OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference on
Pharmaceutical Regulatory Affairs
October 21-23, 2013 DoubleTree by Hilton Hotel San Francisco Airport, CA, USA

Hepatoprotective effect of the crude flavonoid extract of bay leaves extract (*Laurus nolbilis* (Lauraceae)) on primary cultured rat hepatocytes

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Background: The crude flavonoid extract of bay leaves was tested for its hepatoprotective activity on primary cultured rat hepatocytes against paracetamol toxicity. The neutral red assay was used to assess the cytotoxicity of the extract and was applied with a broad range of concentrations (from 125-1000 µg/ml) on monolayer of rat hepatocytes. It revealed that the extract exerts no toxic effect on the monolayer hepatocyte layer.

Materials and Methods: For the evaluation of the hepatoprotective effect, different concentrations were prepared, starting from 12.5 µg/mL and increasing concentration in ascending order by dissolving in DMSO (1% maximum concentration). For each concentration, three replicates were carried out, in addition to controls which were: cell control (cells only), negative control (cells + paracetamol) and positive control (reference) (cells + sylimarin + paracetamol).

Results: Mortality of the hepatocyte (IC_{50}) was determined using neutral red assay and *L. nobilis* extract showed hepatoprotective activity against paracetamol toxic effect at 40 µg/ ml. The constitutive flavonoids of bay leaves were extensively studied and led to the separation and identification of 14 phenolic compounds which were identified using chemical, conventional and advanced NMR, 1-D and2-D spectral techniques.

Conclusion: From the point of view of the main classes of natural products existing in the leaves *Laurus nolbilis* (Lauraceae) and on the basis of the analytical results achieved during the course of the present work we can come to the conclusion that showed hepatoprotective activity is produced by the leaf extract of the plant could be due to the existing combination of phenolic constituents or it could be attributed to one or more of the phenolic compounds and the (IC_{50}) of the different fractions suggested that the antioxidant activity is best interpreted in terms of the existing phenolics, catchine, epicatchine, rutin, other flavonoid glycosides and chlorogenic acid which are well known for their potent antioxidant activities and corresponding significant inhibition of UV induced IL-6 production.

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