PARACTIN®

Bone, Joint & Muscle Health

The History of Andrographis . . .

Andrographis paniculata is an annual herbaceous plant in the family Acanthaceae, is one of the most commonly used medicinal plants in the traditional systems of Traditional Chinese and Ayurvedic medicines. It is widely cultivated in India, China, and Southeastern Asia.

Andrographis paniculata has shown a broad range of pharmacological effects such as anti-viral, antibacterial, prevention of common colds, anti-diarrheal, supports healthy blood glucose, and support healthy inflammatory response.

It is know as the "king of bitters" due to its bitter flavor profile. Andrographolide, an active ingredient in Andrographis, has been shown to be responsible for the herb's inflammatory modulating actions.

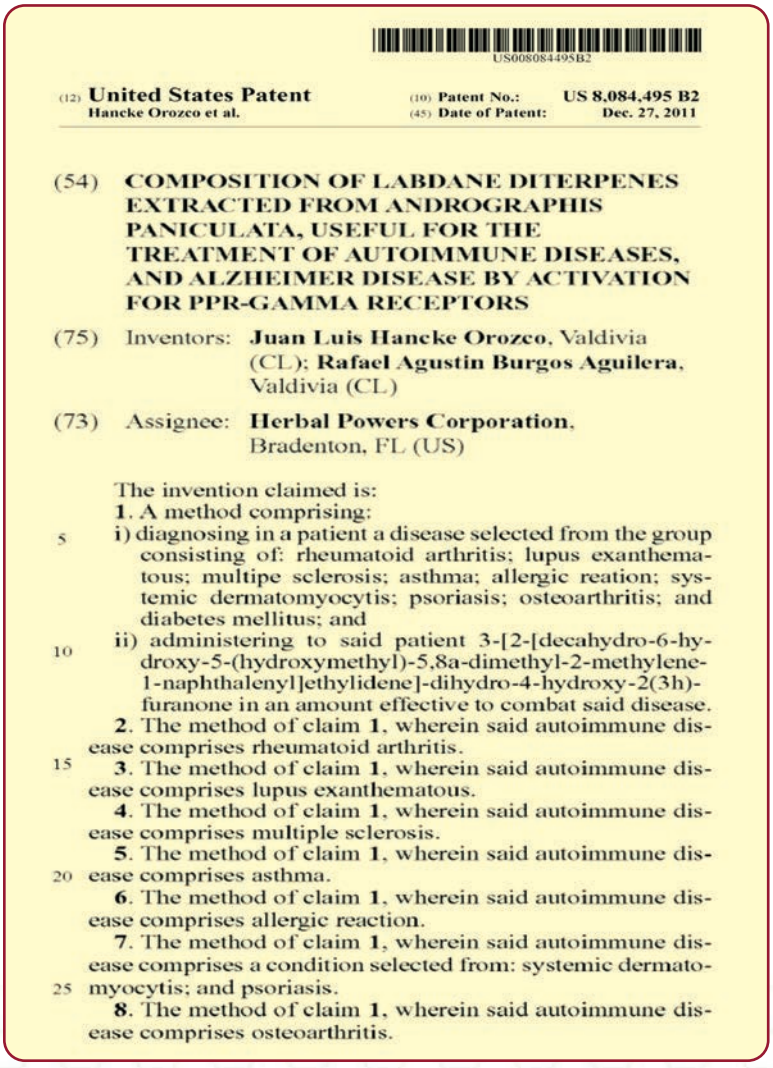
Patented, Standardized, Clinically Tested . . .

ParActin® is a patented extract of *Andrographis paniculata*, standardized to Andrographolide, 14-deoxyandrographolide, and Neoandrographolide. (US Patent No: 8,084,495 B2)

Preliminary research has shown **ParActin®** to promote healthy inflammatory response by naturally invigorating the PPAR gamma response, inhibiting NF-kappaB, the key regulator of our inflammatory response system, thereby naturally reducing pro-inflammatory cytokines and proteins associated with pain and redness from everyday activities.

Benefits of ParActin®. . .

- *Strengthen Joints & Eases Joint Flare-Ups*
- *Improves Flexibility & Mobility*
- *Maintains Bone Mass & Strength*
- *Supports Muscle Health*



US008084495B2

(12) **United States Patent**
Hancke Orozco et al.

