

Publication

Wound Healing Potential of Chlorogenic Acid and Myricetin-3-O- β -Rhamnoside Isolated from *Parrotia persica***JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 3964823**Author(s)** Moghadam, Sara E.; Ebrahimi, Samad N.; Salehi, Peyman; Moridi Farimani, Mahdi; Hamburger, Matthias; Jabbarzadeh, Ehsan**Author(s) at UniBasel** [Hamburger, Matthias](#) ;**Year** 2017**Title** Wound Healing Potential of Chlorogenic Acid and Myricetin-3-O- β -Rhamnoside Isolated from *Parrotia persica***Journal** Molecules**Volume** 22**Number** 9**Pages / Article-Number** 1501

Wound healing is a complex physiological process that is controlled by a well-orchestrated cascade of interdependent biochemical and cellular events, which has spurred the development of therapeutics that simultaneously target these active cellular constituents. We assessed the potential of *Parrotia persica* (Hamamelidaceae) in wound repair by analyzing the regenerative effects of its two main phenolic compounds, myricetin-3-O- β -rhamnoside and chlorogenic acid. To accomplish this, we performed phytochemical profiling and characterized the chemical structure of pure compounds isolated from *P. persica*, followed by an analysis of the biological effects of myricetin-3-O- β -rhamnoside and chlorogenic acid on three cell types, including keratinocytes, fibroblasts, and endothelial cells. Myricetin-3-O- β -rhamnoside and chlorogenic acid exhibited complementary pro-healing properties. The percentage of keratinocyte wound closure as measured by a scratch assay was four fold faster in the presence of 10 μ g/mL chlorogenic acid, as compared to the negative control. On the other hand, myricetin-3-O- β -rhamnoside at 10 μ g/mL was more effective in promoting fibroblast migration, demonstrating a two-fold higher rate of closure compared to the negative control group. Both compounds enhanced the capillary-like tube formation of endothelial cells in an in vitro angiogenesis assay. Our results altogether delineate the potential to synergistically accelerate the fibroblastic and remodelling phases of wound repair by administering appropriate amounts of myricetin-3-O- β -rhamnoside and chlorogenic acid.

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