**SUPPLEMENTARY MATERIALS**
to the article D.F. Avgustinovich, I.V. Chadaeva, A.V. Kizimenko, A.V. Kovner, D.V. Bazovkina, D.V. Ponomarev, V.I. Evseenko, V.A. Naprimerov, M.N. Lvova
"The liver-brain axis under the influence of the chronic *Opisthorchis felineus* infection combined with prolonged alcoholization in mice"

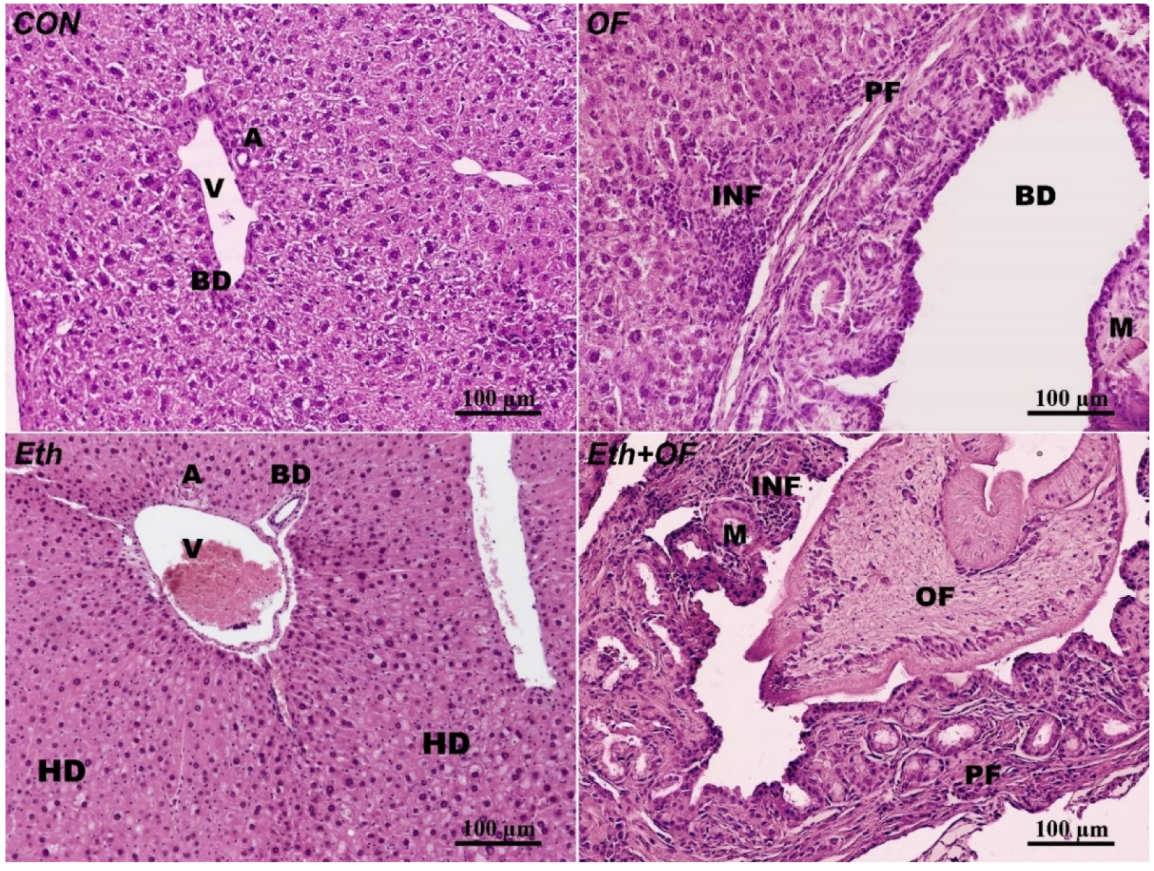


**Fig. S1.** Hematoxylin-and-eosin staining of representative sections of liver components from control mice (CON), *O. felineus*-infected mice (OF), mice consuming 20 % ethanol (Eth), and mice subjected to both procedures (Eth+OF).

