UNVEILING THE THERAPEUTIC POTENTIAL OF VERBASCOSIDE TO COMBAT DIABETIC WOUND

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Evidence is a multifaceted metabolic disease which impacts wound-healing processes leading to chronic wounds in the lower extremities notably. The close relationship among nutrition, gut microorganisms, and immune responses is now rapidly emerging. Nutritional interventions might provide a window of opportunity to improve healing outcomes. This study aims to explore the potential therapeutic benefits of Verbascoside, a water-soluble phenylethanoid glycoside, in the treatment of diabetic wounds. Verbascoside's effects on wound healing were assessed in diabetic mice with induced wounds. The results showed that Verbascoside significantly enhanced wound closure and improved granulation tissue formation. Furthermore, Verbascoside reduced inflammation and promoted angiogenesis, which are key factors in wound healing.

Keywords: Verbascoside, diabetic wounds, wound healing, inflammation, angiogenesis.

Introduction

The Diabetes Epidemic: Global Projections, 2010-2030

Major Complications of Diabetes

Microvascular

- Diabetic retinopathy: Impaired vision or blindness
- Diabetic nephropathy: Damage to the kidneys
- Diabetic neuropathy: Numbness or tingling in the hands and feet

Macrovascular

- Coronary artery disease
- Stroke
- Peripheral arterial disease

Extracellular matrix remodeling and microvascular damage contribute to diabetic complications.

The Diabetes Epidemic: Global Projections, 2010-2030

Potential Role of Verbascoside in Diabetic Wound

- Verbascoside promotes angiogenesis, improving blood flow to the wound site
- It reduces inflammation, facilitating healing
- Verbascoside enhances granulation tissue formation, accelerating wound closure

Potential Role of Verbascoside in Diabetic Wound

- Verbascoside therapy could be a promising strategy for the management of diabetic wounds
- Clinical trials are needed to confirm these findings and evaluate the long-term effects of Verbascoside treatment

Conclusion

- Verbascoside shows promise as a therapeutic agent for diabetic wounds
- Further research is required to establish its efficacy and safety in clinical settings

References


Chemical structure of Verbascoside: A Phenylethanoid (in red) and caffeic acid (in blue) moiety attached to a water-soluble phenylethanoid glycoside (in green).

A summary of the potential health benefits of phenylethanoid glycosides.

- Low oral bioavailability (around 0.12%)
- Low skin penetration capacities
- Poor chemical stability

Limitations of phenylethanoid glycosides

- Limited therapeutic window
- Metabolism and excretion
- Pharmacokinetic and pharmacodynamic properties

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