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IIT-D develops sprayable hydrogel for improving wound healing

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Exhibits promising results in pre-clinical trial



Researchers at the Indian Institute of Technology Delhi (IIT-D)’s Centre of Biomedical Engineering (CBME) have initiated a study to explore methods to improve wound healing by promoting the human body's natural healing process.

The research has led to the creation of a new sprayable hydrogel system, which they tested in a rat model during the preclinical trials and got encouraging results.

Like a human body that releases important metal ions namely calcium, copper, and zinc in a certain order at injury sites, this engineered biocompatible sprayable hydrogel fills the wound and releases these multi-ions from medical grade Polylactic acid (PLA) based micro-carriers in sync with the body's natural process, effectively enhancing the healing process.

These metal ions are the unsung heroes of the natural healing process, fighting infection, reducing inflammation, supporting cell migration, and stimulating new tissue growth.

The preclinical trial results showed that the sprayable hydrogel, on which the IIT Delhi researchers are working, provided faster and more effective healing within in 6 days in comparison to 12 days by similar products available in the market.

Encouraged by the initial results, the researchers have filed for an Indian patent, which has been submitted, further underscoring the potential impact of the sprayable hydrogel they are working on in the wound care area.

“In the future, we also plan to collaborate with clinicians to assess the efficacy of this sprayable hydrogel through human clinical trials,” said the researchers.