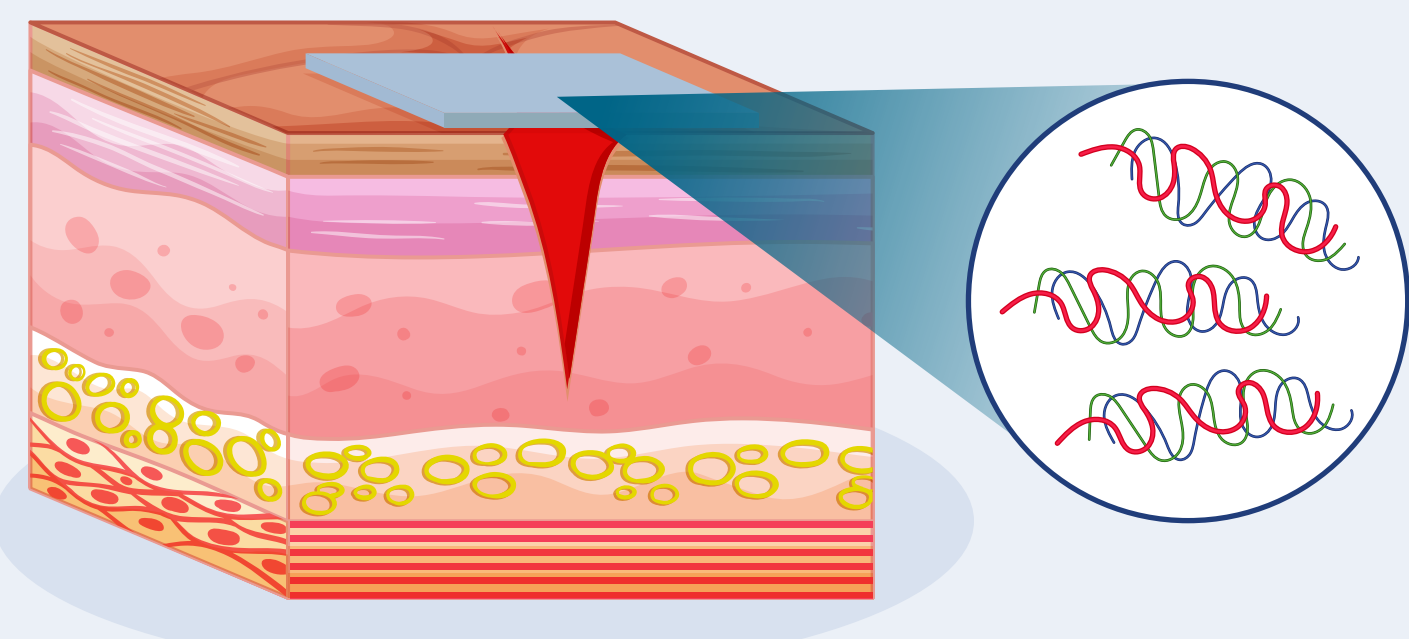


Crosslinked Gelatin Foam Dressing for Wounds



Gelatin, a commonly used natural material, has been widely studied for wound healing; however, its poor durability restricts its effectiveness as a primary wound dressing material

Development of a novel crosslinked gelatin foam dressing for use in wound dressing applications

