



INNOVUS

CONTACT

OFFICE: +27 (21) 808 3826

FAX: +27 (21) 808 3913

EMAIL: info@innovus.co.za

Composition and Method for Treating Muscle Tissue

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A novel herbal remedy for the treatment of
contused and fatigued muscle tissue



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BRIEF DESCRIPTION

Supplements to enhance athletic performance and delay fatigue are used at all sporting levels - from recreational to professional athletes. When exercise is exhaustive it can lead to tissue damage and inflammation. Additionally contusion (bruising) injuries are common during contact sports and the inflammation associated with the injury can be painful, as well as leading to secondary damage of the area after the bruising. Currently non-steroidal anti-inflammatory drugs (NSAID) are most commonly used, but its side-effects (ulcers, cardiovascular implications) make use dangerous for some individuals. Alternative treatments such as anti-oxidants can delay the healing process by interfering with signalling within the body

A need exists for an effective treatment of skeletal muscle fatigue after exercise as well as muscle injury. A plant derived compound from *Prosopis glandulosa* pods can counter these effects, without the identified side effects.

Tests on a rat model scientifically show that the plant preparation improves skeletal muscle force production. Additionally, it leads to reduced inflammation associated with skeletal muscle injury such as contusions and accelerated muscle regeneration after the injury at success rates of at least equal to or better than conventional medication on the market

TARGET MARKET

- Manufacturers of sports supplements
- Pharmaceutical/complimentary medicine companies
- Any individual/athletes needing to augment and accelerate muscle regeneration after injury
- Race horse industry

VALUE PROPOSITION/ BENEFITS

- The product simultaneously leads to reduced muscle inflammation, which leads to accelerated regeneration.
- It is more effective as an anti-inflammatory agent than known NSAID products
- It can be added as an ingredient to existing products such as shakes, chocolate bars, etc.
- Increased recovery of exercise induced muscle fatigue

COMPETITIVE ADVANTAGE

There is market need for an effective treatment that the preparation is made from a plant-derived product, that is easy and cheap to cultivate. Harvesting of the plant will not deplete any natural resources.

TECHNICAL DESCRIPTION

P. Glandulosa, commonly referred to as Honey Mesquite, has been discovered to strengthen skeletal muscle and boost healing of contused skeletal muscle. Exercise induced muscle fatigue is common among all levels of exercise due to prolonged athletic activity. This is reversible through rest and appropriate nutrition. However, when exercise is exhaustive it can lead to tissue damage and inflammation.

Test subjects were treated with *P. glandulosa*, prior to injury and after injury. Observation of neutrophil infiltration was a measure of rate of recovery. Chronic *P. glandulosa* treatment was found to significantly reduce neutrophil infiltration into the injured area, suggestive of a decreased pro-inflammatory signal and probably less neutrophil associated secondary damage. Large differences between

P. Glandulosa treatment and the NSAID treatment were evident.

The plant preparation can be dispensed as:

- Oral preparation, such as tablets, wafers, sachets, capsules or suspensions
- Topical preparation as a gel, suspension, cream or ointment to the skin in the region of the damaged muscle tissue
- Nutritional health bar, liquid drink or powder

PRINCIPAL RESEARCHERS

Professor Barbara Huisamen
Division of Medical Physiology, Department of Biomedical Sciences, Faculty of Medicine and Health Sciences, Stellenbosch University

Dr Cindy George
South African Medical Research Council (SA-MRC)

A novel therapeutic agent that has the ability to increase skeletal muscle strength



INNOVATION STATUS

Animal studies have been successfully completed.

The following patent applications have been filed for the technology:

South African patent (application number 2016/07027), USA patent (application number 15/126,870), Chinese patent (application number 2015800256400) and European patent (application number 15764383,4)