



**Title:** ParActin®: A Potent Form of Andrographis Paniculata for Pain Support & More

**Hosts:** Jonathan Hunsaker, TeriAnn Trevenen

**Description:** This “king of bitters” (so-called because of its flavor) has been used for centuries in Asia to treat gut and upper respiratory infections, fever, herpes, sore throat, and other chronic and infectious disease conditions. However, modern research is demonstrating Andrographis paniculata’s benefits include aiding with joint conditions such as arthritis.

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## FEATURED PRODUCT



**MAINTAIN HEALTHY INFLAMMATION LEVELS:** Curcumin, the main healing compound found in turmeric, helps curb inflammation and supports your body in maintaining healthy inflammation levels.

**ENHANCE YOUR MOOD:** Researchers in a recent study studies found clear evidence that the compounds in turmeric helped maintain a healthy mood and disposition.

**SUPPORT HEALTHY JOINTS:** In addition to lowering overall pain and inflammation, curcumin has been shown to assist in pain reduction and inflammation, helping to maintain healthy joints.

**MAXIMUM BIOAVAILABILITY:** The fermentation process helps maximize your body's intake of the amazing nutrients in this supplement!

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## ParActin®: A Potent Form of Andrographis Paniculata for Pain Support & More

The medicinal herb *Andrographis paniculata* has been traditionally used for its **powerful anti-inflammatory properties and its ability to boost immune system activity.**

This “king of bitters” (so-called because of its flavor) has been used for centuries in Asia to treat gut and upper respiratory infections, fever, herpes, sore throat, and other chronic and infectious disease conditions [1]. However, modern research is demonstrating *Andrographis paniculata*'s benefits include aiding with joint conditions such as arthritis and it may even have anti-cancer benefits.

### Andrographis Goes by Many Names

*Andrographis* is cultivated in many tropical Asian countries including India, China, Malaysia, Indonesia, and Sri Lanka, as well as in the West Indies, Brazil, parts of Africa, and Central America.

Known as “chuan-xin-lian” in China, “kalmegh” in India, “senshinren” in Japan, “hempedu bumi” in Malaysia, “fah talai” in Thailand, and “green chiretta” in the Scandinavian countries, *Andrographis* is listed in the *Indian Pharmacopoeia* (a publication that lists standards for all drugs that are manufactured, sold, and consumed in India) and in a couple of dozen Ayurvedic formulas [2].

In traditional Chinese medicine (TCM), *Andrographis* is believed to rid the body of heat (e.g., fevers) and to dispel toxins [3].

### Phytochemistry of *Andrographis Paniculata*

Andrographis leaves are mainly responsible for its biological actions. They contain many bioactive compounds, including diterpene lactones – especially *Andrographolide*, the main bioactive ingredient that imparts the typical bitter taste.

**Andrographolide is an antioxidant that has been shown to be responsible for the herb's anti-viral and anti-bacterial properties.** Andrographolide is also reported in scientific literature to reduce blood clot formation, help protect the liver, have anti-cancer properties, and manage inflammation within safe levels [4].

What Is ParActin®?

ParActin® is a patented extract of *A. Paniculata*, standardized to a fixed concentration of Andrographolide and other related compounds including 14-deoxyandrographolides and neoandrographolides [5].

Preliminary research shows that ParActin® promotes a healthy inflammatory response by blocking a powerful chemical known as NF-kappa B, which is known to be a key regulator of the inflammatory response system.

As a result, **ParActin® helps support a healthy and appropriate inflammatory response by reducing the levels of pro-inflammatory compounds** that trigger the familiar pain and redness associated with inflammation.

The safety and efficacy of ParActin® has been assessed in more than 30 studies, including laboratory experiments on cultured cells and animal models – and even a human clinical trial.

Let's take a closer look at some of these studies and what they tell us about Andrographis and ParActin®.

