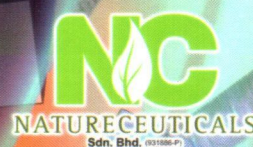


# MSPP 2012

# 26<sup>th</sup>

## Scientific Meeting of Malaysian Society of Pharmacology & Physiology

“Translational research for sustainable wellness:  
From perception to reality”



Equatorial Hotel, Penang  
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O028

### TRANSMISSION ELECTRON MICROSCOPICAL ASSESSMENT OF BLACK CUMIN FIXED OIL TREATMENT ON RAT'S HIPPOCAMPUS WITH SURGICALLY INDUCED NEURODEGENERATION

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A growing body of evidence now supports the hypothesis that critically attained threshold cerebral hypoperfusion (CATCH) accelerates age related neurodegeneration. Such threshold was achieved in rats by permanent bilateral common carotid artery occlusion (2VO). The hippocampal CA1 region pyramidal cells are the earliest neurons to degenerate following 2VO intervention. Nigella sativa oil extract (NSO) was found to preserve viability of cerebellar neuron cells in vitro putting forward its potential neuroprotective effect. The study objective was to assess the effect of NSO treatment on hippocampal pyramidal and other neighboring cells within CA1 subfield of rats with CATCH that was achieved through 2VO procedure. Nine rats were equally divided into three groups: sham control, untreated 2VO and NSO treated group (2VO with daily oral NSO treatment). After the 10th postoperative week coronal sections of the hippocampus were collected and processed for transmission electron microscopy (TEM). The neurodegenerative changes observed in pyramidal cells, astrocytes, endothelial basement membrane and axoplasms within CA1 hippocampal region of 2VO group were not observed in sham control group. Meanwhile, NSO treated groups hardly showed ultrastructural neurodegenerative changes similar to those observed in untreated 2VO group. This indicates a promising prospective neuroprotective activity provided by NSO treatment to prevent age related neurodegenerative diseases especially Alzheimer's disease.

O029

### EFFECTS OF TUALANG HONEY ON HAEMATOLOGICAL PARAMETERS OF RATS EXPOSED TO LOCAL PETROL (RON 95) VAPOURS: A PRELIMINARY STUDY

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Petrol/Gasoline is a petroleum derived mixture of hydrocarbons, some of which are known to be associated with various health problems including haematological disorders. Supplementation with antioxidants has been shown to reduce the toxic effects of petrol vapour exposure. Honey contains enzymes, vitamins, minerals, polyphenols and flavonoids that possess antioxidant activities. This is a preliminary study to determine the potential protective effects of Tualang honey against haematotoxicities associated with petrol vapour exposure. The petrol was purchased from Petronas filling station Kubang Kerian from November 2011 to February 2012. A total of 15 rats weighing 180g-250g (6-7 weeks old) were randomly divided into five groups (n= 3) and treated as follows: Group 1: Tap water (0.5ml) daily for 11 weeks. Group 2: Petrol vapours (17.8±2.6cm<sup>3</sup>/h) 6h daily, 6 days/week for 11 weeks. Group 3: Honey (1.2g/kg body weight) daily for 11 weeks. Group 4: Petrol vapours (17.8±2.6cm<sup>3</sup>/h) 6h daily 6 days/week + honey (1.2g/kg body weight daily) for 11 weeks. Group 5: Petrol vapours (17.8±2.6cm<sup>3</sup>/h) 6h daily 6 days/week for 11 weeks + honey (1.2g/kg body weight) during the last 2 weeks of the exposure to petrol. At the end of the experiment, blood samples and bone marrow were collected for haematological and morphological studies. Blood film of group 2 rats showed mild leucopenia and lymphopenia as well as increased 'reactive' lymphocytes; however no obvious difference was observed in the honey treated groups. Mild dysplastic changes in the erythroid precursors as well as in megakaryocyte lineage were observed in the BM of group 2. These changes were not obvious in the rest of the groups. This preliminary study suggests that honey probably has some protective effects against toxicities associated with local petrol (RON 95) vapour exposure. However, this requires confirmation with more number of samples in future.