(10) **Patent No.: US 8,084,495 B2**
(45) **Date of Patent: Dec. 27, 2011**

(54) **COMPOSITION OF LABDANE DITERPENES EXTRACTED FROM ANDROGRAPHIS PANICULATA, USEFUL FOR THE TREATMENT OF AUTOIMMUNE DISEASES, AND ALZHEIMER DISEASE BY ACTIVATION FOR PPR-GAMMA RECEPTORS**

(75) Inventors: **Juan Luis Hancke Orozco**, Valdivia (CL); **Rafael Agustin Burgos Aguilera**, Valdivia (CL)

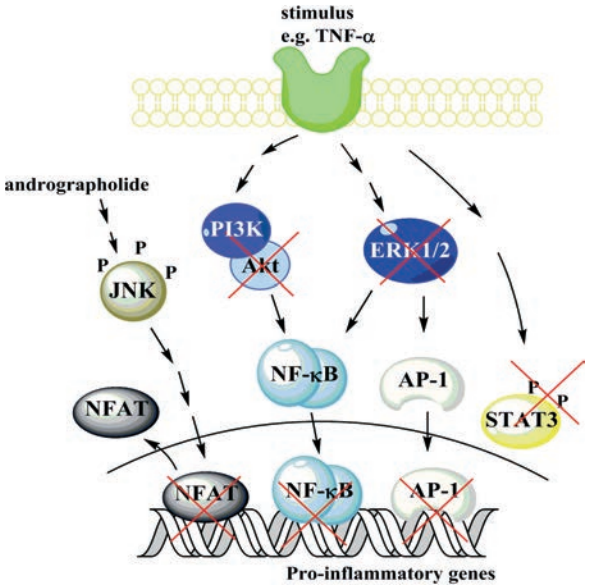
(73) Assignee: **Herbal Powers Corporation**, Bradenton, FL (US)

The invention claimed is:
1. A method comprising:
i) diagnosing in a patient a disease selected from the group consisting of: rheumatoid arthritis; lupus exanthematous; multipe sclerosis; asthma; allergic reation; systemic dermatomyocytis; psoriasis; osteoarthritis; and diabetes mellitus; and
ii) administering to said patient 3-[2-[decahydro-6-hydroxy-5-(hydroxymethyl)-5,8a-dimethyl-2-methylene-1-naphthalenyl]ethylidene]-dihydro-4-hydroxy-2(3h)-furanone in an amount effective to combat said disease.
2. The method of claim **1**, wherein said autoimmune disease comprises rheumatoid arthritis.
3. The method of claim **1**, wherein said autoimmune disease comprises lupus exanthematous.
4. The method of claim **1**, wherein said autoimmune disease comprises multiple sclerosis.
5. The method of claim **1**, wherein said autoimmune disease comprises asthma.
6. The method of claim **1**, wherein said autoimmune disease comprises allergic reaction.
7. The method of claim **1**, wherein said autoimmune disease comprises a condition selected from: systemic dermatomyocytis; and psoriasis.
8. The method of claim **1**, wherein said autoimmune disease comprises osteoarthritis.

ParActin® Mode of Action For Joint Health . . .

ParActin® Works By:

- *Inhibits NF-κB binding to DNA*
- *Inhibits IKKβ*
- *Inhibits COX-2 and reduce PGE2*
- *Inhibits NFAT – bone erosion*
- *Stimulates osteoblasts & calcium deposits*
- *Decreases Rheumatoid Factor - TNF-a*
- *Reduces IgA & IgM: cartilage damage*
- *Reduces C-Reactive Protein*
- *Promote regulatory T cell (Treg), CD4+CD25+*
- *Reduces AP-1 & STAT3 in synovial tissue*



NF-kB and NFAT are key regulators of our immune and inflammatory response system. Research has shown NF-kB to be activated in rheumatoid synovium cells. Both in vitro and in vivo research showed **ParActin®** to inhibit NF-kB activity and reduced the DNA binding of NF-kB, thereby reducing IL-2, COX-2, and PGE2.

In vitro studies also showed **ParActin®** to inhibit NFAT activity, a transcription factor linked with bone erosion. **ParActin®** also induces osteoblast mineralization on the bones via COX-2 expression, which could be of use in preventing osteoporosis.

