Berberine is a golden yellow alkaloid obtained from the roots and stems of *Berberis aristata* or more commonly known as barberry. Berberine is also found in other plant like *Hydratis candensis* (Goldenseal), *coptis chinensis* (Coptis or Golden thread), *Berberis aquifolium* (Oregon grape). These berberine containing plants are used medicinally in virtually all traditional medical systems and have a history of usage in ayurvedic and chinese medicine dating back atleast 3000 years. The roots are regarded as tonic and is used as cholagogue, stomachic, laxative, diaphoretic, antipyretic and antiseptic. Additionally, it is used externally for ocular ailments, indolent ulcers and in haemorrhoids. Berberine a quaternary alkaloid is isolated as its hydrochloride or sulphate salts. Berberine is renowned for its antibacterial activity and finds use as a flavoring agent in food and alchoholic drinks. Berberine hydrocholride and sulphate find application in the preparation of drugs for cholera, diarrhoea, dysentery and eye troubles. Berberine inhibited by 70% the secretory responses of the heat labile enterotoxins of *Vibrio cholerae* and *Escherichia* coli in experimental animals. As a diagnostic tool, berberine hydrochloride and sulphate help in the diagnosis of latent malaria by releasing the parasites into the blood stream. Berberine is useful in the treatment of oriental sores caused by *Leishmania tropica* and is reported to inhibit the promatigate form of *L. donovani*. 
Berberine is observed to inhibit ventricular tachyarrhythmias (5), Aqueous solution of berberine have also been employed in cases of ocular infections especially those resulting form Chlamydia trachomatis (6). The efficacy of berberine 0.2% was found superior to sulfacetamide 20% both clinically and in bacterial titers (7).

Amongst the multiple pharmacological action of berberine is antiinflammatory activity and inhibits thrombus formation, platelet aggregation and adhesion induced by ADP, arachidonic acid and collagen in murines (5).

Over and above all, berberine improves the host defence by immunostimulating effects and improving the blood flow to the spleen, and by activating the macrophages (5). Due to its antiinfective activity, berberine, finds use in dental care and urinary tract infections (5).

Berberine and its hydrochloride / sulphate salts are considered nontoxic in clinical doses. It is safe with no genotoxicity, cytotoxicity or mutagenicity. The therapeutic dose of berberine salts for oral supplementation is 200 mg two to four times daily.

References:

2. Rabbani GH et al, Randomized controlled trail of berberine sulphate therapy for diarrhea due to enterotoxigenic Escherichia coli and Vibrio cholerae J. Infect. Dis 155, 979-984, 1987