

Proceeding Paper

# Phytochemical Analysis, Antioxidant Potential and Radical Scavenging Activity of *Lomatium dissectum*: An Ancient Plant of North America <sup>†</sup>

Savita Chaurasia

Department of Chemistry, Bellarmine University, 2001 Newburg Rd, Louisville, KY 40205, USA; schaurasia@bellarmine.edu

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Natural products have been used for their healing properties for many centuries and have been of great interest in the pharmaceutical and nutraceutical industry. Physical inactivity and the modern sedentary lifestyle, in which processed food has taken an important place, play an important role in oxidative stress induction. However, medicinal plants with antioxidant properties have been used since ancient times for their ability to treat or prevent several human ailments in which oxidative stress appears to be a cause. The aim of this research is to discover the antioxidant potential of *Lomatium dissectum*, a species of carrot family (Apiaceae) commonly known as fernleaf biscuitroot. *Lomatium* roots has been used historically by Native Americans, mostly as a treatment for respiratory illness, bacterial and viral infections. This study was to find out phytochemical composition, to determine total phenolic and flavonoid content, reducing potential and free radical scavenging activity in ethanolic extract of *Lomatium* roots. Qualitative phytochemical screening revealed the presence of phenols, flavonoids, saponins, terpenoids, and steroids. Total phenolic and flavonoid contents were found to be  $20.80 \pm 5.76$  mg GAE/g and  $65.5 \pm 15.8$  mg QE/g dry weight respectively. Plant extract showed high reducing potential in a dose-dependent fashion, which indicated the ability of the plant to donate electrons to neutralize free radicals. Antioxidant activity was determined using DPPH, superoxide and hydroxyl free radical scavenging assays. *Lomatium* extract displayed a concentration dependent radical scavenging activity. At a concentration of 0.1 mg/mL, plant extract scavenged DPPH, superoxide and hydroxyl radicals by 53.09%, 50.4% and 33.84% respectively. These results show that *Lomatium* root extract possess free radical scavenging activity and reducing potential and is rich in phenols and flavonoids. This is the first attempt at researching the antioxidant potential of *Lomatium* root. The results support traditional claims and pave the path for the discovery of antioxidant-rich nutrients that may help prevent us from oxidative stress borne diseases.

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