

HOMEOPATHY - MODERN MEDICINE INTERFACE: NANOFIBROUS SCAFFOLDS LOADED WITH HOMOEOPATHIC MOTHER TINCTURE FOR WOUND HEALING APPLICATIONS.

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Being a complex protective barrier, the skin is frequently exposed to various potential thermal, physical, microbiological, or chemical hazards. Such hazardous factors may disrupt the skin's normal structure and function resulting in acute or chronic wounds. Due to several limitations like immune rejection or lack of availability associated with the skin grafts, the application of synthetic biosubstitutes developed through tissue engineering approaches is gaining popularity in recent times. Traditional wound healing substitutes loaded with bioactive molecules such as drugs, growth factors, and so on have been extensively researched in order to promote better wound healing and restore normal tissue function. The use of nanofibrous scaffolds has enhanced the biomaterial performance, thereby offering a promising solution as wound dressings in the field of skin tissue engineering.

Presently, homoeopathic mother tincture extract of *Syzygium cumini* incorporated in poly(ϵ -caprolactone) nanofibrous scaffolds were fabricated in the concentration range of 5 %–20 % (w/w) and its various physicochemical and biological properties were evaluated. The fabricated nanofibers structurally mimicked the extracellular matrix, with enhanced hydrophilicity for better cellular attachment and proliferation. These scaffolds also showed antibiofilm activity against *P. aeruginosa* and *S. aureus* and exhibited superior antioxidant activity. Furthermore, the extract incorporation was observed to be beneficial in cell adhesion, viability, growth and proliferation. This novel poly(ϵ -caprolactone) nanofibrous scaffold loaded with homoeopathic mother tincture extract of *Syzygium cumini* might be a suitable biomaterial for clinical management of wounds and reconstruction of damaged/diseased skin tissues.

References:

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