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2nd International Symposium: Frontiers in Anatomy and Physiology Research and Education

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ABSTRACT

The aim of the special issue is to expand knowledge on the recent achievements in Anatomy, Physiology and related basic, preclinical, and clinical sciences of the participants of the 2nd International Symposium: Frontiers in Anatomy and Physiology Research and Education, conducted by the Faculty of Medicine and Heath Sciences, Universiti Malaysia Sarawak, in collaboration with the international partners on December 13-14, 2023, to strengthen international collaboration between Malaysian and overseas universities and to help all the readers of the journal to identify their own niche in research and international partnership. It is also aimed at motivation of young researchers to participate in the research competitions and win, to upgrade their own research and participate in the scientific networking. The scope of the publications in the Special Issue covers but is not limited to the scientific data obtained from research in clinical anatomy, histology, embryology, systemic physiology and pathophysiology, molecular medicine, physiology of cell membrane and single cells, histophysiology, animal studies, drug discovery, immunology and infectious diseases, inflammation and cancer, neurosciences and medical education. The keynote and the invited speakers are world-renowned scientists and physicians known for cutting-edge research and clinical practice. The papers and abstracts were peer-reviewed and selected for publication by the scientific committee of the Symposium formed by Malaysian and international researchers.

Keywords: *Anatomy; physiology; education; research and conference*

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ABSTRACTS

2nd International Symposium - Frontiers in Anatomy and Physiology Research and Education

GFAP expression in olfactory bulbs and olfactory epithelium after unilateral intranasal administration of lipopolysaccharide

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Abstract

Currently, we lack sufficient knowledge of the way inflammation of the nasal sinuses can impact inflammation of the olfactory bulbs (OB), potentially leading to neurodegeneration in the CNS. Signs of inflammation in these areas can be detected by observing the increasing expression of astrocytic GFAP. The aim of this study was to investigate the expression of GFAP in the olfactory epithelium (OE) and olfactory bulb (OB) after unilateral intranasal application of bacterial lipopolysaccharide (LPS) at high (1 mg/ml) and low (0.1 mg/ml) concentrations in mice (n=9 for both groups). We examined OB and OE cryostat sections using GFAP antibodies through immunohistochemistry. The intranasal administration of a low concentration of LPS increased the size of immunopositive structures for GFAP in the rostral migratory stream (RMS), GL and PL, but this effect was not observed in the OE compared to the control. Conversely, administering a high concentration of LPS leads to enhanced GFAP expression in the GL and PL of the olfactory bulb, as well as in the basal layer of OE. Despite this, there is a decrease in GFAP positive structures in the RMS. This suggests that high levels of LPS induce activation and astrogliosis in the OB. Moreover, it is probable that the decrease in astroglia count in the RMS is due to the decrease in migration of progenitors from the subventricular zone.

Keywords: *GFAP; olfactory bulbs and olfactory epithelium*

Citation:

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