ALGINATE BILAYER AS A SLOW RELEASE WOUND DRESSING

Project Overview
An alginate based composite bilayer film formulation can act as slow-release wound healing vehicle which can be used to treat chronic wounds.

Product / Service Image

Technology / Innovation Summary
The bilayer is composed of an upper layer impregnated with model drug (active ingredient) and a drug free lower layer, which acted as a rate-controlling membrane. Further, the bilayer film dressing contains of natural polymers (alginate and gelatin), both are bio-compatible and have the capability to provide moist environment for faster wound healing.

Business Opportunity (i)
The biomaterial polymers market is expected to show the highest growth at a CAGR of 22.1% (2012-2017) due to tremendous ongoing R&D on biodegradable and bio-compatible polymeric biomaterial and its use in a wide range of applications. Plastic surgery and wound healing applications are expected to witness the highest growth.

Market Overview (i)
Global Advanced Wound Care (AWC) Market was worth USD 6.8 Billion in 2013, is expected to grow to USD 9.1 Billion by 2018. The market is primarily driven by increased life expectancy and growing incidence of lifestyle associated disorders such as Diabetes, which has resulted in increased prevalence of hard to heal wounds such as chronic foot ulcers. The inclining burden of such wounds and improved understanding of wound healing has led to the emergence of AWC products and therapies.

Intellectual Property Status
Patent Filed/Pending, PCT/MY2104/000222, PI2013701483

Project Status
Further R&D and tests required.

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Competitive Advantages
Active ingredients (e.g. anti-inflammatory, antimicrobial) are released in a slow manner into the wound bed provide a controlled-release mechanism. The product provides moist environment for wound healing as it is highly absorbable and it allows easy and painless removal. Besides, it also provides porosity for gaseous and fluid exchange, high conformability as well as mechanical stability compared to single component base single layer film dressing. In addition, its preparation method is cost effective.

Competitive Environment Overview
There are limited to even no commercial competitors currently developing industrial-scale alginate based composite bilayer film formulation as most of them are still under development stage. The key players in the advanced wound care market include 3M, Coloplast, ConvaTec, Kinetic Concepts, Molnlycke Health Care, Smith & Nephew and etc.

Project Challenges
One of the key challenges for this project is to gain worldwide regulatory approvals from relevant food & drug regulatory authorities, which is a time consuming and costly process. This challenge can be mitigated by working with potential partners who have experience in these processes.

Financial Overview
Wound Care Market in Malaysia earned revenues of USD 55.1 million (RM 192.9 million) in 2010 and the biomaterials for chronic wounds are estimated at RM 24.11 million. As the alginate based composite bilayer film formulation is relatively new in the market, with its cost effective and effective treatment on chronic wounds’, we are assuming the product will be able to capture at least 3% of the market demand in 3 years’ time, growing at a CAGR of 22.1%.

Financial Requirement
The key funding component is for pre-commercialization stage, especially legal expenses for food & drug regulatory control which must be completed before commercialization.