### Inflammation Is Linked to Many Disease Conditions

Long-term, chronic inflammation that occurs when the immune system goes into overdrive may lie at the root of many otherwise unrelated diseases, including:

- asthma

- inflammatory bowel disease (IBD)
- rheumatoid arthritis (RA)
- autoimmune diseases
- depression
- cancer
- Alzheimer's disease

Inflammation – which manifests as swelling, redness, heat, and pain – is a normal response of our immune system and our body's way of defending us from infections and disease. However, if it's not managed properly, inflammation can harm the body.

[Chronic inflammation is the result of an overactive immune system](#) that is constantly turned on – or cannot be turned off – so that it attacks parts of the very body it is supposed to protect.

So-called oxygenated chemical species – including free radicals, oxygen ions, and peroxides – are continuously made in our body's cells in response to UV radiation and as byproducts of ongoing metabolic activity. They are highly reactive and dangerous, because **they can attack cellular DNA and proteins, damaging them.**

When oxygenated chemical species are generated in excess, they can overwhelm cellular defense systems, **leading to a condition known as oxidative stress along with high levels of inflammation** – which, as we discussed earlier, is known to contribute to the development of many diseases.

Andrographolide, the best-known bioactive ingredient in Andrographis, has been shown to directly inactivate free radicals. It also protects mitochondria, blocks pro-oxidant enzymes, and activates other antioxidant enzymes in the body [6].

### Andrographis Boosts the Immune System

Andrographolide has been shown to enhance the immune system. For example, it boosts production of white blood cells known as lymphocytes, which scavenge and destroy bacteria and other foreign matter. It also triggers the release of signaling proteins known as interferons, along with enhancing activity of the lymphatic system [7].

Interferons are made and released by our body's cells when they get infected with viruses, causing nearby cells to strengthen their anti-viral defenses. **Interferons are potent antiviral agents that stop viruses from multiplying.**

The lymphatic system is another circulatory system in our body that carries a fluid known as lymph, which removes the waste products of cellular metabolism. The lymphatic system also transports invading bacteria and viruses to lymph nodes where the white blood cells (lymphocytes) destroy them.

Andrographis has been shown to trigger our immune system in two ways:

- **Antigen-specific response** – specific proteins known as antibodies are made to counteract invading bacteria and viruses.
- **Nonspecific immune response** – immune cells known as macrophages are produced, which scavenge and destroy invaders.

Andrographis activates both responses, meaning it is very effective against a variety of infectious and cancer-causing agents [8].

Benefits for Upper Respiratory Tract Infections & Cough

Andrographis has been used for many hundreds of years in traditional medicinal systems to treat upper respiratory infections. Modern research supports this.

For example, a 2004 meta-analysis of the results of seven double-blind, controlled trials (with a total of 896 participants) showed that **Andrographis offers significant relief from the symptoms of upper respiratory tract infections** and may even prevent them from taking hold in the first place.

[Note: A meta-analysis is a quantitative epidemiological study used to systematically assess the results of previous research – typically randomized, controlled clinical trials – to derive overall conclusions about that body of research.]

All the participants in these seven clinical trials reported reduced fever, runny nose, cough, and sore throat on taking Andrographis relative to control patients. Side effects were described as “generally mild and infrequent” [9].

Similarly, another meta-analysis published in 2015 reviewed six randomized controlled clinical trials, which assessed the effects of Andrographis in the treatment of cough.

Combined, these six studies compared 333 patients who took various Andrographis preparations relative to 348 patients in control groups. **All of these studies showed that Andrographis preparations reduced cough severity [10].**

### Andrographis Heals the Gut

As mentioned above, Andrographis has long been used in traditional medicinal systems such as Ayurveda and traditional Chinese medicine (TCM) for treating gut infections.

In a 2013 study published in the *American Journal of Gastroenterology*, 224 patients with mild to moderate ulcerative colitis were either given 1200 or 1800 milligrams of Andrographis for 8 weeks. Ulcerative colitis is an inflammatory bowel disease that causes long-lasting inflammation and ulcers in the gut, affecting the innermost lining of the large intestine (colon) and rectum.

A colonoscopy was performed before the study started and after it ended. Stool frequency and the presence of blood in the stool were also assessed every two weeks.

