

Supplementary Table 1

The control groups from the experiments on the effects of the polyphenols under manganese(II) chloride tetrahydrate exposure. The table presents the influence of *trans*-resveratrol (RV), quercetin (QT) (**A, B**), *trans*-resveratrol 3-O- β -D-glucuronide (RV-glucuronide), and quercetin 3-O- β -D-glucuronide (QT-glucuronide) (**C, D**) at various concentrations (5, 10, 20, and 30 μ M) on LDH release (**A, C**) and MTT reduction (**B, D**) in SH-SY5Y cells. The data were obtained from 1-5 independent experiments with $n = 5-10$ in each of them. The results were calculated as a percentage of the control and are presented as the means $\pm$ standard errors of the means (SEM). * $p < 0.05$ vs. control

A

Control groups to Fig. 1A								
LDH release								
control	RV				QT			
	5	10	20	30	5	10	20	30
100.00 $\pm$ 4.64	95.31 $\pm$ 9.40	102.85 $\pm$ 4.75	124.78 $\pm$ 14.34	127.79 $\pm$ 3.98	96.73 $\pm$ 8.91	106.13 $\pm$ 9.76	161.59 $\pm$ 17.87*	150.86 $\pm$ 16.71*

B

Control groups to Fig. 1B								
MTT reduction								
control	RV				QT			
	5	10	20	30	5	10	20	30
100 $\pm$ 1.32	92.34 $\pm$ 3.35	88.63 $\pm$ 4.87*	88.86 $\pm$ 2.99*	86.53 $\pm$ 4.50*	97.36 $\pm$ 3.32	100.35 $\pm$ 1.50	88.16 $\pm$ 8.89*	83.42 $\pm$ 2.30*

C

Control groups to Fig. 1C								
LDH release								
control	RV-glucuronide				QT-glucuronide			
	5	10	20	30	5	10	20	30
100.00 $\pm$ 3.17	112.80 $\pm$ 10.27	87.53 $\pm$ 2.89	95.61 $\pm$ 1.91	87.98 $\pm$ 2.38	100.32 $\pm$ 2.08	99.54 $\pm$ 1.50	100.76 $\pm$ 9.18	107.10 $\pm$ 2.27

D

Control groups to Fig. 1D								
MTT reduction								
control	RV-glucuronide				QT-glucuronide			
	5	10	20	30	5	10	20	30
100.00 $\pm$ 1.73	98.28 $\pm$ 4.49	106.23 $\pm$ 2.86	102.03 $\pm$ 3.28	115.35 $\pm$ 5.09*	108.31 $\pm$ 2.57*	111.49 $\pm$ 2.08*	110.30 $\pm$ 2.71*	109.06 $\pm$ 3.33*

Supplementary Table 2

The control groups from the experiments on the effects of the polyphenols under aluminium L-lactate exposure. The table presents the influence of *trans*-resveratrol (RV), quercetin (QT) (**A**, **B**), *trans*-resveratrol 3-O- β -D-glucuronide (RV-glucuronide), and quercetin 3-O- β -D-glucuronide (QT-glucuronide) (**C**, **D**) at various concentrations (5, 10, 20, and 30 μ M) on LDH release (**A**, **C**) and MTT reduction (**B**, **D**) in SH-SY5Y cells. The data were obtained from 1-5 independent experiments with $n = 5-8$ in each of them. The results were calculated as a percentage of the control and are presented as the means $\pm$ standard errors of the means (SEM).
* $p < 0.05$ vs. control

A

Control groups to Fig. 2A								
LDH release								
control	RV				QT			
	5	10	20	30	5	10	20	30
100.00 $\pm$ 3.31	92.39 $\pm$ 6.68	88.00 $\pm$ 7.05	125.35 $\pm$ 11.68	129.29 $\pm$ 10.40	103.88 $\pm$ 4.19	91.77 $\pm$ 7.79	166.84 $\pm$ 37.02*	156.49 $\pm$ 22.76*

B

Control groups to Fig. 2B								
MTT reduction								
control	RV				QT			
	5	10	20	30	5	10	20	30
100.00 $\pm$ 1.76	98.01 $\pm$ 5.03	100.89 $\pm$ 3.46	80.85 $\pm$ 4.61*	88.80 $\pm$ 3.73*	82.21 $\pm$ 2.93*	87.05 $\pm$ 2.34*	86.12 $\pm$ 4.21*	80.74 $\pm$ 3.02*