Efficacy Findings from ParActin® Joint Health Clinical Trials . . .

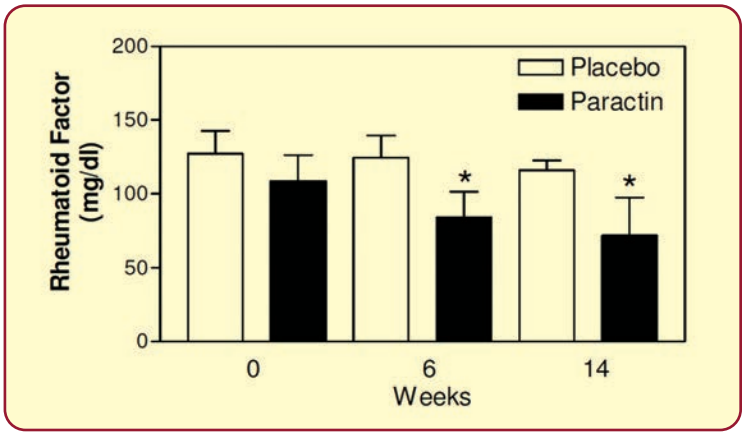
In a randomized, double blind, and placebo-controlled study published in Clinical Rheumatology 2009, 60 patients with rheumatoid arthritis were given 100mg of **ParActin®** or placebo three times a day for 14 weeks in conjunction with MTX.

ParActin® Group Showed Significant Diminishing In:

- **number of swollen joints (Paractin 9 vs Placebo 13)**
- **total grade of swollen joint (Paractin 11 vs Placebo 16)**
- **total grade of tender joints (Paractin 14 vs Placebo 17)**
- **HAQ (Paractin 19 vs Placebo 24)**
- **reduction of rheumatoid factor (Paractin 119 vs Placebo 130)**
- **reduction in IgA (Paractin 293.7 vs placebo 335)**

ParActin® was effective in reducing number of swollen joints, total grade of swollen joints and tender joints. **ParActin®** helps normalize Rheumatoid Factor, creatinkinase, hemoglobin, immunoglobin IgA and IgM. The reduction in IgA and IgM is beneficial as there is positive correlation between the grade of cartilage damage.

In another clinical published in Innovative Rheumatology Jan 2013, 8 patients with various rheumatoid conditions were given 300mg of **ParActin®** daily for 3 ½ years. Treatment with **ParActin®** showed significant improvement in number of swollen joints, total grade of swollen joints, total grade of tender joints, and improvement in Quality of Life. In addition, we are seeing significant reduction in Rheumatoid Factor, Eryhrocytes Sedimentation Rate, Pain, and C-Reactive Protein.



ParActin® Reduces Rheumatoid Factor

ParActin® significantly reduced the RF value from 110 to 70 mg/dl. The placebo group did not experience any significant change in RF value.

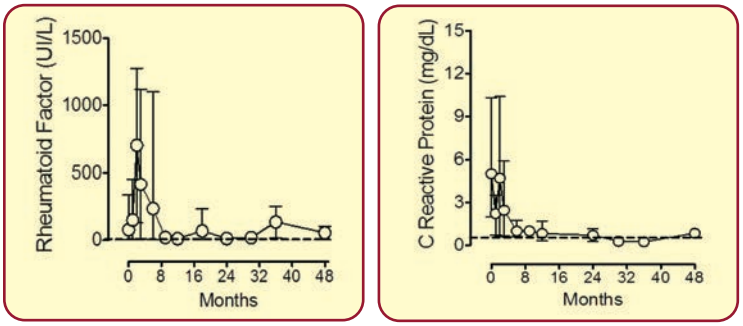
Innovative Rheumatology Jan 2013:

In another clinical published in Innovative Rheumatology Jan 2013, 8 patients with various rheumatoid conditions were given 300mg of **ParActin®** daily for 4 years.

