PROSOPIS GLANDULOSA

BACKGROUND
Athletic performance is an important component in all sports activities and most athletes strive to improve and optimise their performance. Supplements to enhance athletic performance and delay fatigue are often used by both recreational and professional athletes. Exhaustive exercise leads to tissue damage and inflammation. Contusion injuries are common during contact sports and can lead to secondary tissue damage as well as pain from the inflammation. Currently non-steroidal anti-inflammatory drugs (NSAID) are used to treat contusion injuries; however, these drugs may have serious side effects such as ulcers and cardiovascular complications. Alternative treatments are available; however, these can delay the healing process by interfering with signalling within the body. Studies have shown that anti-oxidants found in herbal preparations can result in prolonged performance during exercise by decreasing oxidative stress as well as aiding muscle regeneration, resulting in accelerated muscle recovery after injury.

TECHNOLOGY DESCRIPTION
The SAMRC and Stellenbosch University have identified a plant-derived compound from Prosopis glandulosa pods that can be used as an effective treatment for skeletal muscle fatigue after exercise as well as muscle injury. The compound contains anti-oxidants, which are known to decrease the oxidative stress during exercise and aid muscle regeneration. During muscle injury, chemotactic factors are released by the myocytes and other surrounding cells, causing immune cell mobilization and attraction to the injured area, which then result in inflammation. The P. glandulosa preparation is then applied topically on the injured or bruised muscle, or taken through oral administration, depending on the type of preparation, leading to reduced neutrophil infiltration and decreased pro-inflammatory signal. The use of P. glandulosa on bruised muscle can strengthen the skeletal muscle, boost healing and reduce the risk of secondary muscle damage. Furthermore, it leads to accelerated muscle regeneration at success rates of at least equal to or better than conventional medication on the market. The plant preparation can be dispensed as oral preparations, such as tablets, wafers, sachets, capsules or suspensions; topical preparations as a gel, suspension, cream or ointment to the skin in the region of the damaged muscle tissue; as well as nutritional products such as nutritional health bars, liquid drinks or powders.

VALUE PROPOSITION
An effective, novel and cost-effective plant-derived product for treatment of sport muscle injuries without any side effects. The product offers the following benefits:
- It can be added as an ingredient to existing products such as nutritional products.
- Increased recovery of exercise induced muscle fatigue.

CURRENT STATUS
Pre-clinical animal studies on rats have been successfully completed.

INTELLECTUAL PROPERTY STATUS & PUBLICATIONS
Patent applications have been filed in the following countries:
- South Africa (2016/07027),
- USA (10,265,365 B2),
- China (2015800256400)
- Europe (15764383,4)
Publications:
- George, c., Lochner, a. and Huisamen, b., 2011. The efficacy of Prosopis glandulosa as antidiabetic treatment in rat models of diabetes and insulin resistance. journal of ethnopharmacology, 137(1), pp.298-304.

OPPORTUNITIES
The SAMRC and INNOVUS- Stellenbosch University are seeking suitable opportunities for market entry of the product as well as partners for assistance with the regulatory approvals of the technology in South Africa, China, United States and EU.

FOR MORE INFORMATION PLEASE CONTACT:
info.ship@mrc.ac.za
+27 (0)21 938 0991/ 21 808 4546