

OP-009

Protective Effect of Honey and Propolis against Gentamicin- Induced Oxidative Stress and Hepatorenal Damages

Lyoussi Badaia¹, Hassan Laaroussi¹, Meryem Bakour¹, Driss Ousaaïd¹, Pedro Ferreira Santos², Zlatina Genisheva², Asmae El Ghouizi¹, Abderrazak Aboulghazi¹, José Antonio Teixeira²

¹Lyoussi Badaia, ¹Laboratory SNA MOPEQ, University Sidi Mohamed ben Abdallah, Fez, Morocco

²Hassan Laaroussi, ¹Laboratory of Physiology-Pharmacology and Environmental Health, SNA MOPEQ, University of Sidi Mohammed Ben Abdallah, Fez, Morocco

³Meryem Bakour, ¹Laboratory of Physiology-Pharmacology and Environmental Health, SNA MOPEQ, University of Sidi Mohammed Ben Abdallah, Fez, Morocco

⁴Driss Ousaaïd, ¹Laboratory of Natural Substances, Pharmacology, Environment, Modeling, Health and Quality of Life (SNA MOPEQ), Sidi Mohamed Ben Abdallah University, 30000 Fez, Morocco

⁵Pedro Ferreira-Santos, ²CEB-Centre of Biological Engineering, University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal
⁶Zlatina Genisheva, ²CEB-Centre of Biological Engineering, University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal

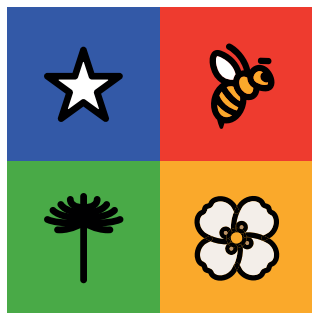
⁷Asmae El Ghouizi, ¹Laboratory of Natural Substances, Pharmacology, Environment, Modeling, Health and Quality of Life (SNA MOPEQ), Sidi Mohamed Ben Abdallah University, 30000 Fez, Morocco

⁸Abderrazak Aboulghazi, ¹Laboratory of Natural Substances, Pharmacology, Environment, Modeling, Health and Quality of Life (SNA MOPEQ), Sidi Mohamed Ben Abdallah University, 30000 Fez, Morocco

⁹José Antonio Teixeira, AMOPEQ), ²CEB-Centre of Biological Engineering, University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal

Bee products are a promising source of phenolic compounds with strong antioxidant activity. The present study was designed to explore the protective effect of honey, propolis, and their combination on gentamicin-induced oxidative stress and hepatorenal dysfunction. This study was conducted on male Wistar rats by intraperitoneal injections of gentamicin (120 mg/kg BW/day, i.p.) or normal saline (1 ml/kg BW/day, i.p.) for 10 consecutive days. Honey (2 g/kg BW), propolis (100 mg/kg BW), or their combination were given daily by gavage to normal and gentamicin groups. Honey and propolis samples were evaluated for their phytochemical composition and antioxidant capacity. The in vitro investigations showed that the evaluated samples especially propolis extract have high antioxidant power associated with the presence of several phenolic compounds such as flavonoids, flavan-3-ols, hydroxybenzoic acids, hydroxycinnamic acids, and stilbenes, while honey contains only hydroxybenzoic acids and hydroxycinnamic acids. It was also shown that simultaneous treatment with honey or propolis extract alone or in association prevented changes caused by gentamicin administration and improved hepatic and renal functions. Changes caused by gentamicin administration, observed by in vivo experiments, include significant elevation of uric acid, urea, creatinine, and hepatic enzyme levels (ALT, AST, and ALP) and kidney biochemical changes (an increase of urea, uric acid, and creatinine and a decrease of albumin and total protein) as well as remarkable changes of renal and liver oxidative stress markers (CAT, GPx, and GSH) and elevation of MDA levels. Overall, it can be concluded that honey and propolis might be useful in the management of liver and renal diseases induced by xenobiotics.





APIMONDIA

48TH INTERNATIONAL **CHILE**
APICULTURAL CONGRESS **2023**

September 4th - 8th, 2023

Sustainable Beekeeping, from the south of the world

ABSTRACT BOOK

ORGANIZED BY



HOST ASSOCIATION



www.apimondia2023.com