

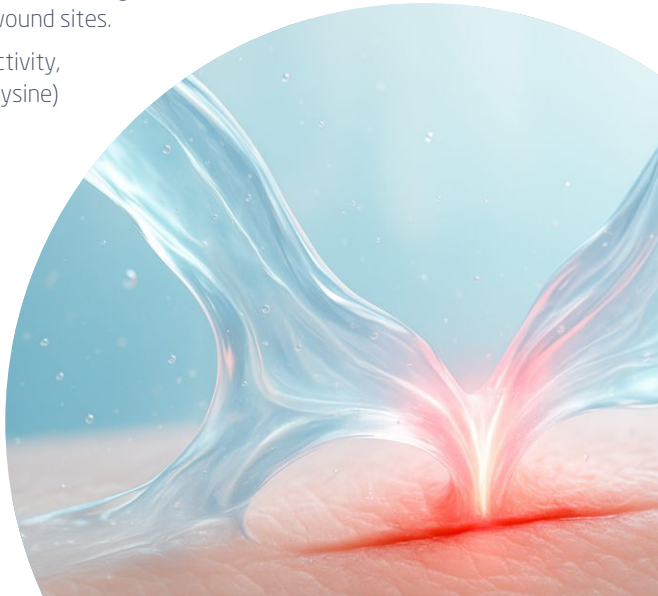
OVERVIEW

INJECTHEAL is a **Horizon Europe project** focused on the development of a **multifunctional self-healing injectable hydrogel** designed to treat deep cavity chronic wounds and for supporting tissue regeneration.

This novel hydrogel, based on functionalized pectin and gelatin, serves both as a therapeutic delivery vehicle and as a biomimetic matrix. It integrates **antibacterial, anti-inflammatory, and pro-angiogenic agents**, offering a solution that can be injected directly into deep wounds – an approach currently unavailable with existing treatments. By doing so, it reduces the physical and mental burden associated with frequent bandage changes while ensuring effective action at otherwise hard-to-reach wound sites.

To enable customizable bioactivity, INJECTHEAL employs poly(ϵ -lysine) dendrons and incorporates polymeric microcapsules for controlled, targeted drug release.

The project also addresses preclinical validation, industrial scalability, and the groundwork for clinical trials, paving the way toward real-world application.



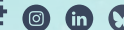
PROJECT CONSORTIUM

The INJECTHEAL consortium is composed of **12 partners from 8 European countries** (Italy, Austria, Germany, Ireland, Spain, Switzerland, and the United Kingdom). This partnership includes academic institutions, research centers, small and medium-sized enterprises, and industry organizations, united by the goal of advancing knowledge and applications in the field of **chronic wound healing**.



INJECTHEAL
INJECTABLE GEL FOR CHRONIC WOUNDS

**Self-healing injectable hydrogel
for chronic wound care
and tissue regeneration**



www.injectheal.eu



INJECTHEAL is funded by the European Union, through the Horizon Europe research and innovation programme under the Grant Agreement no. 101177924. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Health and Digital Executive Agency (HADEA). Neither the European Union nor the granting authority can be held responsible for them.

MADE FOR

INJECTHEAL is intended for patients with hard-to-heal deep cavity chronic wounds, such as diabetic, vascular or pressure ulcers, particularly in elderly, immunocompromised individuals or those with persistent inflammation.

It is also intended for healthcare professionals and specialized wound-care centers.

Thanks to its groundbreaking **multi-functional, green 4D injectable self-healing formulation**, INJECTHEAL provides an innovative solution to accelerate healing, improve quality of life, and reduce healthcare costs through its biomimetic properties and controlled bioresorption.



Patients

Innovative and effective treatment for deep cavity chronic wounds capable to tackle issues such as wound reachability, infection control, inflammation reduction, vascularization, tissue regeneration.



Industry

The INJECTHEAL innovative hydrogel platform demonstrates strong market potential. It is designed to meet unmet clinical needs through customizable bioactive formulations. While the wound-care market often focuses on management rather than healing, INJECTHEAL offers a complementary and differentiating solution.

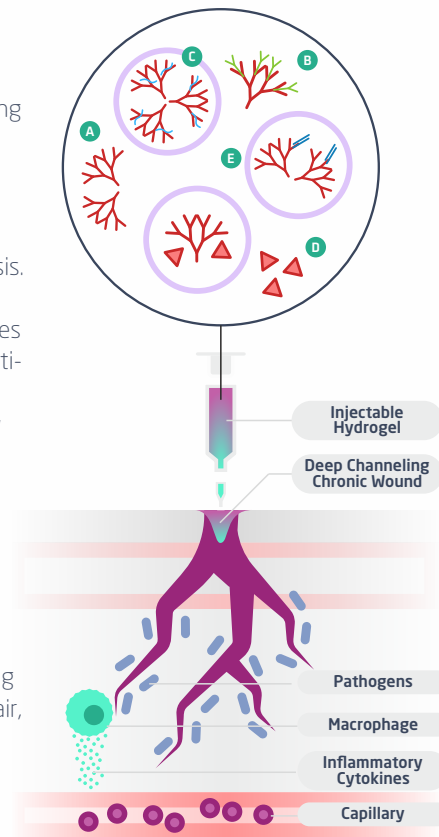


Healthcare professionals

INJECTHEAL hydrogel platform delivers advanced care with its therapeutic formulations, supporting improved clinical outcomes while reducing treatment burden.

SCIENTIFIC CONCEPT

- A** Dendrons in direct contact with the hydrogel: tuning hydrogel crosslinking density, porosity and degradation kinetics.
- B** Dendrons with bioligands for cell adhesion, migration and angiogenesis.
- C** Dendrons loaded in polymeric vesicles to protect sensitive therapeutic (anti-inflammatory and pro-angiogenic agents) from degradation and allow cell-targeted release.
- D** Antimicrobial agents: (i) loaded directly into the hydrogel or (ii) protected inside polymeric vesicles.
- E** Dendrons connected to siRNA and anti-inflammatory peptides, silencing harmful genes while promoting repair, angiogenesis (vascularization), and faster wound healing



HYDROGEL ACTIVE AGENTS

