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Article

Impact of Melatonin Deficit on Emotional Status and Oxidative Stress-Induced Changes in Sphingomyelin and Cholesterol Level in Young Adult, Mature, and Aged Rats

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Table S1. Effects of factors Age, Surgery and Age x Surgery interaction on motor activity, anxiety and depressive-like behavior, measured in the open field (OF) test, sucrose preference test (SPT) and splash test. Two-way analysis of variance was performed followed by a *post hoc* Bonferroni when appropriate.

Behavioral tests	Two-way ANOVA
OF- Total distance	Age [$F_{2, 95}$ = 27,610; p < 0.001] Surgery [$F_{2, 95}$ = 1,554; p =2.18] Age x Surgery interaction [$F_{2, 95}$ = 1,918; p =0.156]
OF- Number of rearings	Age [$F_{2, 95}$ = 10,913; p < 0.001] Surgery [$F_{2, 95}$ = 0,0551; p =0.815] Age x Surgery [$F_{2, 95}$ = 4,411; p = 0.017]
OF- Distance center	Age [$F_{2, 95}$ = 21,921; p < 0.001] Surgery [$F_{2, 95}$ = 2,899; p =0.095] Age x Surgery interaction [$F_{2, 95}$ = 1,898; p =0.161]
OF- Time center	Age [$F_{2, 95}$ = 14,966; p < 0.001] Surgery [$F_{2, 95}$ = 2,694; p =0.108] Age x Surgery interaction [$F_{2, 95}$ = 1,626; p =0.208]
SPT	Age [$F_{2, 95}$ = 1.012; p = 0.372] Surgery [$F_{2, 95}$ = 6.180; p =0.017] Age x Surgery [$F_{2, 95}$ = 4.245; p = 0.021]
Splash test	Age [$F_{2, 95}$ = 1.283, p = 0.288] Surgery [$F_{2, 95}$ = 13.971; p < 0.001] Age x Surgery interaction [$F_{2, 95}$ = 0.172; p = 0.843]
ORT (number of counts)	Age [$F_{2, 95}$ = 0,411; p = 0.525] Surgery [$F_{2, 95}$ = 4,314; p = 0.02] Age x Surgery interaction [$F_{2, 95}$ = 0,902; p =0.414]
ORT (time)	Age [$F_{2, 95}$ = 14,966; p < 0.001] Surgery [$F_{2, 95}$ = 2,694; p =0.108] Age x Surgery interaction [$F_{2, 95}$ = 1,626; p =0.208]

Table S2. Effects of factors Age, Surgery and Age x Surgery interaction on oxidative stress markers, superoxide dismutase (SOD), glutathione (GSH), malondialdehyde (MDA). Two-way analysis of variance was performed followed by a *post hoc* Bonferroni when appropriate.

Oxidative stress	
SOD	Age [$F_{2, 95}$ = 5,468; p = 0.011] Surgery [$F_{2, 95}$ = 6.135; p = 0.021] Age x Surgery [$F_{2, 95}$ = 0.0337; p = 0.967]
GSH	Age [$F_{2, 95}$ = 1,009; p =0.382] Surgery [$F_{2, 95}$= 5,198; p=0.038] Age x Surgery [$F_{2, 95}$ = 0.194; p = 0.324]
MDA	Age [$F_{2, 95}$ = 31,534; p < 0.001] Surgery [$F_{2, 95}$= 4,28; p = 0.0037] Age x Surgery [$F_{2, 95}$ = 1.427; p = 0.248]