

عنوان مقاله:

Evaluation of chemical composition, secondary metabolites (phenol, flavonoid), antioxidant effect and biological activities of Golden rain leaves

محل انتشار:

چهارمین کنفرانس بین المللی نوآوری های اخیر در شیمی و مهندسی شیمی (سال: 1396)

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نویسندگان:

Somayeh Ghahari - *Department of Organic Chemistry, Faculty of Chemistry, University of Mazandran, Babolsar, Iran*

Heshmatollah Alinezhad - *Department of Organic Chemistry, Faculty of Chemistry, University of Mazandran, Babolsar, Iran*

Ghorban Ali Nematzadeh - *Genetics and Agricultural Biotechnology Institute of Taberestan (GABIT), Sari Agricultural Sciences and Natural Resources University, Iran*

mahmood Tajbakhsh - *Department of Organic Chemistry, Faculty of Chemistry, University of Mazandran, Babolsar, Iran*

خلاصه مقاله:

This study evaluates the antioxidant and antimicrobial activities of methanolic extract of Goldenrain leaves on various plant pathogens that commonly cause irreparable damages to agricultural crops. Also, total phenolic and flavonoid content was determined. Antimicrobial activity was tested against 14 microorganisms, including three gram-positive (*Bacillus subtilis*, *Staphylococcus aureus* and *Rathayibacter toxicus*), five gram-negative (*Escherichia coli*, *Pseudomonas aeruginosa*, *Pseudomonas syringae* subsp. *syringae*, *Pseudomonas viridiflava* and *Xanthomonas campestris* pv. *campestris*) bacteria and six (*Pyricularia grisea*, *Fusarium oxysporum*, *Sclerotinia sclerotiorum*, *Botrytis cinerea*, *Rhizoctonia solani* and *Alternaria alternata*) fungi, using disk diffusion method and the Minimum Inhibitory Concentration (MIC) technique. The Golden rain leaves were also subjected to screening for possible antioxidant activity by using catalase, peroxidase, superoxide dismutase and 2, 2-diphenyl-1-picrylhydrazyl (DPPH) assay. The methanolic extract showed significant activity against *S. aureus* (MIC = 25 µg/mL), and *P. oryzae* (MIC = 12.5 µg/mL). In addition, the free radical scavenging capacity of the extract was determined with an IC₅₀ value of 113.17 µg/mL. Furthermore, structure of the compounds was determined by means of Liquid chromatography with UV and MS detection (LC/UV/ESI-MS). Using this method of analysis, we detected up to three saponin and acyclic sesquiterpene oligoglycoside. The plant produces these compounds as a complex mixture of naturally non-regioselective acetylated glycosides. Our results suggest that this plant may be a potential source of biocide, for economical and environmentally friendly disease control strategies. It may also be a good candidate for further biological and pharmacological investigations.

کلمات کلیدی:

Antimicrobial activity, Antioxidant activity, *Koeleria paniculata* Laxm, Phytochemicals, Plant pathogens

لینک ثابت مقاله در پایگاه سیویلیکا:

