3-P-016

Poster Sessions

Brazilian Green Propolis Suppresses Hypoxia-Induced Neuroinflammatory Responses in Microglia

Muzhou Jiang¹, Junjun Ni¹, Zhou Wu^{1,2}

¹*Department of Aging Science and Pharmacology, Faculty of Dental Sciences,* ²*OBT Research Center, Faculty of Dental Sciences*

Hypoxia has been recently proposed to drive microglia to produce proinflammatory cytokines, including interleukin- 1β (IL- 1β), tumor necrosis factor- α (TNF- α) and IL-6. Considering the fact that propolis has hepatoprotective, antitumor, antioxidative and anti-inflammatory effects, it may have protective effects against the hypoxia-induced neuroinflammation. In the present study, propolis (50 μ g/ml) was found to significantly inhibit the hypoxia-induced cytotoxicity and the release of proinflammatory cytokines. Furthermore, propolis significantly inhibited the hypoxia-induced generation of reactive oxygen species (ROS) and the activation of nuclear factor- κ B (NF- κ B) in microglia. Moreover, systemic treatment with propolis (8.33mg/kg, 2 times/day, ip) for 7 days significantly suppressed the microglial expression of IL- 1β , TNF- α , IL-6 and 8-oxo-deoxyguanosine in the somatosensory cortex of mice subjected to hypoxia (10% O₂, 4 h). These observations indicate that propolis suppresses the hypoxia-induced neuroinflammation through inhibition of the NF- κ B activation in microglia. Therefore, propolis can be used as pharmacological intervention preventing cognitive deficits in aging and aging-related neurodegenerative diseases.