5927 to -0,2340	Yes	****	<0,0001
CTR vs. 6-OHDA+MET-O	0,4413	0,2619 to 0,6207	Yes	****	<0,0001	6-OHDA vs. 6-OHDA+MET-O	-0,1845	-0,3639 to -0,005153	Yes	*	0,042
CTR vs. 6-OHDA+TAU	0,1374	-0,04197 to 0,3168	No	ns	0,1799	6-OHDA vs. 6-OHDA+TAU	-0,4885	-0,6678 to -0,3091	Yes	****	<0,0001
8						8					
CTR vs. 6-OHDA	0,7037	0,5244 to 0,8831	Yes	****	<0,0001	6-OHDA vs. CTR	-0,7037	-0,8831 to -0,5244	Yes	****	<0,0001
CTR vs. 6-OHDA+MET	0,2207	0,04131 to 0,4001	Yes	*	0,0111	6-OHDA vs. 6-OHDA+MET	-0,483	-0,6624 to -0,3037	Yes	****	<0,0001
CTR vs. 6-OHDA+MET-O	0,5826	0,4033 to 0,7620	Yes	****	<0,0001	6-OHDA vs. 6-OHDA+MET-O	-0,1211	-0,3005 to 0,05829	No	ns	0,2738
CTR vs. 6-OHDA+TAU	0,2514	0,07200 to 0,4308	Yes	**	0,0031	6-OHDA vs. 6-OHDA+TAU	-0,4524	-0,6317 to -0,2730	Yes	****	<0,0001
12						12					
CTR vs. 6-OHDA	0,8434	0,6640 to 1,023	Yes	****	<0,0001	6-OHDA vs. CTR	-0,8434	-1,023 to -0,6640	Yes	****	<0,0001
CTR vs. 6-OHDA+MET	0,2387	0,05936 to 0,4181	Yes	**	0,0053	6-OHDA vs. 6-OHDA+MET	-0,6047	-0,7841 to -0,4253	Yes	****	<0,0001
CTR vs. 6-OHDA+MET-O	0,787	0,6076 to 0,9664	Yes	****	<0,0001	6-OHDA vs. 6-OHDA+MET-O	-0,05644	-0,2358 to 0,1229	No	ns	0,8458
CTR vs. 6-OHDA+TAU	0,2731	0,09374 to 0,4525	Yes	**	0,0012	6-OHDA vs. 6-OHDA+TAU	-0,5703	-0,7497 to -0,3909	Yes	****	<0,0001
16						16					
CTR vs. 6-OHDA	0,932	0,7527 to 1,111	Yes	****	<0,0001	6-OHDA vs. CTR	-0,932	-1,111 to -0,7527	Yes	****	<0,0001
CTR vs. 6-OHDA+MET	0,3723	0,1930 to 0,5517	Yes	****	<0,0001	6-OHDA vs. 6-OHDA+MET	-0,5597	-0,7391 to -0,3803	Yes	****	<0,0001
CTR vs. 6-OHDA+MET-O	0,8869	0,7075 to 1,066	Yes	****	<0,0001	6-OHDA vs. 6-OHDA+MET-O	-0,04518	-0,2246 to 0,1342	No	ns	0,9217
CTR vs. 6-OHDA+TAU	0,463	0,2836 to 0,6424	Yes	****	<0,0001	6-OHDA vs. 6-OHDA+TAU	-0,469	-0,6484 to -0,2897	Yes	****	<0,0001
24						24					
CTR vs. 6-OHDA	1,006	0,8262 to 1,185	Yes	****	<0,0001	6-OHDA vs. CTR	-1,006	-1,185 to -0,8262	Yes	****	<0,0001
CTR vs. 6-OHDA+MET	0,434	0,2546 to 0,6134	Yes	****	<0,0001	6-OHDA vs. 6-OHDA+MET	-0,5716	-0,7509 to -0,3922	Yes	****	<0,0001
CTR vs. 6-OHDA+MET-O	0,9713	0,7919 to 1,151	Yes	****	<0,0001	6-OHDA vs. 6-OHDA+MET-O	-0,03424	-0,2136 to 0,1451	No	ns	0,9694
CTR vs. 6-OHDA+TAU	0,5068	0,3274 to 0,6862	Yes	****	<0,0001	6-OHDA vs. 6-OHDA+TAU	-0,4988	-0,6781 to -0,3194	Yes	****	<0,0001

TAU=taurine.