Study of henna in Persian medicine and new studies

Majid Balaei Kahnamoei\textsuperscript{a}, Mahbubeh Bozorgi\textsuperscript{b}, Mahnaz Khanavi\textsuperscript{a*}, Mohammad Reza Shams Ardekani\textsuperscript{a}, Tahmineh Akbarzadeh\textsuperscript{c}, Mina Saeedi\textsuperscript{b}, Mannan Hajimahmoodi\textsuperscript{d}

\textsuperscript{a}Department of Pharmacognosy, Faculty of Pharmacy, Tehran University of Medical Sciences, Tehran, Iran
\textsuperscript{b}Persian Medicine and Pharmacy Research Center, Tehran University of Medical Sciences, Tehran, Iran
\textsuperscript{c}Department of Medicinal Chemistry, Faculty of Pharmacy, Tehran University of Medical Sciences, Tehran, Iran
\textsuperscript{d}Department of Drug and Food Control, Faculty of Pharmacy, Tehran University of Medical Sciences, Tehran, Iran

Abstract:

	extbf{Background and Purpose: }Henna belongs to the genus Lawsonia from the Lythraceae family. This shrub plant is about 2 meters high which is often planted in order to use its leaves, but other parts of the plant such as skin and seeds also have therapeutic effects. Henna grows in Iran, Pakistan, India, and South Asia as well as tropical and subtropical areas of East Africa. The distribution of henna in Iran includes Hormozgan, Khuzestan, Kerman and Sistan Baluchestan. The aim of this study was to investigate the therapeutic effects of henna in Persian medicine texts and to gathering data about the new evidences for the effects of henna.

	extbf{Methods and Materials: }It was a review study based on a library search in the main sources of Persian medicine in Iran. Also, various databases such as Google Scholar, PubMed, and Science Direct were searched for new findings.

	extbf{Results: }Henna (\textit{Lawsonia innermis} L.) is widely used in Persian medicine to treat many diseases including skin and hair disorders, headaches, and wound healing. Henna leaves powder is used in dyeing of hair, beard, and nails. Henna, in terms of phytochemistry, includes compounds such as quinones, carbohydrates, proteins, flavonoids, tannins and phenolic compounds, alkaloids, coumarins, and fatty acids. The most important features of henna plant are analgesic, hypoglycemic, hepatoprotective, anti-inflammatory, antimicrobial, antifungal, antiviral, immune stimulant, antioxidant, and anti-cancer properties.

	extbf{Conclusion: }Comparing and adapting traditional findings and current studies suggests that there is a very close match between Persian medicine and conventional medicine sources. Hence, considering new practical findings of the henna and a closer look at the sources of Persian medicine especially ancient manuscripts may lead to discover novel effective pharmaceutical products.

	extbf{Keywords: }Henna, \textit{Lawsonia innermis} L, Persian Medicine, Phytochemistry

Corresponding Author: khanavim@sina.tums.ac.ir