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Acid-hydrolysis enhances maximum recovery of polyphenols from *Bergenia ciliata* and their validation through antioxidant activity

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Bergenia ciliata is an evergreen perennial herb which is rich in phenolic compounds, belongs to family Saxifragaceae, widely distributed in Central and East Asia. Phenolic compound Gallic acid, Bergenin, Gallicin and (+) Catechin have been analyzed in three accession of *B. ciliata* by using HPLC coupled to diode-array detector. The gas chromatography-mass spectrometry method (GC-MS) was also used for identification of targeted phenolic compounds after hydrolysis of samples in different chemical conditions. Methanol extract was subjected to different chemical treatment (hydrolysis) such as acid-base, neutral, hydrogen peroxide, dry heat to determine whether such process had effect upon their chemistry and antioxidant activity. Acid hydrolysis is found to best in simultaneous recovery of targeted compounds. Phenolic group is huge and comprises simple to complex form like methyl, ethyl ester, and glycosides and polymerized from as tannins. Qualitative and quantitative analysis is very challenging due to variety of existence and reactivity. Development of analytical methods for quantification of phenolic often begins with extraction of plant which is the first step for isolating and identifying the specific compounds which are responsible for a range of biological activities. Most of biological active compounds are pH dependent and decompose rapidly even in neutral solvent during extraction, while on treatment in different pH they are relatively stable. Therefore, optimization of extraction method for isolation of pH dependent and pH independent compounds and their quantification simultaneously is the major concern of the present study.

Biography

Nishi Srivastava is a PhD scholar at CSIR-National Botanical Research Institute. She has worked on biosynthetic pathway exploration of terpenoid compounds and published paper on andrographolide biosynthetic pathway exploration and artemisinin. Presently she is working on phenolic quantification and method development.

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