

# Alkaloids and Their Anti-Arthritic Activity of Few Classic Homeopathic Remedies from Plant Kingdom, with Added Therapeutics - A Review

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## ABSTRACT

The human body has a very well-developed musculoskeletal system, consisting of bones, joints, cartilages, muscles & tendons which coordinate excellently to allow various bodily movements. Arthritis, the most common presentation of musculoskeletal diseases, is an inflammation of joints either acute or chronic characterized by pain, swelling and stiffness. The use of alternative medicine is becoming popular due to toxicity and side effects of modern medicines with long term usage. Homoeopathic remedies prepared from vegetable kingdom, i.e., from plants are useful in the treatment of various musculo skeletal diseases. This article is an attempt to highlight “phytochemical constituents of commonly used plant remedies in clinical practice, which are responsible for anti-inflammatory activity, and also therapeutics. A lot of development has taken place in the scientific world since the time of Hahnemann. As evidence-based Medicine is the present trend, it is the time to show the world the highness of Homoeopathy. Numerous trials are going on, to show that Homeopathic formulations are not mere Placebo but have a distinguishing Pharmacological and Therapeutic effect as well.

**Keywords:** Musculoskeletal system, Anti-Arthritic, Anti-Inflammatory, Pharmacological/Therapeutic effect, Phyto-chemical constituents.

## INTRODUCTION

WHO recognises that musculoskeletal diseases contribute greatly to disability in all regions of the world. They are the second

largest contributor to disability worldwide, with low back pain being the single leading cause of disability globally. Musculoskeletal conditions and injuries are not just conditions of older age, but are relevant across the entire life-course. It significantly limits mobility and dexterity, leading to early retirement from work, reduced accumulated wealth and reduced ability to participate in social roles.

The most common and disabling musculoskeletal conditions are Osteo-Arthritis, Lumbar and Cervical Spondylitis, Fractures associated with bone fragility, Injuries, Metabolic disorders like Gout, and systemic inflammatory conditions such as Rheumatoid Arthritis. The greatest proportion of persistent pain conditions is accounted for by musculoskeletal conditions. Whatsoever the diagnosis of pain, Homoeopathy deals with the characteristic symptoms of the patient. Diagnostic symptoms are least important from the point of view of remedy selection. For example, according to ACR criteria, morning stiffness is common to RA, movement aggravation, ameliorated by rest is common diagnostic symptom of Osteo Arthritis. Factors such as intensity, pace of symptoms, direction of movement of symptoms, concomitants, physical and mental picture of patient become important for selection of remedy.

Along with therapeutic indications of the drugs, it is essential to understand the mode

of action of the remedy. Phyto chemicals are various biologically active compounds found in plants that have protective or disease preventive properties, which are responsible for cure even in Homoeopathic dilutions. Let us have a brief study on phytochemicals which are responsible for anti-arthritic activity of some remedies in daily practice.

### **THERAPEUTICS OF FEW WELL-KNOWN PLANT REMEDIES ALONG WITH THEIR PHYTOCHEMICAL CONSTITUENTS:**

#### **1. Arnica:**

The plant Arnica Montana is used in folk medicine to alleviate pain, inflammation and swelling of muscles and joints associated with Rheumatoid Arthritis and other inflammatory conditions. Arnica contains Polyphenolic compounds, Sesquiterpene Lactones [Helenaline], Flavonoids, Volatile oil [Thymol], Polysaccharides [Inulin] and Mucilage. The alleviation of arthritis is very likely due to the combined action of phenolic and flavonoid compounds.

**Homeopathic indications:** It is especially suited to cases when injury, however remote, seems to have caused the present trouble. Rheumatism of muscular and tendinous tissue, especially of back and shoulders. Rheumatism, resulting from exposure to dampness, cold and excessive muscular strain combined. It begins low down and works up. Pains as if bruised or beaten. Searches for a soft place in bed. Intense sensitiveness<sup>+++</sup> due to excessive pain. Fears touch, or the approach of anyone. When sitting still, most complaints disappear, but at night in bed, they are almost unendurable.

