



### IMPROVED WOUND DRESSING HYDROGEL

#### IITM Technology Available for Licensing

#### Problem Statement

- Current wound dressings lack optimal efficacy in promoting accelerated wound healing, particularly for chronic ulcers.
- Existing wound dressing options include medicated gauze and textile-based dressings with limited capabilities.
- Hydrogel materials have shown potential in maintaining a moist microenvironment for wound healing but may lack specific bioactive ingredients to enhance the process.
- Therefore, there is a need for a **novel wound dressing hydrogel material incorporating oatmeal as a bioactive ingredient** to improve wound healing outcomes, especially for chronic ulcers.

#### Intellectual Property

- IITM IDF Ref. 1507
- IN 467099 - Patent Granted
- NBA Approval - INBA3201901324

#### Technology Category/ Market

**Category - Advanced Wound Care**

**Applications** - Chronic Wound Management, Acute Wound Healing, Dermatological Applications

**Industry** - Healthcare and Medical Devices, Pharmaceuticals and Biotechnology

**Market** - Advance wound care market is expected to be valued at US\$ 14,667.7 million by 2034 with a growth at a **CAGR of 2.4%**.

#### TRL (Technology Readiness Level)

TRL-4, Technology validated in relevant environment.

#### Research Lab

**Prof. Vignesh Muthuvijayan**  
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#### Technology

The present invention pertains to a wound dressing hydrogel containing polysaccharides, with **oatmeal as a crucial bioactive component**.

#### Components

1

- The hydrogel for wound dressing includes oatmeal or processed oatmeal as a bioactive material, along with water-soluble polysaccharide, providing a range of 20-60% oatmeal and 2-25% polysaccharide by dry weight.

2

- Additional components may include fillers such as biocompatible polysaccharides, proteins, or synthetic polymers, along with physical and chemical crosslinkers to enhance structural integrity.

3

- Secondary bioactive molecules like silver nanoparticles or antibiotics can be incorporated for disinfection and antiseptic purposes.

#### Key Features / Value Proposition

##### 1. Innovative Wound Healing Solution:

- Utilizes processed oatmeal as primary bioactive ingredient, enhancing wound healing with antioxidant and anti-inflammatory properties.

##### 2. Advanced Hydrogel Technology:

- Blends processed oatmeal with water-soluble polysaccharide, offering a synergistic effect for chronic wound treatment.

##### 3. Customizable Processing:

- Enables purification, extraction, and concentration of oatmeal's beneficial constituents, optimizing ease of fabrication and therapeutic efficacy.