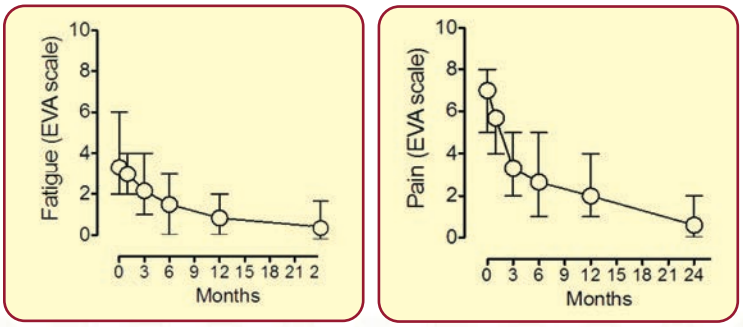
Treatment with **ParActin®** showed significant improvement in number of swollen joints, total grade of swollen joints, total grade of tender joints, and improvement in Quality of Life. In addition, we are seeing significant reduction in Rheumatoid Factor, Erythrocytes Sedimentation Rate, and C-Reactive Protein.

Serum immunological parameters of inflammation were reduced progressively during 48 months of **ParActin®** treatment. After 24 months of treatment with Paractin®, 6 patients were administered only with **ParActin®** as monotherapy. All patients are showing full tolerability, no remission of clinical and serological inflammatory parameters.

Significant Reduction in Rheumatoid Factors and C-Reactive Protein



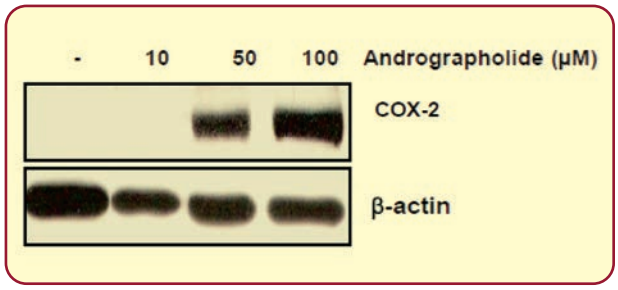
Reduction in Fatigue & Pain



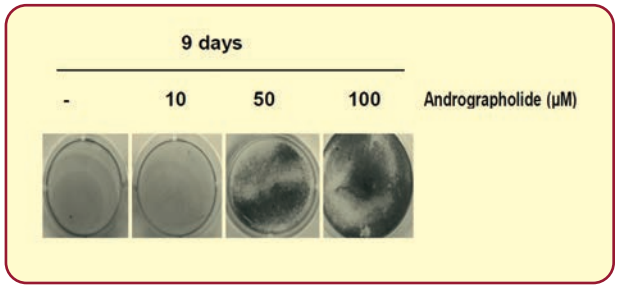
ParActin® Beneficial for Bone Health . . .

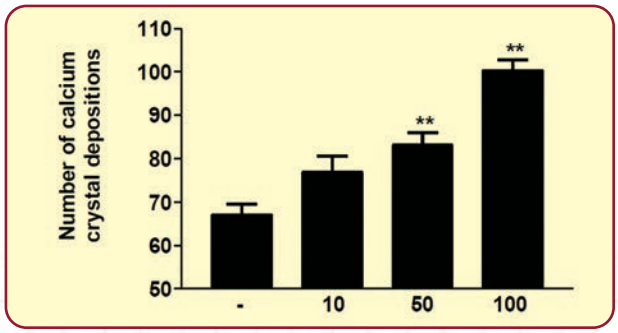
In the process of bone formation, osteoblasts produce a calcium and phosphate-based mineral that is deposited. Almost the entire bone matrix is mineralized by the osteoblasts. An osteoclast is a type of bone cell that resorbs and breaks down bone tissue. Balance of bone formation and bone resorption tends to be negative with age, particularly in post-menopausal women, often leading to a loss of bone serious enough to cause fractures, which is called osteoporosis. **ParActin®** increases osteoblasts and has a mineralizing effect on the bones with the increase of calcium deposits. Therefore, it could be beneficial in osteoporosis.

ParActin® Increase Osteoblast Via COX-2 mRNA Expression



ParActin® Has Mineralizing Effect, Increasing Calcium Deposits In TheBones





PARACTIN® • Bone, Joint & Muscle Health

ParActin® For Muscle Health . . .

In research published in Skeletal Muscle 2014, we investigated the effects of **ParActin®** on the onset of dystrophy in mdx mice, an animal model used to study MD.

