trium, leiomyomas and leiomyosarcomas, shares its epitope H, which contains its unique sugar O-N-acetylglucosamine residue, with four other unrelated polypeptides produced by the normal and neoplastic smooth muscle cells. This should be considered when using anti-cytokeratin 8 antibodies in immunohistochemistry against smooth muscle cell tumors to avoid false positive immunohistochemical results.

TRANSGENIC MICE MODEL OF ALZHEIMER'S DISEASE: EARLY CHANGES IN THE NEUROGENESIS IN THE SUBGRANULAR ZONE OF THE HIPPOCAMPUS

Puškaš N. [1]*, *Zaletel I.* [1], *Perović M.* [2], *Schwirtlich M.* [3], *Stevanović M.* [3, 4, 5], *Kanazir S.* [2]

[1] Institute of Histology and Embryology «Aleksandar Đ. Kostić», School of Medicine, University of Belgrade, Belgrade, Serbia; [2] Department of Neurobiology, Institute for Biological Research «Siniša Stanković», University of Belgrade, Belgrade, Serbia; [3] Laboratory for Human Molecular Genetics, Institute of Molecular Genetics and Genetic Engineering, University of Belgrade, Belgrade, Serbia; [4] University of Belgrade, Faculty of Biology, Belgrade, Serbia; [5] Serbian Academy of Sciences and Arts, Belgrade, Serbia
* nela@dr.com

Key words: *mice model, Alzheimer's disease, neurogenesis, subgranular zone*

Background. Dysregulation of neurogenesis in the subgranular zone (SGZ) of the hippocampus has been related to cognitive deficits and memory loss in neurodegenerative diseases, such as Alzheimer's disease (AD). Transgenic (Tg) 5xFAD mice represent a model of Alzheimer's disease characterized by an early deposition of amyloid plaques. SoxB transcriptional factor regulate different cellular processes during embryonic and adult neurogenesis, but their roles in neurodegenerative disorders is not fully understood.

Aim. The aim of this study was to characterize the early changes in hippocampal neurogenesis in 8 weeks old 5xFAD Tg mice and to investigate the expression of SoxB transcriptional factors.

Material and Methods. Transgenic male mice and their respective non-transgenic controls were used in the present study.

Results and Discussion. Proliferating cells and immature neurons were detected by immunohistochemical expression of Ki67 and doublecortin (DCX), while neuronal stem/precursor cells were identified by the expression of Sox 1, Sox 2 and Sox21. Immunohistochemical analysis showed that 5xFAD mice in the SGZ of the hippocampus have significantly lower numbers of Sox 1, Sox21 and DCX immunoreactive cells, while the number of proliferating cells was unchanged when compared to their non-transgenic controls. The results of our study show that early changes in the neurogenesis in 5xFAD animal model occur despite the preserved proliferative potential in the SGZ, and clearly indicate for the first time that SoxB transcriptional factors are affected during this process.

DEVELOPMENT OF INTERSTITIAL CELLS OF CAJAL IN THE HUMAN FETAL APPENDIX

Radenkovic G. [1]*, *Velickov A.* [1], *Petrovic V.* [1], *Radenkovic D.* [2], *Zivanovic D.* [3]

[1] Institute of histology and embryology, University in Nis, School of Medicine, Nis, Serbia; [2] UCL Medical School, University College London (UCL), London, UK; [3] Paediatric Surgery and Orthopaedic Clinic, Clinical Centre Nis, University in Nis, School of Medicine, Nis, Serbia
* radenkog@gmail.com

Key words: *interstitial cells of Cajal, appendix, fetus, C-kit, human*

Aim. Interrelatedness and coordinated functions of interstitial cells of Cajal (ICC), enteric nervous system (ENS) and smooth muscle cells constitute the basis of peristaltic contractions of the gastrointestinal tract (GIT). ENS in the human appendix has a distinct pattern of organization, different from other parts of the GIT. ICC subtype distribution is also different in the appendix compared to other parts of the gut. The aim of the present study was to determine the distribution of enteric ganglia and appearance of c-kit-IR ICC in the human fetal appendix.

Material and Methods. The study material consisted of 14 human fetal appendixes at 15–32 weeks of gestational age. The differentiation of enteric neurons and smooth muscle cells was immunohistochemically examined by using anti-NSE and anti-desmin antibodies, respectively. The specimens were exposed to anti-c-kit antibodies in order to investigate ICC differentiation.

Results and Discussion. An important finding of this paper was the presence of numerous groups of neurons within the muscle layers of the appendix wall. In particular, in addition to myenteric plexus (MP) and submucosal plexus (SMP), there were groups of neurons within the circular and longitudinal muscle layers in human fetal appendix wall. Such a finding differed considerably from other parts of the small and large bowel. At 15 weeks of development, c-kit immunoreactive ICC were present within the circular muscle layer, but were missing around the MP ganglia and within the longitudinal muscle layer. Such a distribution pattern persisted up to 32 weeks of development, differing significantly from ICC distribution in other parts of the human fetal gut.

Conclusions. A specific organization of ENS elements and ICC subtypes in the human appendix could possibly have an impact on motility and the etiology of appendicitis occurring later in life.