A: artery, V: vein/venule, BD: bile duct, PF: periductal fibrosis, INF: infiltration, HD: hepatocyte dystrophy, OF: *O. felineus*, M: intestinal-type metaplasia.

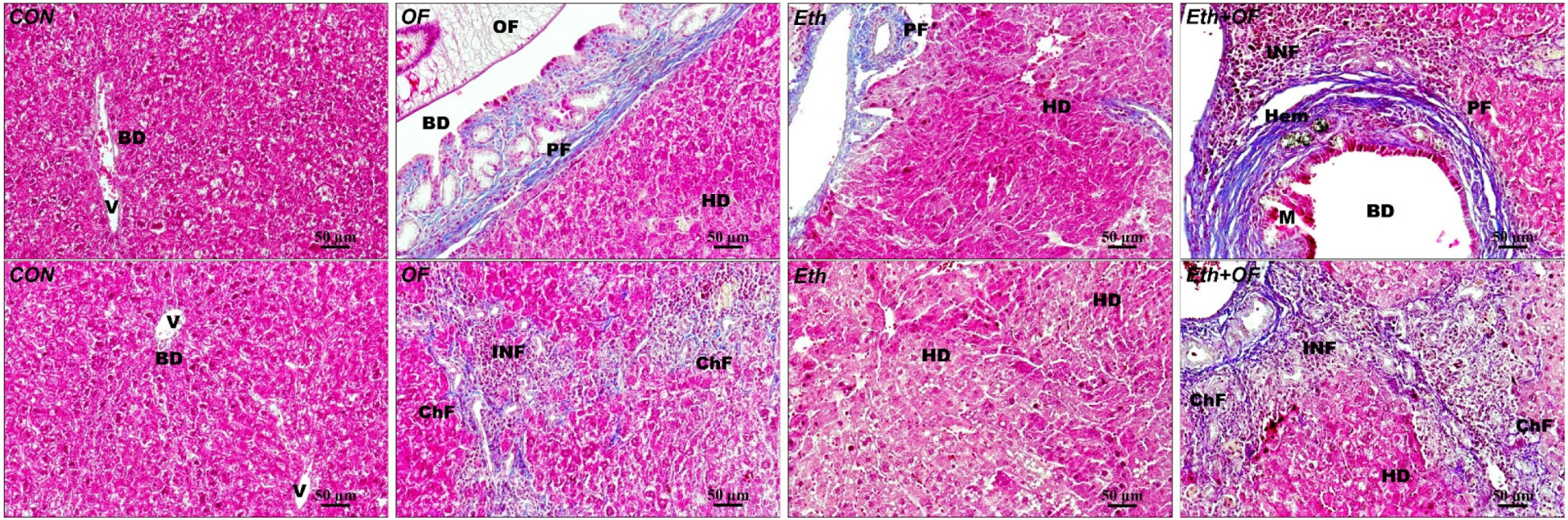


**Fig. S2.** Masson staining of representative sections of liver components from control mice (CON), *O. felineus*-infected mice (OF), mice consuming 20 % ethanol (Eth), and mice subjected to both procedures (Eth+OF).

V: vein; BD: bile duct; PF: periductal fibrosis; HD: hepatocyte dystrophy; ChF: cholangiofibrosis; INF: infiltration; M: intestinal-type metaplasia; OF: *O. felineus*; Hem: hemozoin.