#### CONTACT US

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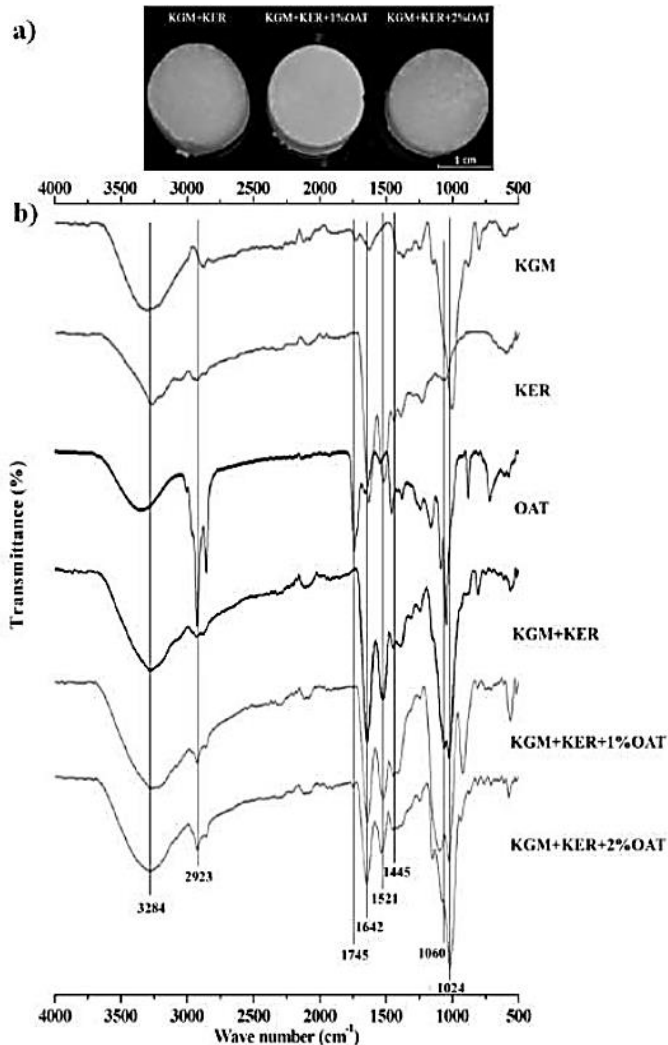
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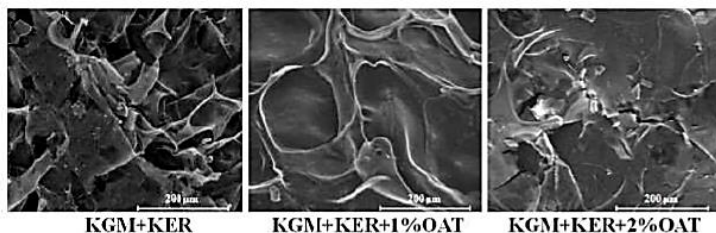
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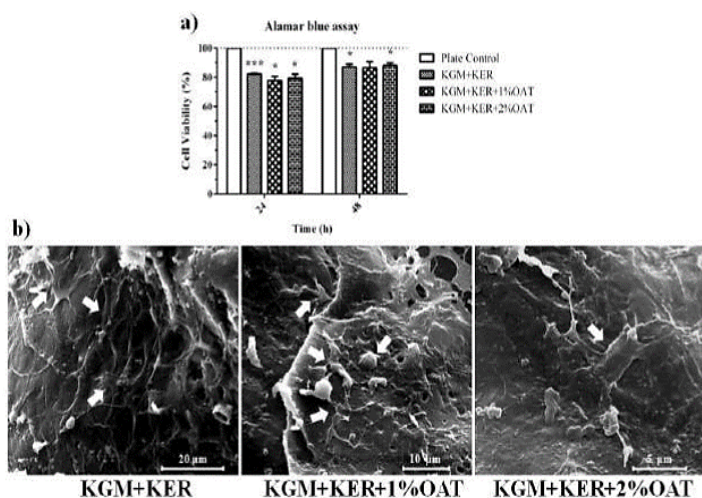
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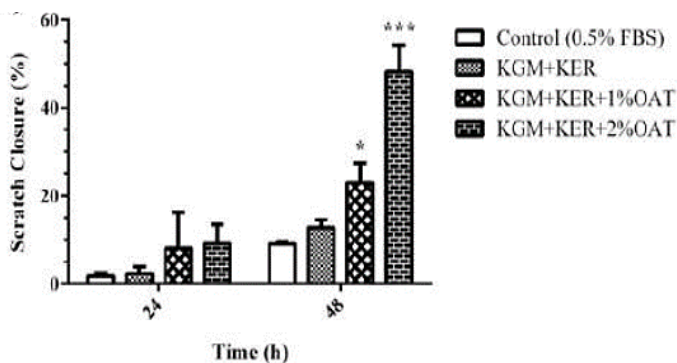
**Fig.1a.** illustrates the appearance of the fabricated hydrogels;  
**1b.** plots the ATR-FTIR spectra of the materials and fabricated hydrogels.



**Fig.2.** Scanning electron micrographs of a) KGM+KER, b) KGM+KER+1%OAT, and c) KGM+KER+2%OAT hydrogels, showing the surface morphology and microporous nature.



**Fig. 3.** Summarizes the results of a) cell viability estimation using Alamar blue assay, b) Scanning electron micrographs of cell attachment on the various hydrogels



**Fig. 4.** Summarizes the results of a) cell viability estimation using Alamar blue assay, b) Scanning electron micrographs of cell attachment on the various hydrogels.

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