#### **2. Bryonia Alba:**

It has been used to treat rheumatic pain in Turkish folk medicine. According to phytochemical investigations, it has been found that bryonia have cucurbitacins and some flavone C-glycosides which are responsible for anodyne, anti-inflammatory, anti-rheumatic, smooth muscle relaxant

activity. Bryonia is a promising anti-inflammatory and urate lowering drug with Xanthine oxidase inhibitory activity which could be useful in gouty arthritis therapy.

**Homeopathic indications:** Complaints when warm weather sets in, after cold days. Complaints apt to develop slowly. It prefers to effect right side. Aching in every muscle. Every spot is painful on pressure. Weariness and heaviness in all limbs. The general character of the pain here produced is stitching<sup>+++</sup>, tearing; << motion, >> rest. Joints red, hot, swollen, stitching and tearing, << least movement >> on touch & warmth. Synovial inflammation of joints, and are stiff and painful.

#### **3. Gaultheria Procumbens:**

Inflammatory rheumatism, pleurodynia, sciatica, and other neuralgias, come within the sphere of this remedy. The analgesic and anti-inflammatory activities of this plant are believed to be influenced mainly by salicylic acid derivatives, especially methyl salicylate acting through several mechanisms including some antioxidant effects.

**Homeopathic indications:** It is a great remedy for inflammatory pains. Useful for both acute and sub-acute rheumatism. Useful especially when the salicylates cannot be used. It helps in relieving of excruciating pains.

#### **4. Guaiacum officinale:**

It is also called as Lignum vitae. Tincture is prepared from gum resin of lignum vitae. Its constituents include Lignans [Furoguaiacidin, Guaiacinand others], 18-25% Resin, Vanillin, Guaiazulene, and Triterpene Saponins. The Azulenes present in the drug are effective anti-inflammatory and antispasmodic agents along with Triterpene Saponins which are responsible for its medicinal action.

**Homeopathic indications:** Chief action is on fibrous tissue, Ligaments, Joints. It is useful in the chronic forms of articular rheumatism where the joints are distorted with concretions. Contraction of limbs<sup>+++</sup>,

stiffness and immobility. Immovable stiffness, feeling that he must stretch. Fixed, short tendons. Joints swollen, painful, and intolerant of pressure; can bear no heat. Burning heat; in affected parts. Arthritis deformans.

### **5. Ledum Pal:**

Major active compounds present in Ledum Palustre include Myricetin, Caffeic acid, Coumaric acid, Chlorogenic acid, Quercetin, Procyanidins, Catechin. These phytochemicals present in Ledum Palustre are strong antioxidants and anti-inflammatory agents. They suppress the production of inflammatory mediators and reduce overall inflammation.

**Homeopathic indications:** Affects the fibrous tissues of joints, especially small; ankles; tendons; heels. Rheumatism or gout; begins in lower limbs and ascends up. Affects left shoulder- and right hip-joint diagonally. Effected part is cold to touch but not cold subjectively to patient. Pains are sticking, tearing, throbbing; rheumatic pains are < by motion, at night, by warmth of bed and bed-covering >> only when holding feet in ice water.

### **6. Phytolacca Decandra:**

It has powerful effect on tendons, joints, muscles, fibrous tissue, fasciae and muscle sheaths. It has long history of use in folk remedies for Rheumatism and Arthritis. Its constituents include Triterpenoid Saponins; Resins; Tannin; Caryophyllene and Betanin [Pigments]; Formic acid, Phytolacca acid; Phytolaccine [Alkaloid]; Lectins. Triterpenoid Saponins are responsible for anti-rheumatic effect of Phytolacca Decandra.

