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Korea develops new hydrogels for wound management

November 7, 2023 | News

The gelatin patches can act as effective tissue adhesives that accelerate the healing of wounds



Wound management is essential to ensure a speedy and safe recovery, and tissue adhesive patches are an attractive option that can replace sutures and stapling. In a recent study, scientists from Incheon National University, South Korea have developed a new type of gelatin-based tissue adhesive hydrogel that locally generates oxygen through a reaction mediated by calcium peroxide, which improves the adhesiveness of the material and greatly enhances the healing process.

Their approach is centered around the addition of calcium peroxide (CaO_2) as an ingredient when preparing the hydrogel solution, giving rise to gelatin-based oxygen-generating tissue adhesives (GOTs). This compound reacts easily with water to release molecular oxygen (O_2), facilitating the oxidation of dopamine (DA) molecules, promoting DA polymerisation and healing of the wound.

Additionally, the researchers conducted *in vitro* and *in vivo* experiments demonstrating that their GOTs improved coagulation, blood closure, and neovascularisation.

The team plans to pursue clinical trials and commercialisation of this material through follow-up research and ultimately contribute to improving the quality of human life by developing next-generation tissue adhesive materials that can be applied to humans.