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Supplemental carnosine positively affects brain tissue in the experimental model of Autoimmune Encephalitis (AIE) in mice

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Background: L-Carnosine (b-alanyl-L-histidine) is a dipeptide, widely present in excitable tissues, such as muscle and neural tissue and has been shown to have a direct and indirect antioxidant effect, but its role in the brain remains unclear. Data suggests the possible neuroprotective potential of carnosine *in vitro* and *in vivo* models.

Purpose: The objective of this study was to determine glio and neuroprotective potential of l- carnosine *in vivo* animal model of autoimmune encephalitis in mice.

Methods: C67BL/6 mice underwent AIE and were treated with carnosine (420mg/kg) or saline per os once daily during 20 days until sacrifice. Histological characteristics of brain tissue were assessed. To determine demyelinating areas we have used immunohistochemical staining to Myelin Basic Protein (MBP). Infiltration with a mononuclear inflammatory infiltrate is detected by immunohistochemical staining on CD68.

Results: Qualitative analysis of the tissue characteristics in carnosine group showed weaker inflammatory infiltrate, as well as a smaller number of demyelinating areas positive for MBP. L- carnosine produced a potentially significant neuro and glioprotective potential compared to the control group that received saline.

Conclusions: The results highlight the potential of L-carnosine as a neuroprotective agent in autoimmune encephalitis model in mice.

Biography

Jovana Drljača is a Research Assistant at the Institute for Histology and Embryology, Faculty of Medicine, University of Novi Sad, Serbia. She holds a Master's degree in Pharmacy since 2016 and now is a PhD candidate, highly engaged with science through participating in the project supported by the Ministry of Education, Science and Technological Development of Serbia. She is trained in working with laboratory animals and also has completed several training courses regarding the cell culture and molecular testing. Jovana has a great practical experience in cell biology, different staining methods of cells and mitochondrial respiration.

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