



PARACTIN® Joint Health

Inflammation and Joint

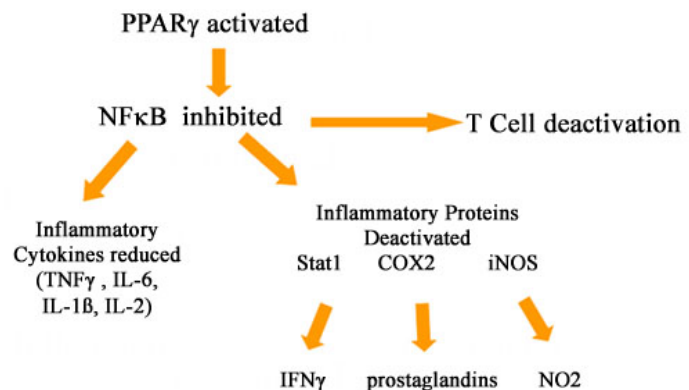
Arthritis affects more than 70 million Americans. Arthritis is a disease that results in inflammation, pain and stiffness, primarily in the joints and connective tissues. Over time, the cartilage may break down, the bone erodes and the joints become misshapen. Inflammation is a complex process that produces swelling, pain, warmth and redness. Many forms of arthritis may result from the uncontrolled inflammation of an autoimmune disease, in which the body's defense mechanism malfunctions and attacks its own tissues or when inflammation refuses to die down.

Current Medications

- **Nonsteroidal anti-inflammatory drugs (NSAIDs):** block the COX enzyme and inhibit NFκB.
- **Corticosteroids:**
- **COX-2 inhibitors:** block COX-2 without affecting COX-1 enzymes.
- **Tumor necrosis factor (TNF) Blockers:** New injectable for RA, inhibits TNF inflammation factor in joints
- **Interleukin-1 (IL-1):** new injectable for RA, inhibits the action of IL-1.

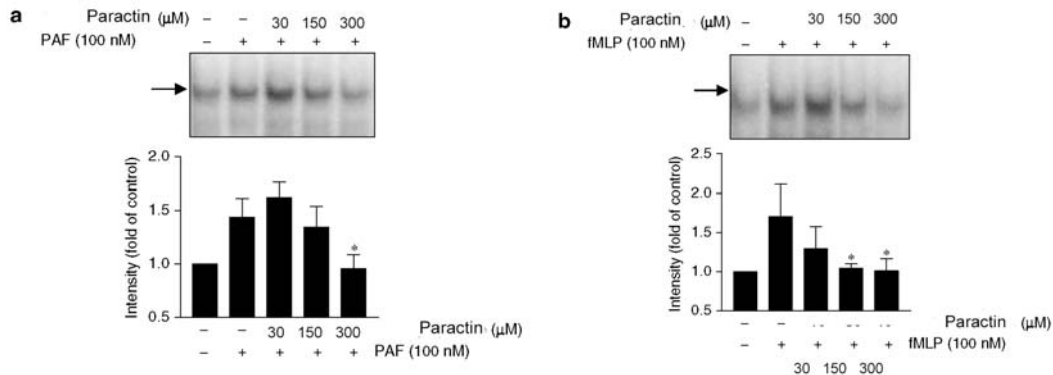
What is ParActin®?

ParActin® is a patented extract of *Andrographis paniculata*. Our research has shown ParActin® to naturally activate PPAR gamma, thereby inhibiting NF kappa B, reduce pro-inflammatory cytokines such as Interleukin 2, Interferon, TNF α, and COX 2.



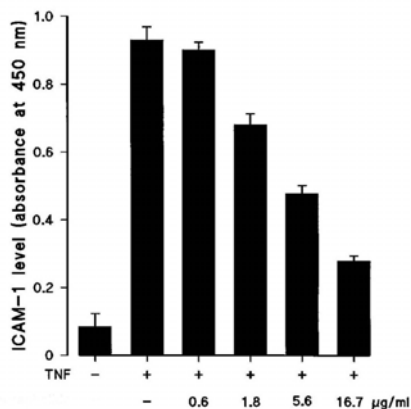
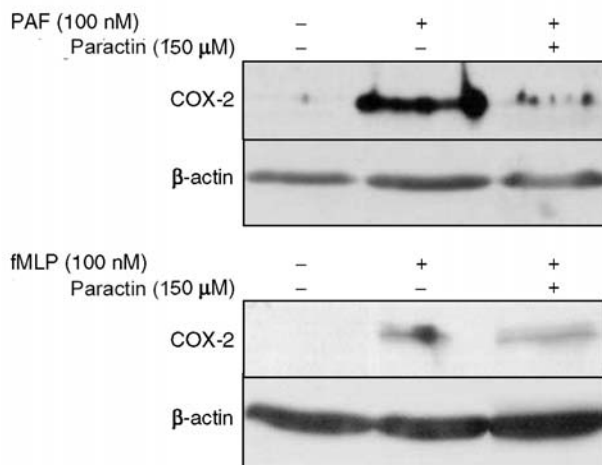
ParActin® Inhibits NF-kappaB—Key regulator of Inflammatory Response System