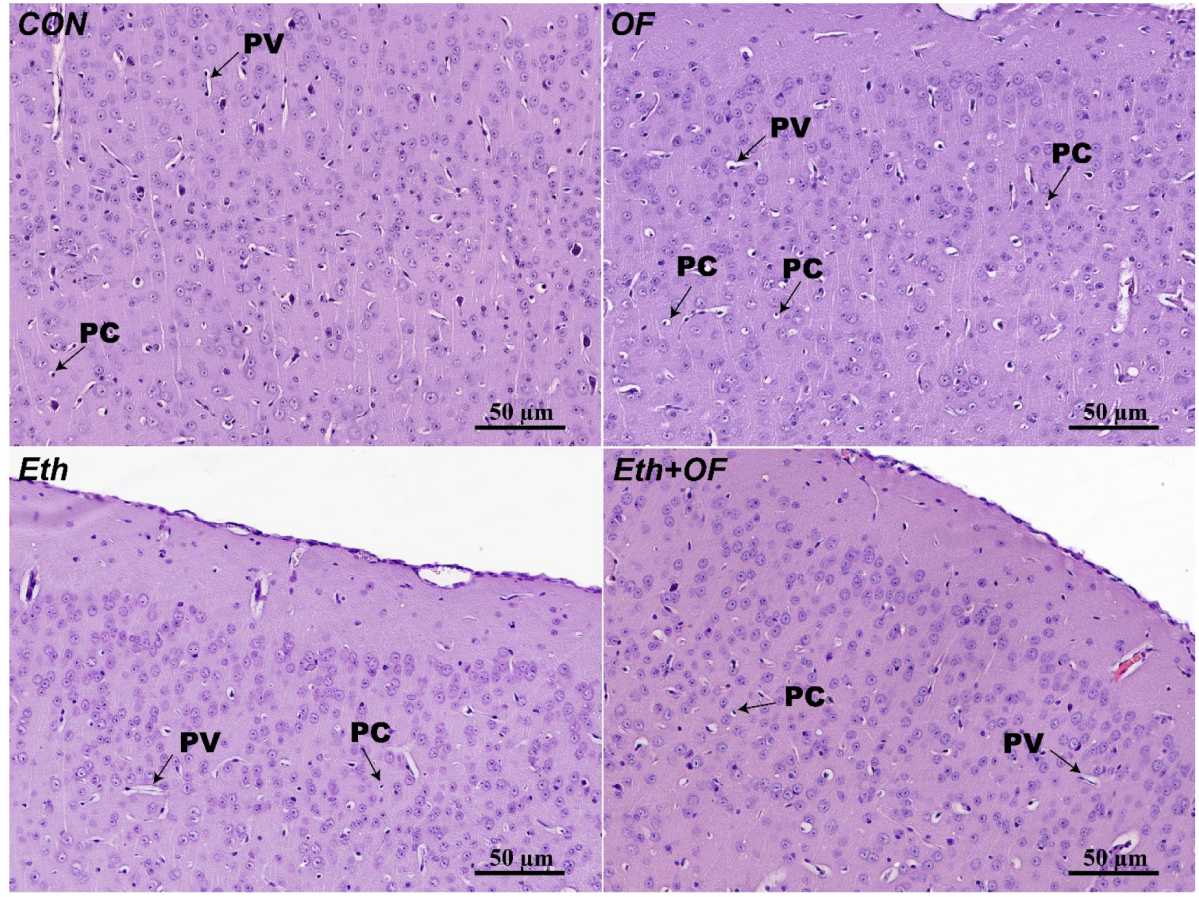


**Fig. S3.** Morphological alterations in the cerebral cortex of control mice (CON), *O. felineus*–infected mice (OF), mice consuming 20 % ethanol (Eth), and mice subjected to both procedures (Eth+OF) (Hematoxylin-and-eosin staining).

PV: perivascular edema; PC: pericellular edema.

