

New Material for Wound Healing

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Wounds can now be efficiently healed by a new material- that is non-toxic and inhibits microbial growth, claim scientists at the University of Calcutta and CSIR Central Leather Research Institute, Chennai in their recent study.

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Researchers at the University of Calcutta in collaboration with CSIR Central Leather Research Institute, Chennai have developed a new substance that will enhance the wound healing process when applied to accidental or surgical wounds. The substance is made from two natural substances- guar gum and fish collagen. Guar gum is chemically treated with a common laboratory reagent ethylenediamine to form aminated carboxymethyl guar gum, which is crosslinked to fish collagen using the drug ceftazidime.

Interestingly this is the first study to show that natural polymers like guar gum and fish collagen can be improved for their mechanical strength, chemical stability and biomedical application by using a drug to crosslink them. The scientists tested the material on two infection-causing bacteria namely *Staphylococcus aureus* that causes skin abscesses and respiratory sinusitis, and *Pseudomonas aeruginosa*, an opportunistic pathogen that causes sepsis and ventilator-associated pneumonia.

They found that the material was an excellent drug delivery platform that efficiently delivered the drug ceftazidime killing bacteria without significantly harming the normal cells of the body. They advocate that if applied to wounds, this could inhibit bacterial growth, speeding up the process of wound healing. The scientists say that it is very useful by proclaiming, "...it (the newly synthesized substance) can be applied as an efficient wound healing material because the inherent antimicrobial property of the material will not allow the microbial growth on the wound site, leading to quick healing of the wound".

Surgery is a cure for many diseases, but also risks an individual to bacterial and other microbial infections. Surgical wounds have to be managed with utmost care, because the contrary would risk the patient's health and life. This new material could help doctors worldwide to manage surgical and accidental wounds by preventing infections and aiding the process of healing.

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