NFkappaB is a critical gene that regulates our immune and inflammatory response system. Research has shown NFkB to be activated in rheumatoid synovium cells. NSAIDs, which is commonly used to relieve joint pain and inflammation, has shown NFkappaB inhibitory activity. Both in vitro and in vivo research showed ParActin® to inhibit NF-kB activity and reduced significantly the DNA binding of NF-kappaB.



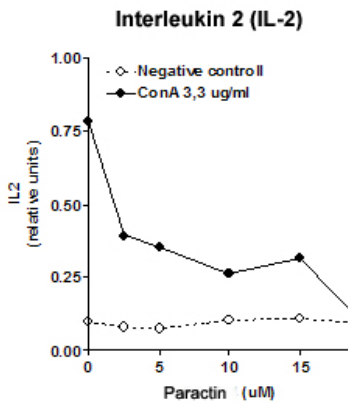
ParActin® Reduces COX-2 Enzyme

COX-2 is an enzyme responsible for causing inflammation and pain. COX-2 inhibitors are newly developed drugs for inflammation that selectively block the COX-2 enzyme. Blocking this enzyme impedes the production of the chemical messengers (prostaglandins) that cause the pain and swelling of arthritis inflammation. Research has shown COX-2 enzyme to be regulated by NF-kB. When NFkappaB is inhibited, COX-2 is reduced. In vitro research showed ParActin® to inhibit the COX-2 expression and is a natural COX-2 inhibitor.



ParActin® -- Natural TNF α Inhibitor

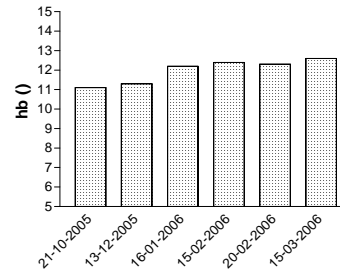
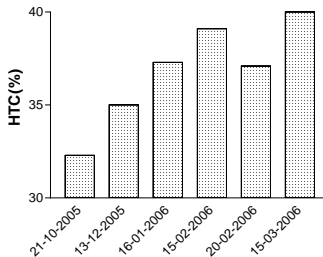
Tumor necrosis factor (TNF-α) is a cytokine involved in inflammation and is a member of a group of cytokines that stimulate the acute phase reaction. TNF causes apoptotic cell death, cellular proliferation, differentiation, inflammation, tumorigenesis, and viral replication. Research has found Tumor necrosis factor (TNF)-alpha to be present in synovial fluid of patients with rheumatoid arthritis. In vitro research with ParActin® showed the ability to significantly reducing pro-inflammatory cytokines TNF-alpha and is a natural TNF-alpha inhibitor.



ParActin® Natural Interleukin-2 Inhibitor

According to the results of a randomized controlled trial published in the December issue of Arthritis & Rheumatism, blocking interleukin activity may be effective in reducing symptoms of rheumatoid arthritis (RA). In vitro and in vivo research had shown ParActin® to significantly reduce Interleukin 2 (IL2) cytokines. In mice induced with multiple sclerosis, IL2 return to normal after 20 days of treatment with ParActin®. The showed ParActin® to be a natural Interleukin 2 inhibitor.

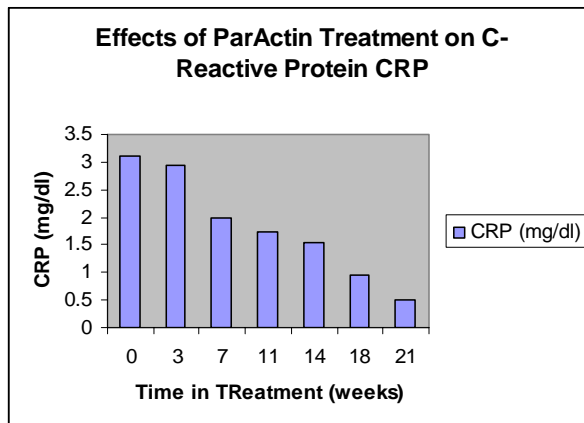
ParActin® normalize Hematocrit and Hemoglobin in Patients with RA



Patients taking ParActin® is showing improvement of hematocrit level from below normal level of around 32.4% (pre-treatment) to a normal average level of ~40% at the end of the 18 weeks clinical study.