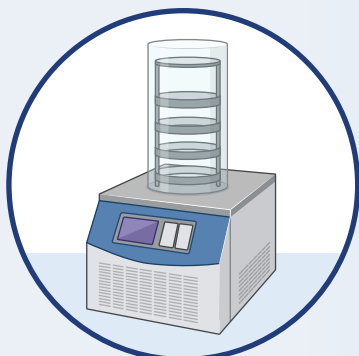
Dressing preparation



Different combinations of gelatin, glutaraldehyde, and Tween 20



Foaming



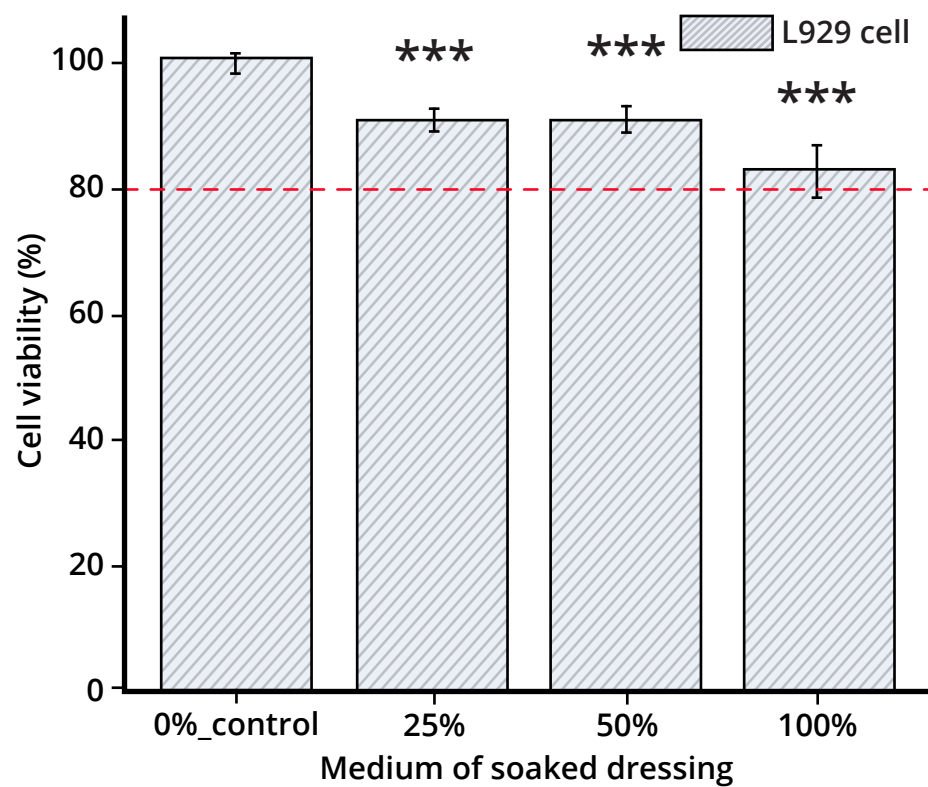
Freeze-drying

- Favorable pore distribution
- Average pore size of 60–70 μm
- Efficient absorption of wound exudate

Cell viability analysis



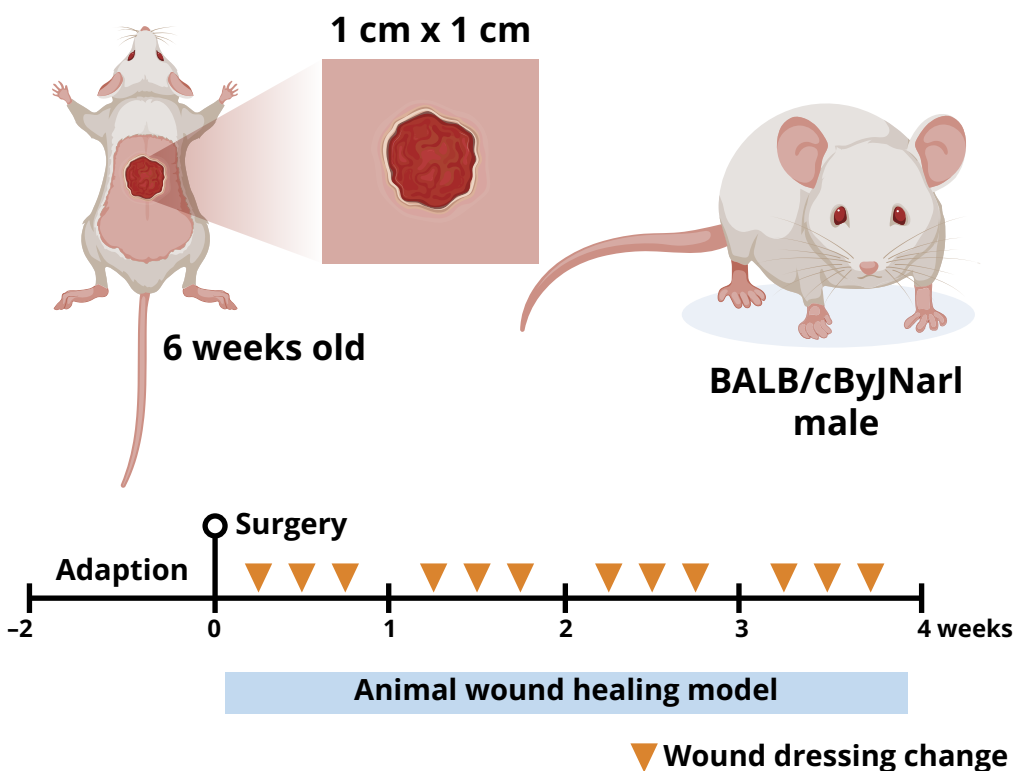
Excellent biocompatibility across all four cell lines [3T3, L929, Hs68, and CG1519] exposed to fluids released from the dressing



High cell viability observed using the MTT assay

In vivo analysis

Mice treated with the crosslinked gelatin foam dressing demonstrated:



- ✓ Promotion of functional tissue regeneration and skin repair at the wound site
- ✓ Stable wound closure rate
- ✓ No neutrophils or abnormal lymphocyte infiltration, suggesting the absence of significant drug toxicity

The crosslinked gelatin foam dressing exhibits beneficial physical and chemical properties, including adequate porosity and mechanical stability, biological compatibility, and favorable safety profile, demonstrating promise for wound applications