C

Control groups to Fig. 2C								
LDH release								
control	RV-glucuronide				QT-glucuronide			
	5	10	20	30	5	10	20	30
100.00 $\pm$ 4.15	147.86 $\pm$ 11.14*	85.37 $\pm$ 7.69	84.35 $\pm$ 8.21	95.72 $\pm$ 17.49	105.15 $\pm$ 4.29	87.69 $\pm$ 5.92	85.66 $\pm$ 7.38	103.66 $\pm$ 6.26

D

Control groups to Fig. 2D								
MTT reduction								
control	RV-glucuronide				QT-glucuronide			
	5	10	20	30	5	10	20	30
100.00 $\pm$ 1.59	88.91 $\pm$ 3.53	96.58 $\pm$ 3.13	92.86 $\pm$ 3.61	98.13 $\pm$ 6.63	102.74 $\pm$ 3.24	104.54 $\pm$ 3.17	105.14 $\pm$ 2.88	105.54 $\pm$ 3.01

Supplementary Table 3

The control groups from the experiments on the effects of the polyphenols under manganese(II) chloride tetrahydrate exposure. The table presents the influence of *trans*-resveratrol (RV), quercetin (QT) (**A**), *trans*-resveratrol 3-O- β -D-glucuronide (RV-glucuronide), and quercetin 3-O- β -D-glucuronide (QT-glucuronide) (**B**) at various concentrations (5, 10, 20, and 30 μ M) on caspase-3 activity in SH-SY5Y cells. The data were obtained from 1-3 independent experiments with $n = 3$ in each of them. The results were calculated as a percentage of the control and are presented as the means $\pm$ standard errors of the means (SEM)

A

Control groups to Fig. 3A								
Caspase-3 activity								
control	RV				QT			
	5	10	20	30	5	10	20	30
100.00 $\pm$ 2.37	98.39 $\pm$ 0.81	99.48 $\pm$ 5.70	96.01 $\pm$ 1.26	92.64 $\pm$ 1.23	94.73 $\pm$ 0.56	96.37 $\pm$ 5.00	89.18 $\pm$ 2.11	90.74 $\pm$ 0.42

B

Control groups to Fig. 3B								
Caspase-3 activity								
control	RV-glucuronide				QT-glucuronide			
	5	10	20	30	5	10	20	30
100.00 $\pm$ 0.85	110.10 $\pm$ 0.80	102.74 $\pm$ 1.98	105.21 $\pm$ 1.86	107.02 $\pm$ 1.91	109.59 $\pm$ 0.94	102.07 $\pm$ 0.91	104.74 $\pm$ 1.42	103.50 $\pm$ 1.41

Supplementary Table 4

The control groups from the experiments on the effects of the polyphenols under aluminium L-lactate exposure. The table presents the influence of *trans*-resveratrol (RV), quercetin (QT) (**A**), *trans*-resveratrol 3-O- β -D-glucuronide (RV-glucuronide), and quercetin 3-O- β -D-glucuronide (QT-glucuronide) (**B**) at various concentrations (5, 10, 20, and 30 μ M) on caspase-3 activity in SH-SY5Y cells. The data were obtained from 1-3 independent experiments with $n = 3$ in each of them. The results were calculated as a percentage of the control and are presented as the means $\pm$ standard errors of the means (SEM)

A

Control groups to Fig. 4A								
Caspase-3 activity								
control	RV				QT			
	5	10	20	30	5	10	20	30
100.00 ± 0.94	100.16 ± 1.28	98.33 $\pm$ 5.56	99.42 $\pm$ 0.68	97.99 $\pm$ 1.38	97.28 $\pm$ 1.81	99.74 $\pm$ 4.15	100.29 ± 0.99	95.58 $\pm$ 0.56

B

Control groups to Fig. 4B								
Caspase-3 activity								
control	RV-glucuronide				QT-glucuronide			
	5	10	20	30	5	10	20	30
100.00 ± 1.25	103.62 ± 0.12	101.56 ± 0.88	97.76 $\pm$ 1.21	97.95 $\pm$ 2.12	101.62 ± 0.71	97.33 $\pm$ 0.50	97.20 $\pm$ 0.96	96.70 $\pm$ 1.42