

15th Annual European Pharma Congress

May 07-09, 2018 | Frankfurt, Germany

Anti-myeloperoxidase activity of *Clematis flammula* ethanolic extract in two animal models: Gastric ulcer and recto-colitis

Atmani-Kilani Dina, Benloukil Malika, Yous Farah, Debbache-Benaida Nadjet, Saidene Naima, Cheraff Nassima, Sebaihi Salima and Atmani Djebbar
Université de Bejaia, Algeria

Gastric ulcer (GU) and recto colitis (RC) are prevalent diseases that can become chronic and fatal. Therapeutic strategies have to focus on the inflammatory character of both diseases, by reducing myeloperoxidase (MPO), an enzyme activated by infiltrated neutrophils. Reactive oxygen species (ROS) generated by this enzyme aggravate the ulcer symptoms. *Clematis flammula* (CF) leaves are widely used in Algeria to treat inflammatory-related disorders. The inhibition of this enzyme by CF ethanolic extract was tested in mice suffering from GC or RC, induced respectively by ethanol and intra-colon injection of acetic acid (3%). Our findings indicated that MPO activity was significantly ($p < 0.05$) increased in ethanol-treated mice, indicating infiltration and activation of neutrophils in the acute ulcerated gastric mucosa, while pre-treatment with CF (25, 50, and 100 mg/kg) as well as the drug pantoprazole (40 mg/kg) led to a marked ($p < 0.05$) decrease in MPO activity, compared to the control group with respective values of 16.06 ± 4.13 , 6.92 ± 0.68 , 6.13 ± 0.74 , and 65.40 ± 9.67 U/g tissue, indicating that CF significantly repressed MPO activity at the site of inflammation (ulcer). On the other hand, concerning RC, the administration of CF ethanolic extract attenuated the MPO activity with 38.11 ± 7.61 , 25.85 ± 4.39 and 14.35 ± 7.50 U/g tissue at concentrations of 25, 50 and 100 mg/kg, respectively. The known anti-RC drug sulfasalazine (100 mg/kg) was significantly less effective (47.62 ± 4.05 U/g of tissue) than the extract. Histologic analysis has confirmed our results, which validates the use of this plant for ulcer conditions especially for RC.

Recent Publications

1. Mariani F and Roncucci L (2017) Role of the vanins–myeloperoxidase axis in colorectal carcinogenesis. *Int. J. Mol. Sci.* 18:918.
2. Chang X, Luo F, Jiang W, Zhu L, Gao J, et al. (2015) Protective activity of salidroside against ethanol-induced gastric ulcer via the MAPK/NF- κ B pathway *in vivo* and *in vitro*. *Int. Immunopharm* 28:604–615.
3. Prabhu V and Guruvayoorappan C (2014) Protective effect of marine mangrove *Rhizophora apiculata* on acetic acid induced experimental colitis by regulating anti-oxidant enzymes, inflammatory mediators and nuclear factor-kappa B subunits. *International Immunopharmacology* 18(1):124–134.
4. Meddour R, Mellal H, Meddour-Sahar O and Derridj A (2010) The Medicinal Flora and its Current Uses in Kabylia (wilaya of TiziOuzou, Algeria): Some results of an ethnobotanical study. *Revue Régions Arides No. Special*: 181.

Biography

Atmani-Kilani Dina has obtained her BS Degree in Biology from the American University of Beirut, Lebanon, Master's Degree in Biology from California State University, LA, USA and her PhD from the University of Bejaia, Algeria. Her teaching activities in the field of Molecular Biology and Genetics since 1990 in the University of Bejaia have provided her with a lot of experience. Furthermore, her implication in research in the field of medicinal plants with collaboration of her colleagues has allowed many PhD students to obtain their degrees and resulted in many international publications. As her conviction that medicinal plants research will lead to the development of novel drugs with better efficiency than synthetic medicines, she hopes that her contribution will be fruitful.

dinaatmani88@yahoo.com

Notes: