

## Korea develops new hydrogels for wound management

07 November 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 ( $\text{CaO}_2$ ) 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 ( $\text{O}_2$ ), 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.