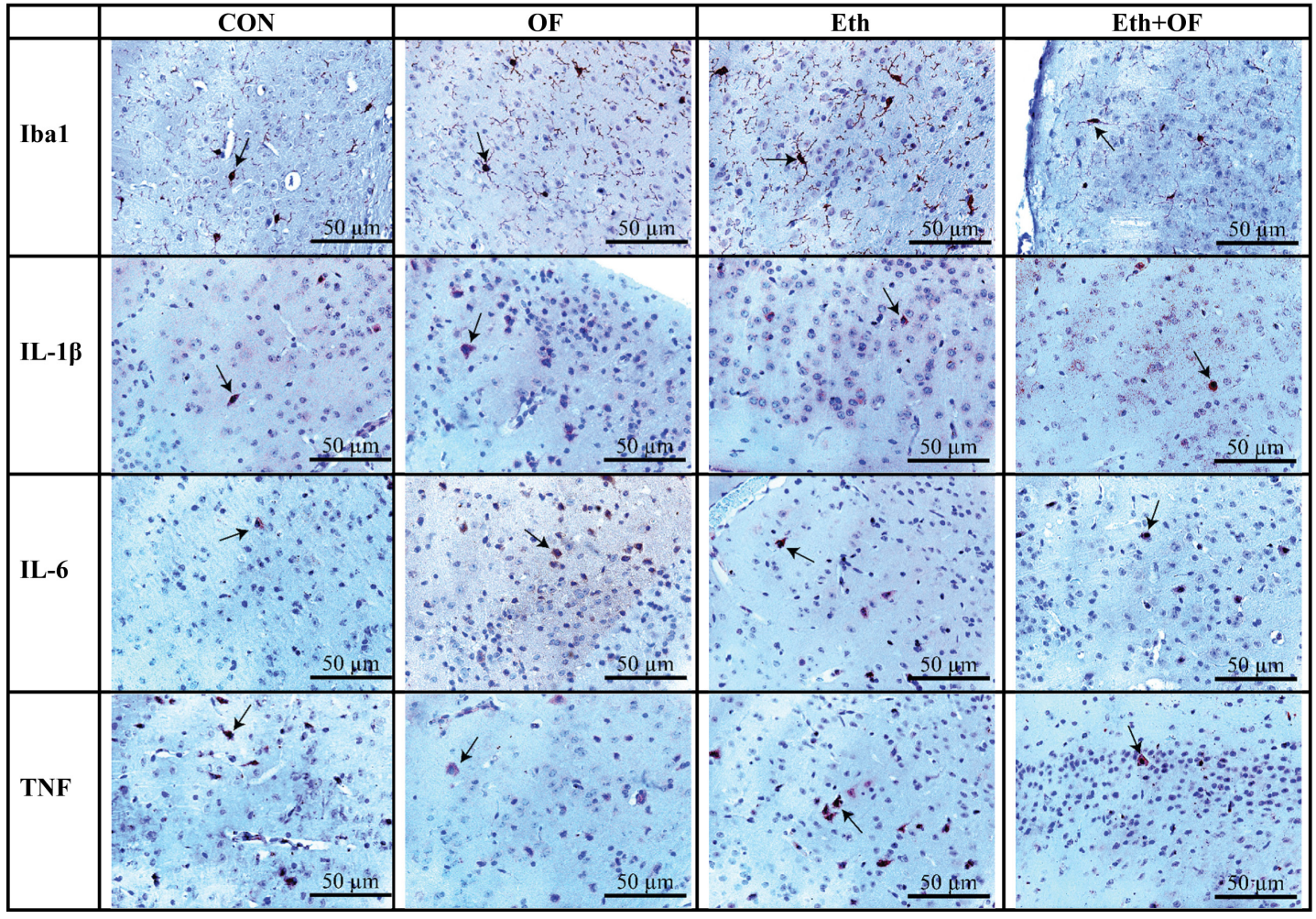


**Fig. S4.** Representative images of immunohistochemical staining for Iba1, IL-1β, IL-6, and TNF in the cortex of control mice (CON), *O. felineus*-infected mice (OF), mice consuming 20 % ethanol (Eth), and mice subjected to both procedures (Eth+OF).

