



Abstract

Antioxidant, Antibacterial and Antiproliferative Activities of Turkish Rhubarb (*Rheum palmatum* L.) Leaf Extracts [†]

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Abstract: Natural resources right from the beginning of the human civilization has paved the way to human being to combat different challenges. The big challenge was to save the human being from diseases and shortage of food. Plants helped the man in both areas very efficiently. No doubt when plants are used as food actually we are also taking lot of compounds of medicinal values in an excellent combination which naturally reduce the risk of diseases. Extraction and purification of several medicinally important compounds also gave the way to develop pharmaceutical industry in addition to its own therapeutic effects against different lethal diseases. *Rheum palmatum* L. has been widely used in traditional medicine for the treatment of various diseases in Asian countries. Antioxidant and biological studies showed very important results. A good coherence was found among extraction yield (9.48 to 16.09%), total phenolics (2.47 to 7.13 mg GAE/100 g), total flavonoids (0.34 to 0.85 mg CE/100 g) and antioxidant potential (≈64%). Antibacterial assays of peel and puree extracts advocated good potential to stop the growth and division of pathogenic bacteria. Further biological activity study was carried out using the human larynx HEp-2 cancer cells. The growth inhibitory effect on cancer cell line using MTT assay showed ethanol extracts of *Rheum palmatum* L. leaf both remained efficient to inhibit growth (≈38%) and cell division of cancer cells. Our results showed that extracts of *Rheum palmatum* L. leaf may be utilize to prepare functional food against pathogenic born diseases and most active compounds may also be extracted, concentrated and converted into tablets or suspension form for therapeutic purposes.

Keywords: *Rheum palmatum* L.; antioxidant activity; antibacterial activity; antiproliferative activity



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