At the end of the study, 60% of patients who received 1800 mg of Andrographis – relative to 40% of patients in the control group – **showed clinical symptoms of healing.**

Not only that, 50% of the patients who received the 1800 mg of Andrographis also showed mucosal healing, relative to 33% in the control group [11].

### Andrographis & Joint Pain from Arthritis

Arthritis affects more than 70 million Americans, leading to inflammation, pain, and stiffness in the joints and connective tissues. Over time, cartilage breaks down, bones erode, and joints become misshapen [12].

Our modern understanding is that rheumatoid arthritis (RA) happens because of the uncontrolled inflammation that is typical of an autoimmune disease. In such situations, the

body's defense mechanism malfunctions and attacks its own tissues (e.g., healthy joints) for a prolonged period of time.

An immune-signaling protein known as cachexin or tumor necrosis factor-alpha is one of the key drivers of inflammation. Andrographolide has been shown to lower levels of cachexin.

#### ParActin® and Mild Knee Osteoarthritis

In a randomized, double-blind, placebo-controlled study the efficacy of ParActin® (300 and 600 mg daily) was assessed on pain reduction in 103 patients with mild to moderate knee osteoarthritis [13].

Patients treated with ParActin® showed a significant reduction in pain relative to the control group. Stiffness, physical function, and fatigue all showed a significant improvement with ParActin® treatment.

At the end of the study, quality of life and Functional Assessment of Chronic Illness Therapy (FACIT) scores were significantly better in the ParActin®-treated groups compared to the control group.

#### ParActin® and Rheumatoid Arthritis

Similarly, in a randomized, double-blind and placebo-controlled study published in the journal *Clinical Rheumatology* in 2009, 60 individuals with compromised joints were given 100 mg of ParActin® or placebo in conjunction with methotrexate, three times a day for 14 weeks [14]. Methotrexate is proven to improve RA symptoms, but long-term use can cause serious infection and liver damage.

In this study, ParActin® was effective in **reducing the number and total grade of swollen joints, the number and total grade of tender joints**, as well as improving scores on HAQ-52 (52-week Health Assessment Questionnaire), and SF-36 (36-item short form survey) health questionnaires.

ParActin® treatment was associated with a reduction of various proteins, including enzymes, associated with cartilage damage. Currently, a human clinical trial testing the

safety and efficacy of ParActin® in patients with mild to moderate osteoarthritis is ongoing.

In other laboratory experiments, ParActin® and Andrographolide have also been shown to **support bone [15]12, cartilage [16]13, and muscle [17]14 health and recovery.**

Can Andrographis Help Fight Cancer?

Cancer results when our body's cells grow uncontrollably. When cells develop normally, they become more and more specialized in their function at each stage of development. For example, immature pancreatic cells that will eventually go on to make insulin will develop the cellular machinery to do so as they become mature pancreatic cells.

**When cancer happens, it interferes with normal cellular development and cells do not mature.** In fact, cancer cells resemble immature body cells – and the more they resemble immature cells, the more likely it is that they will spread to other locations – known as metastasis, often with fatal consequences.

So, it logically follows that if cancer cells can be made to forcibly undergo maturation or differentiation, they will lose the ability to grow uncontrollably. Indeed, in one laboratory study in mice, **researchers showed that Andrographis could induce differentiation in leukemia cells [18].** [Note: Leukemia is a cancer of the white blood cells, which are part of the immune system.]

Andrographis can induce differentiation in laboratory conditions – but does this mean it can fight cancer? Indeed, it can – at least under laboratory conditions. A systematic review of no less than **139 pre-clinical and clinical studies shows that Andrographolide has anticancer effects on almost all types of cell lines in laboratory experiments [19].**

Specifically, a 2019 study showed that Andrographolide prevented human colon cancer cells in culture from multiplying by inducing a process known as “programmed cell death” or apoptosis. Further, Andrographolide also displayed a combinatorial effect with chemotherapeutic anticancer drugs in these cells under laboratory conditions [20].

Similarly, the results of a 2019 study showed that a hot water extract of Andrographis could **stimulate the production of specific components of the immune system** and restore others to a more normal state.