**Homeopathic indications:** Rheumatism of fibrous and periosteal tissue. Lame, sore, bruised feeling all over with constant desire to move but motion < pains. Occupies a position between Bryonia and Rhus tox. Pain is flying like electric shocks; shooting, lancinating; rapidly shifting<sup>+++</sup>, which are worse at night. Pain as if joints were chopped with an axe. Pain is associated with

lassitude, intense prostration and great exhaustion<sup>++</sup>. Decrease of weight. Rheumatism in arms, especially about attachments of deltoid muscles. Cures when Bryonia and Rhus tox fail though apparently well indicated.

### **7. Rhododendron:**

This drug is native to Siberia. The Siberians use a decoction of it in chronic rheumatism and gout. Rhododendrin is the major biologically active substance in the leaves of Rhododendron with analgesic/anti-inflammatory activity.

**Homeopathic indications:** Affects small joints mostly. Affinity towards fibrous tissues, notably ligaments, periosteum. Effects right side of the body. Rheumatism in the hot season. Acute inflammatory swelling of joints, wandering from one joint to another, severe at night < in rest and during rough stormy weather, and are often accompanied by copious urination. Fibrous nodular deposits occur, especially in the great toe Pains are felt more in the periosteum and the deeper structures than in Rhus tox. Pains < by touch and sitting up and > by moving about. Cannot get asleep or remain asleep unless legs are crossed.

### **8. Ruta Graveolens:**

Popularly known as Rue. It has prominent action on the periosteum, bones, joints and cartilages. Traditionally it is used for the treatment of rheumatism, arthritis and other inflammatory conditions. Ruta Graveolens has anti-inflammatory, analgesic and sedative effect. The potent anti-inflammatory effect of Ruta is due to presence of flavonoid Rutin. It is known to inhibit prostaglandin synthesis, decreases CRP level, lipid peroxidation and release of other inflammatory mediators.

**Homeopathic indications:** Acts upon the Fibrous Tissues, Flexor Tendons, Joints, Wrists and Ankles. Back (Lumbar), periosteum and cartilages. Synovial sheaths of tendons are chiefly affected, as well as the sites of insertion into the periosteum. Pains BRUISED; SORE, ACHING, as if

sprained & RESTLESSNESS. Complaints are from repeated occupational strain rather than of a single injury leading to inflammation and fibrosis e.g. Tennis elbow. Muscles feel shortened and contracted<sup>+++</sup>. Pain in long bones as if they were broken. Bruised, in muscles and joints. Is unable to bend on account of pains in all

the joints. Wrist painful when lifting anything. Contraction of tendons of hand, which will ultimately become permanently flexed. Legs give out on rising from a chair, hips and thighs so weak. Thighs pain when stretching the limbs. The coccyx bone feels as if it has been injured. Complaints Worse, lying down, from cold, wet weather.

S. No.	Remedy	Phytochemicals/ Active Principles
1.	Arnica	Polyphenolic compounds, SesquiterpeneLactones [Helenaline], Flavonoids, Volatile oil [Thymol], Polysaccharides [Inulin] and Mucilage.
2.	Bryonia	cucurbitacins and some flavone C-glycosides
3.	Gaultheria Procumbens	salicylic acid derivatives
4.	Guaiacum officinale	Lignans [Furoguaiacidin, Guaiacinand others], 18-25% Resin, Vanillin, Guaiazulene, Triterpene Saponins, Azulenes
5.	Ledum Pal	Quercetin, Myricetin, Chlorogenic acid, Procyanidins, Caffeic acid, Coumaric acid, Catechin.
6.	Phytolacca decandra	Triterpenoid Saponins; Resins; Tannin; Caryophylleneand Betanin [Pigments]; Phytolacca acid and Formic acid; Phytolaccine [Alkaloid]; Lectins
7.	Rhododendron	Rhododendrin
8.	Ruta Graveolens	Rutin.

## DISCUSSION AND CONCLUSION

The study of homoeopathic remedies in relation to their phytochemicals provides a sound basis for their therapeutic activity. The objectivity of these phytochemicals consistently reproducible effects thereby strengthening the Scientific Basis of Homoeopathy.

### Declaration by Authors

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