ParActin® Reduces Muscle Damage and Lowered Serum Creatine Kinase

Administration of **ParActin®** reduced necrosis, and cumulative muscle damage compared with vehicle-treated mdx mice. Concordantly, serum CK levels were decreased in **ParActin®** treated mdx mice compared with control mdx mice, with an approximate 50% recovery score.

Cumulative Muscle Damage in Exercised mdx Mice

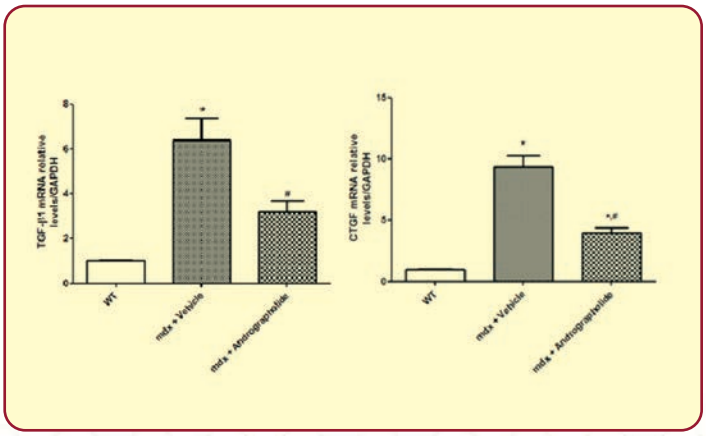
	Necrosis	Regeneration	Cumulative Damage
mdx + vehicle	7.63 ± 0.85	42.14 ± 4.03	49.77 ± 4.61
mdx + ParActin®	4.14 ± 0.51b	30.23 ± 2.86a	34.37 ± 2.97a

ParActin® Reduces Fibrosis: Fibronectin and Collagen III

Development of fibrosis is characterized by an increase in extracellular matrix compounds such as fibronectin and several types of collagen. **ParActin®** treatment decreased fibronectin and collagen III protein levels. **ParActin®** treated mice exhibited less severe muscular dystrophy, performed better in an exercise endurance test, and had improved muscle strength compared to untreated mdx mice.

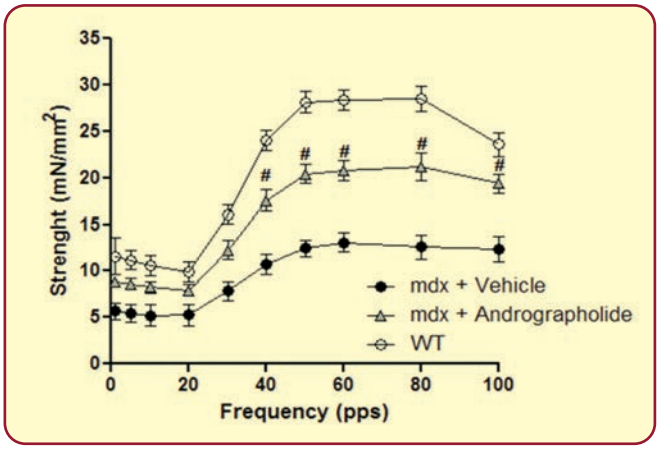
ParActin® Reduces Pro-Fibrotic Factor: TGF-b, b, b, b, CTGF, and Collagen Type I

ParActin® treatment reduced TGF-β, an important pro-fibrotic factor in mdx skeletal muscle. In addition, Connective tissue growth factor (CTGF) and collagen type I, two downstream pro-fibrotic factors in dystrophic skeletal muscle were also reduced by **ParActin®** treatment.



ParActin® Improves Skeletal Muscle Strength and Exercise Performance

ParActin®-treated mdx mice showed an enhanced exercise performance, significant increase in the generation of isometric force, and higher strength in the TA muscle. This is evidenced by a significant decrease in the number of detentions in the treadmill running protocol, with a recovery score of 45.5%.



HPIngredients
Delivering Herbal Science

707 24th Ave. West • Bradenton, FL 34205

Toll Free: 877-437-2234

Telephone: 941-749-7088 **Toll Free Fax:** 866-278-2874

Email: Info@HPIngredients.com

Corporate Website: www.HPIngredients.com