Furthermore, the Andrographis extract prevented tumor growth and metastasis in these mice, once again by inducing apoptosis, but without causing severe body weight loss as many anticancer chemotherapy drugs tend to do.

Blood tests detected multiple bioactive Andrographis-derived diterpene compounds, suggesting that more than one might have contributed towards the beneficial effects seen in this study [21].

Andrographis extracts – especially bioactive lactone and diterpene compounds such as Andrographolide in them – have been shown to be very potent in suppressing the growth of various types of cancer cells in laboratory studies. In particular, Andrographolide has been shown to block the growth of human breast, prostate, and hepatoma tumors. It has even successfully been used in cancer chemotherapy [22].

Can Andrographis Help Prevent Alzheimer’s Disease?

As a closing note, Andrographis is even showing promise in helping to combat Alzheimer’s disease. In a 2019 study published in the journal *Plants – Basel*, researchers reported that three compounds isolated from Andrographis may help stop the formation of structures known as beta-amyloid plaques, which underlie neurotoxicity and dementia, including Alzheimer’s disease [23]. As noted by the researchers “*Andrographis paniculata* and *Spilanthes paniculata* are used extensively as medicinal herbs for the treatment of various ailments, and are reported to have neuroprotective properties.”

## Deeper Dive Resources

[\[1\] Andrographis: In-depth review](#)

[\[2\] Andrographolide, a Natural Antioxidant: An Update](#)

[\[3\] Andrographis: In-depth review](#)

[\[4\] Andrographolide, a Natural Antioxidant: An Update](#)

[\[5\] ParActin®](#)

[\[6\] Andrographolide, a Natural Antioxidant: An Update](#)

[\[7\] Andrographis: In-depth review](#)

[\[8\] Immunostimulant agents from Andrographis paniculata.](#)

[\[9\] Andrographis paniculata in the treatment of upper respiratory tract infections: a systematic review of safety and efficacy.](#)

[\[10\] Herbal Medicine for Cough: A Systematic Review and Meta-Analysis.](#)

[\[11\] Andrographis paniculata extract \(HMPL-004\) for active ulcerative colitis.](#)

[\[12\] HP Ingredients: ParActin Joint Health.](#)

[\[13\] A double-blind, randomized, placebo-controlled study to assess the efficacy of Andrographis paniculata standardized extract \(ParActin®\) on pain reduction in subjects with knee osteoarthritis.](#)

[\[14\] Efficacy of an Andrographis paniculata composition for the relief of rheumatoid arthritis symptoms: a prospective randomized placebo-controlled trial.](#)

[\[15\] Assessment of the Efficacy of ParActin® in Subjects With Mild to Moderate Osteoarthritis \(ParActin\)](#)

[\[16\] ParActin: Healthy Bone Support](#)

[\[17\] ParActin: Healthy Cartilage Support](#)

[\[18\] ParActin: Muscle Health and Recovery](#)

[\[19\] Cell differentiation-inducing diterpenes from Andrographis paniculata Nees.](#)

[\[20\] Andrographolide, a diterpene lactone from Andrographis paniculata and its therapeutic promises in cancer.](#)

[\[21\] Antiproliferative and Apoptotic Properties of Andrographolide Against Human Colon Cancer DLD1 Cell Line](#)

[\[22\] Multiple modulatory activities of Andrographis paniculata on immune responses and xenograft growth in esophageal cancer preclinical models.](#)

[\[23\] Andrographolide and analogues in cancer prevention.](#)

[\[24\] Multi-Target  \$\beta\$ -Protease Inhibitors from Andrographis paniculata: In Silico and In Vitro Studies.](#)

Study builds scientific support for HP Ingredients' ParActin for joint health  
<https://www.nutraingredients-usa.com/Article/2019/05/08/Study-builds-scientific-support-for-HP-Ingredients-ParActin-for-joint-health>

A double-blind, randomized, placebo-controlled study to assess the efficacy of Andrographis paniculata standardized extract (ParActin®) on pain reduction in subjects with knee osteoarthritis.

<https://www.ncbi.nlm.nih.gov/pubmed/30968986>

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