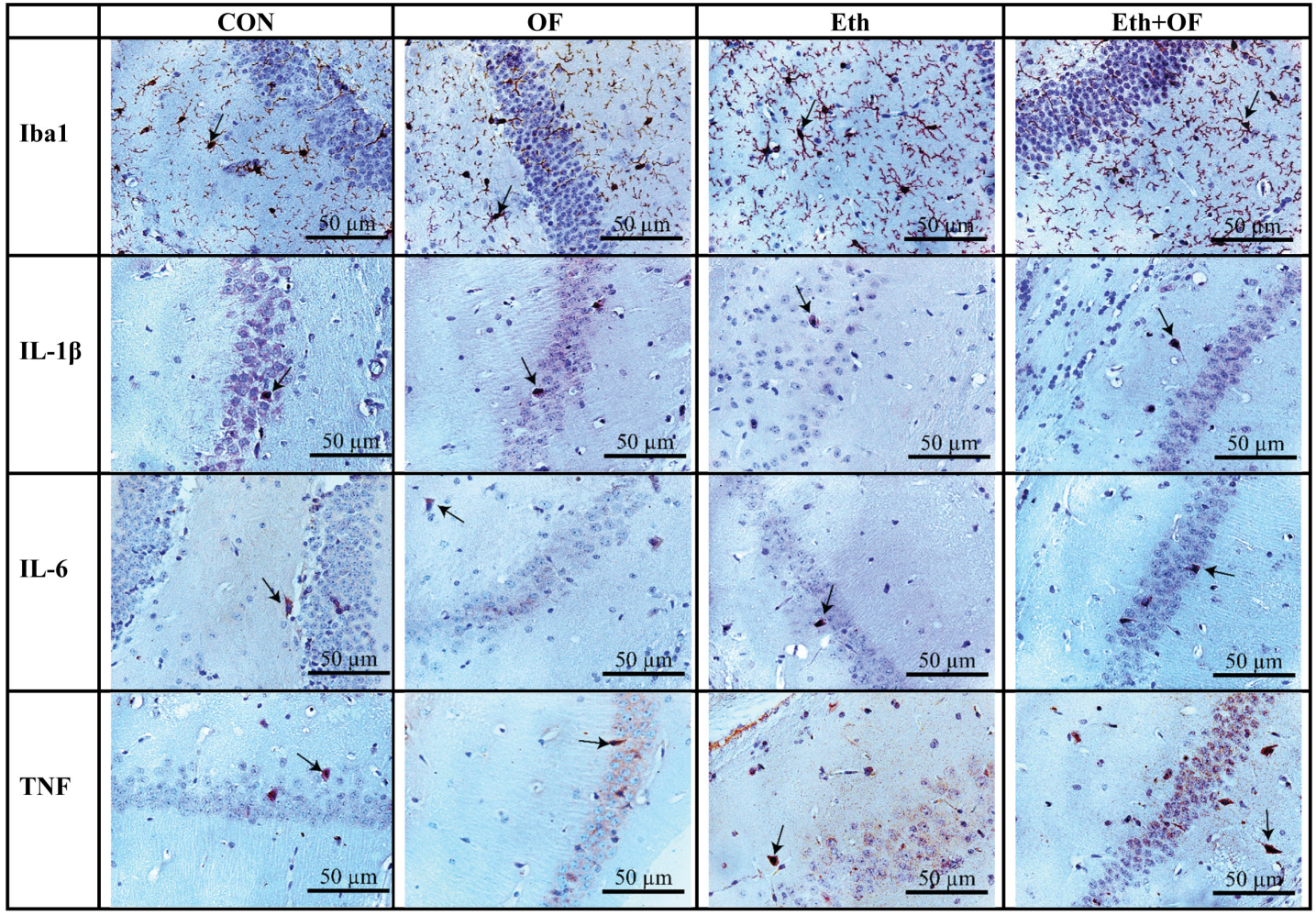


**Fig. S5.** Representative images of immunohistochemical staining for Iba1, IL-1β, IL-6, and TNF in the hippocampus of control mice (CON), *O. felineus*-infected mice (OF), mice consuming 20 % ethanol (Eth), and mice subjected to both procedures (Eth+OF).

