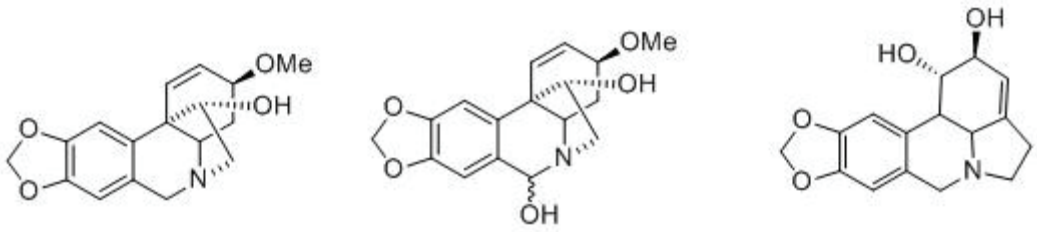
63rd International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA2015)

Budapest, Hungary, 23 - 27 August 2015

Caco-2, and 0.59-1.72 μM for HT-29. Lycorine and haemanthamine showed only moderate toxicity against normal cells (15 μM < IC_{50} < 30 μM) in comparison to used standard vinorelbine (IC_{50} 3.98 μM). Other tested alkaloids showed moderate or weak cytotox potential. Further step of the current study is the preparation of semisynthetic analogues by changing different parts of the structure of the most active compound haemanthamine.



PM-10

Meadowsweet (*Filipendula ulmaria*): LC-MS phenolic characterization and ameliorating effect on cisplatin-induced hepatotoxicity

Jelena Katanić[1], Eva M. Pferschy-Wenzig[2], Rudolf Bauer[2], Vladimir Mihailović [1]

[1] *Department of Chemistry, Faculty of Science, University of Kragujevac, Radoja Domanovi?a 12, 34000 Kragujevac, Serbia, Kragujevac, Serbia*

[2] *Institute of Pharmaceutical Sciences, Department Pharmacognosy, Karl-Franzens University Graz, Universitaetsplatz 4/1, 8010 Graz, Austria, Graz, Austria*

The liver plays a major role in detoxifying and clearing xenobiotics that may lead to liver damage and hepatic dysfunction. The present study was carried out to evaluate the effect of the methanolic extracts from aerial parts and roots of *Filipendula ulmaria* (L.) Maxim. (Rosaceae) (FUR, FUA) on cisplatin-induced hepatotoxicity. Wistar rats were treated for 10 days with FUA and FUR in three doses (100, 200 and 400 mg/kg body weight). Hepatotoxicity was induced on 5th day of treatment with a single injection of cisplatin (7.5 mg/kg, i.p.). Negative and positive control groups were also evaluated. The results show that the treatment with cisplatin (positive control group) increased the level of serum transaminases (ALT, AST). Treatment with both extracts, especially at concentrations of 200 and 400 mg/kg, significantly reduced the enzymatic activity of ALT and AST. Oxidative stress markers in liver tissue like superoxide-dismutase (SOD) and catalase (CAT) activities, as well as levels of reduced glutathione (GSH) and malonyl dialdehyde (MDA), indicated a high level of oxidative damage in the group treated with cisplatin only. The treatment with FUA and FUR significantly ($p<0.05$) and dose-dependently alleviated activities of SOD and CAT. Also, GSH level in hepatic tissue was dose-dependently increased due to extracts treatment. Lipid oxidation in livers of the rats treated with *F. ulmaria* extracts was considerably reduced regarding MDA levels. Based on presented results it can be concluded that the extracts of *F. ulmaria* possess hepatoprotective activity against CP-hepatotoxicity, which was demonstrated through regulation of oxidative stress markers in serum and hepatic tissue. The phytochemical profile of the extracts was evaluated by LC-DAD-MS^n. In FUR catechin as well as procyanidin dimers

and trimers and in FUA catechin, epicatechin, hydrolysable tannins (trigalloyl-hexahydroxydiphenol-glucoses), and the flavonoids spiraeoside and quercitrin could be identified.

PM-11

Metabolomics of fabaceous invasive plants from Colombia: an approach for lead finding from nature

Willy Cely-Veloza, Camilo Guerrero-Perilla, Ericsson Coy-Barrera

Bioorganic Chemistry Laboratory, Chemistry Department, Universidad Militar Nueva Granada, Cajicá, Colombia

Fabaceae family is a big group of flowering plants. Several of them have been introduced in various countries for diverse purposes but some become a problem because of biological invasions [1]. In Colombia, two Fabaceous species were introduced from Europe for ornamental uses such as Ulex Europeaus and Genista monspessulana, and they have progressively dominated some native environments as well as altering many aspects of ecosystem functioning [2]. For invasion success, this kind of plants can produce novel and unique secondary metabolites [3]. Thus, as part of our research on chemoprospecting of invasive plants, 17 and 19 plant accessions of U. europeaus and G. monspessulana, respectively, from different invaded places in Bogotá plateu, were investigated throug comprehensive untargeted LC-MS-based metabolomics approach in order to observe the chemical variability between samples and its implication on DPPH• and ABTS+• radical - scavenging and ferric-reducing capacities. The MS analysis resulted in the identification of different metabolites belonging to varied chemical classes but most samples exhibited the presence of free and glycosilated genistein, daizein and luteolin. The thirty six materials also showed antioxidant capacity at different levels (2>IC50(µg/mL)>55). The PCA and PLS-DA-derived score plots indicated several differences between samples but clustered according characteristic chemical constituents. The supervised analysis indicated the existence of three non-common flavone-related compounds to be responsible of the FRAP and radical-scavenging capacities. The present untargeted metabolomics exploration of these invasive plants is an excellent approach for lead finding from nature.

Acknowledgement: The present work is a product derived by the Project IMP-CIAS-1567 financed by UMNG - Validity 2014.

[1] Pappert et al. (2000). Am J Bot. 87:1240; [2] Macel et al. (2014) Ecol Evol 4:2777; [3] Cappuccino et al. (2006). Biol Lett 2:189.