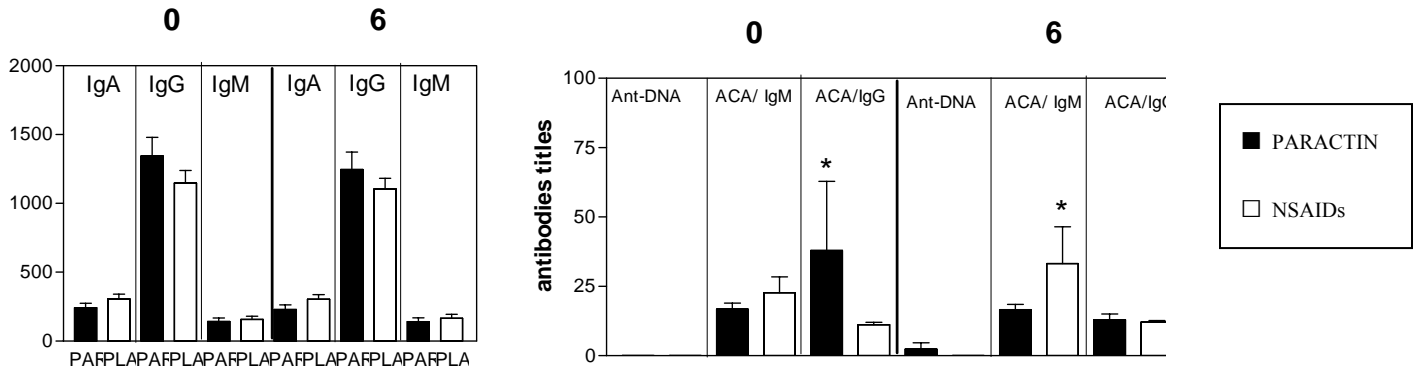
Patients taking ParActin® is showing gradual improvement in hemoglobin level from below normal level of 11% (pre-treatment) to healthy normal level of 12.6% at the end of study.

ParActin® normalize C-Reactive Protein in Patients with RA



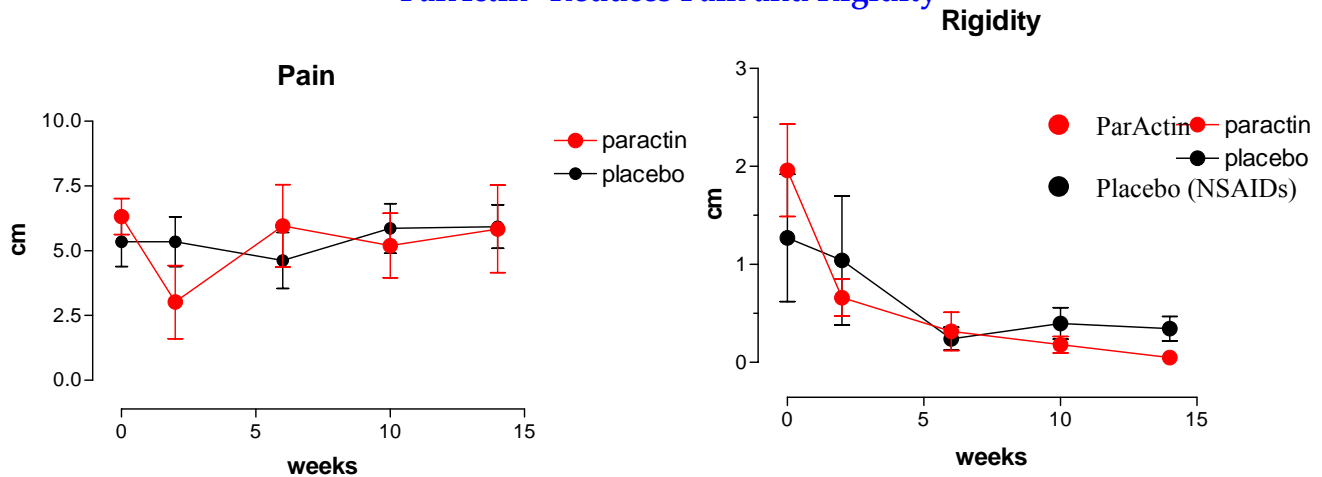
Patients with RA usually showed high level of CRP, a protein involved in acute and chronic inflammatory activity in RA. Patients treated with ParActin® is showing improvement in CRP level from above normal CRP level of over 3% at pre-treatment to a normal level of 0.5%. NSAIDs, which exhibits NFkappaB inhibitory activity has been shown to effectively reduce CRP level. This research showed that ParActin®, which also exhibits NFkappaB inhibitory activity, is effective in normalizing CRP level, and maybe useful in healthy joint support.

