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Nagaland University identifies natural compound for diabetic wound treatment

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To potentially pave the way for affordable, sustainable oral therapeutics and reduce amputation risks worldwide

Nagaland University researchers have identified a naturally-occurring plant compound called ‘Sinapic acid’ as a powerful therapeutic agent capable of significantly accelerating wound healing in diabetic conditions. The discovery marks a major advancement that could result in safe, natural, and effective treatments for diabetic wound management.

This is the first study globally to demonstrate that Sinapic acid, when administered orally, can accelerate diabetic wound healing in preclinical models. The research established that the compound works by activating the SIRT1 pathway, which plays a crucial role in tissue repair, angiogenesis, and inflammation control.

The multidisciplinary study involved collaboration between experts from Nagaland University and Lovely Professional University (LPU), Punjab, combining expertise in biotechnology, pharmacology, biochemistry, and medical laboratory sciences.

The research team has built robust preclinical evidence that Sinapic acid enhances wound healing, improves metabolic health, and mitigates oxidative stress in diabetic models. The next phase will focus on translating this success into real-world therapeutics through:

Ø Detailed molecular pathway studies (PI3K/Akt, NF-?B)

Ø Toxicity and pharmacokinetic profiling to ensure safety

Ø Formulation development for capsules or nutraceutical tablets

Ø Pilot clinical trials in diabetic patients to test efficacy and safety