

4th International Conference on**Central Nervous System Disorders & Therapeutics**

November 12-13, 2018 | Edinburgh, Scotland

Quantitative analysis of the Golgi impregnated human striatal neurons: Morphological description highlighted through functional diversity**Bojana Krstonosic**

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The basal nuclei are a group of subcortical nuclei that are best known for their motor functions, but their role in relevant behavioral processes has been well established too. The cortico subcortical pathways, parallel-separate and integrated-convergent, which pass through basal nuclei work together and enable the coordinated behavior to be focused, as well as modified by certain external and internal stimuli. The role of the striatum in planning, preparation and performance of voluntary movements is known to be well controlled by the interaction between projection neurons and interneurons. In this study, a total of 652 neurons of the human precommissural striatum were examined from both cerebral hemispheres. Quantitative analysis confirmed qualitative classification of human striatal neurons into five types (two types of projection cells and three types of interneurons). Morphology of the striatal neurons in terms of the size of their bodies, the size and shape of their dendritic fields, the dendritic branching pattern, the density of spines and the curviness of dendrites is a reflection of their complex function. Although, the putamen has been mostly referred to as a sensorimotor striatal area and the caudate nucleus as a cognitive one; it is well known that the precommissural striatum as an associative territory, receives information from cognitive cortical areas. The data of this research demonstrate morphological differences of the cells, projection neurons and interneurons of the same type between two different parts of the human striatum, caudate nucleus and putamen. The obtained results are interpreted in relation to possible functional differences.

Biography

Bojana Krstonosic has completed Postdoctoral studies and her PhD at the University of Novi Sad, Faculty of Medicine, where she is currently working as an Assistant Professor at the Department of Anatomy. She is a Deputy Head of the Department of Anatomy, Assistant to the Editor-in-Chief of a journal and a Treasurer of the Serbian Anatomical Society of Serbia. She is a Member of several national and international associations of anatomists. Her field of research is Neuroanatomy and she is an Author of several papers published in reputed national and international journals.

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