ParActin® reduces IgG and IgM Anti-Cardiolipin Autoantibodies

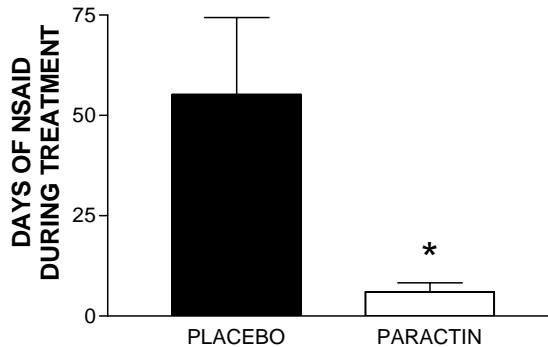


IgG and IgM anti-cardiolipin autoantibodies (ACA) are usually present in high levels in patients with rheumatoid arthritis. 14 Patients were given either 200mg of ParActin® or NSAIDs as placebo group. At the end of the 6 weeks trial, both groups are showing significant reduction in the IgG level, There are significant reductions in both classes of IgM and IgG anti-cardiolipin antibodies (ACA) in the ParActin® group, which correlate with a decrease in the RA activity. The NSAIDs placebo group is showing increase in IgM ACA titers and no change in IgG ACA titers.

ParActin® Reduces Pain and Rigidity

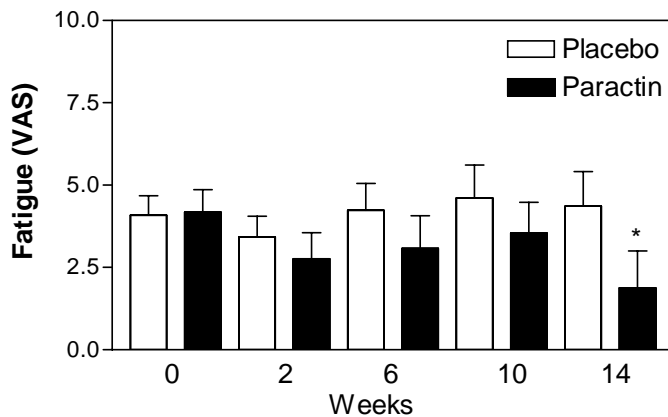


ParActin® treatment significant decrease pain more than the NSAIDs placebo group up to 2 weeks of treatment, after which the analgesic effect decreases to overlap the NSAIDs placebo group at week 5, with no change thereafter. The rigidity chart shows that both ParActin® and NSAIDs placebo groups significantly decrease the intensity of rigidity test with ParActin® group decreasing more than the placebo group throughout the 15 weeks treatment period. These findings indicate that ParActin® maybe as effective as traditional NSAIDs in reducing pain and improving rigidity in patients with early stage rheumatoid arthritis.



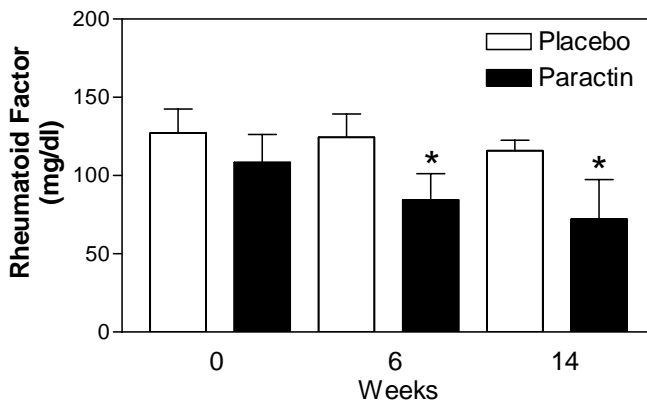
ParActin® Reduces the Need to Use NSAIDs to Reduce Pain

The study showed that the placebo group is taking NSAIDs over 55% of the study period, while ParActin® group only take NSAIDs ~ 5% of the study period.



ParActin® Reduces Fatigue

Patients taking ParActin® are experiencing significant reduction in fatigue from 4.0 to 1.25 as measured by VAS. The placebo group do not showed any improvement in fatigue even though the placebo group take NSAIDs >55% of the study period.



ParActin® Reduces Rheumatoid Factor

ParActin® significantly reduced the RF value from 110 to 70 mg/dl. The placebo group, even though taking NSAIDs most of the study period, did not experience any significant change in RF value.