**Table S1.** Effects of the adverse factors and of their interaction on parameters in the open field test, as assessed by three-way ANOVA

| Indices | Factor "infection" | Factor "ethanol" | Factor "peppermint" | "infection" × "ethanol" | "infection" × "peppermint" | "ethanol" × "peppermint" | "infection" × "ethanol" × "peppermint" |
|---|---|---|---|---|---|---|---|
| Number of approaches to tumbler | F(1,108) = 2.12<br>$p = 0.148$ | F(1,108) = 1.56<br>$p = 0.214$ | **F(1,108) = 24.34**<br>***p* < 0.001** | **F(1,108) = 7.30**<br>***p* = 0.008** | F(1,108) = 1.51<br>$p = 0.222$ | F(1,108) = 1.77<br>$p = 0.186$ | F(1,108) = 1.76<br>$p = 0.188$ |
| Time of approaches to tumbler | F(1,108) = 1.44<br>$p = 0.233$ | **F(1,108) = 6.44**<br>***p* = 0.013** | F(1,108) = 1.14<br>$p = 0.288$ | F(1,108) = 0.25<br>$p = 0.615$ | F(1,108) = 0.08<br>$p = 0.773$ | F(1,108) = 0.36<br>$p = 0.548$ | F(1,108) = 0.96<br>$p = 0.330$ |
| Tumbler latency | F(1,108) = 0.37<br>$p = 0.544$ | F(1,108) = 0.03<br>$p = 0.852$ | **F(1,108) = 10.74**<br>***p* = 0.001** | F(1,108) = 2.15<br>$p = 0.146$ | F(1,108) = 1.02<br>$p = 0.314$ | F(1,108) = 0.01<br>$p = 0.924$ | F(1,108) = 0.00<br>$p = 0.994$ |
| Number of squares | **F(1,108) = 6.42**<br>***p* = 0.013** | F(1,108) = 1.69<br>$p = 0.196$ | **F(1,108) = 50.71**<br>***p* < 0.001** | F(1,108) = 2.94<br>$p = 0.090$ | F(1,108) = 1.22<br>$p = 0.272$ | F(1,108) = 0.01<br>$p = 0.933$ | F(1,108) = 0.01<br>$p = 0.921$ |
| Number of rearings | **F(1,108) = 9.22**<br>***p* = 0.003** | F(1,108) = 0.12<br>$p = 0.732$ | F(1,108) = 3.69<br>$p = 0.058$ | F(1,108) = 0.02<br>$p = 0.877$ | F(1,108) = 0.22<br>$p = 0.637$ | F(1,108) = 0.18<br>$p = 0.673$ | F(1,108) = 1.26<br>$p = 0.264$ |
| Time of rearings | **F(1,108) = 8.06**<br>***p* = 0.005** | F(1,108) = 0.37<br>$p = 0.544$ | F(1,108) = 2.59<br>$p = 0.111$ | F(1,108) = 0.20<br>$p = 0.653$ | F(1,108) = 0.32<br>$p = 0.574$ | F(1,108) = 0.70<br>$p = 0.403$ | F(1,108) = 0.38<br>$p = 0.537$ |
| Rearing latency | F(1,108) = 0.17<br>$p = 0.680$ | F(1,108) = 2.60<br>$p = 0.110$ | F(1,108) = 0.61<br>$p = 0.436$ | F(1,108) = 0.24<br>$p = 0.625$ | F(1,108) = 0.15<br>$p = 0.699$ | F(1,108) = 0.00<br>$p = 0.958$ | F(1,108) = 0.04<br>$p = 0.845$ |

Note. Statistically significant interactions between factors (F and *p* scores) are highlighted in bold.