

Pharmacological and therapeutic effects of *Berberis vulgaris* and its active constituent, berberine (Review)

Imanshahidi, M.^a, Hosseinzadeh, H.^{ab}

^a Pharmacodynamics and Toxicology Department, School of Pharmacy, **Mashhad University of Medical Sciences, Mashhad, IR, Iran**

^b Pharmacodynamics and Toxicology Department, School of Pharmacy, **Mashhad University of Medical Sciences, PO Box 91770-1360, Mashhad, IR, Iran**

[View references \(1 2 3\)](#)

Abstract

Barberry (*Berberis vulgaris* L. family Berberidaceae) is well known in Iran and various parts of this plant including its root, bark, leaf and fruit have been used as folk medicine. The two decades of research has demonstrated different pharmacological and therapeutic effects of *B. vulgaris* and its isoquinoline alkaloids (particularly berberine). Studies carried out on the chemical composition of the plant show that the most important constituents of this plant are isoquinoline alkaloids such as berberine, berbamine and palmatine. Berberine represents one of the most studied among the naturally occurring protoberberine alkaloids. In addition to *B. vulgaris* (barberry), berberine is present in many other plants and is used for the treatment of different diseases. This article reviews the traditional uses and pharmacological effects of total extract and the most active ingredient of *B. vulgaris* (berberine).

Author keywords

Barberry; Berberine; *Berberis vulgaris*

Indexed Keywords

EMTREE drug terms: acetylsalicylic acid; amphotericin B; berberine; *berberis vulgaris* extract; cyclosporin A; metronidazole; plant extract; pyrimethamine; sulfacetamide; undclassified drug

EMTREE medical terms: antihypertensive activity; antiinflammatory activity; antimicrobial activity; bacterial infection; *Berberis*; *berberis vulgaris*; blood pressure; brain infarction; cardiovascular effect; central nervous system function; clinical trial; congestive heart failure; cytotoxicity; diarrhea; drug effect; drug use; dyslipidemia; dyspnea; endocrine system; fever; flu like syndrome; gastroenteritis; gastrointestinal symptom; gastrointestinal tract function; heart arrhythmia; heart injury; human; hypertension; immunomodulation; inotropism; low back pain; malaria; nonhuman; penis erection; protection; respiratory function; review; rheumatic disease; side effect; skin function; therapy effect; toxicology

MeSH: Berberine; *Berberis*; Humans; Iran; Medicine, Traditional; Phytotherapy; Plants, Medicinal

Medline is the source for the MeSH terms of this document.

Species Index: Berberidaceae; *Berberis*; *Berberis vulgaris*

Chemicals and CAS Registry Numbers: acetylsalicylic acid, 493-03-8, 00-78-2, 03763-74-4, 03764-49-7, 73781-77-1; amphotericin B, 1397-89-3, 30702-87-0; berberine, 2086-83-1, 733-70-8; cyclosporin A, 09870-13-3, 73798-73-2; metronidazole, 39322-38-8, 443-48-1; pyrimethamine, 03740-38-3, 08-14-0; sulfacetamide, 127-07-0, 144-80-9; Berberine, 2086-83-1

Drug tradename: aspirin.

ISSN: 0901-418X CODEN: PHYRESource Type: Journal Original language: English

DOI: 10.1002/ptr.2399 PubMed ID: 18618024 Document Type: Review