

Promotion of Wound Healing by Alcoholic Extract of Stevia's Bitter Fraction in Experimental Rats

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ABSTRACT

Background: Ethnomedicinal plants have been identified and prescribed all over human history. Plants make many chemical compounds that are for biological functions, including wound healing, and defence against fungi and bacteria. The medicinal plants are used widely because of their effectiveness, fewer side effects and relatively low cost. Stevia is a medicinally useful plant with many remedial properties. The purpose of this study was determination of healing activity of alcoholic extract of Stevia's bitter fraction (SBF) on wound-healing of skin in rats. To our knowledge, this is the first study on healing properties of the plant.

Material and Methods: A full-thickness cutaneous defect (2×2cm) was induced on the back of 20 rats. The animals were randomly divided into four equal groups, treated with Tetracycline 3% (Group 1), basal cream (Group 2), cream of alcoholic extract of SBF 10% (Group 3) and untreated=control (Group 4). Five animals of each group were euthanized at 30 day post-injury (DPI) and number of total cells and blood vessels (magnification ×200) of skin dermis were counted and evaluated through histopathological analyses.

Results: The number of total cells, blood vessels, fibrocytes, fibroblasts, and ratio fibrocytes/fibroblasts of skin dermis in 30 DPI as follows respectively Group 1: 562.50±36.31b, 9.20±2.20c. Group 2: 902.70±122.30a, 12.20±3.35b. Group 3: 479.70±87.16c, 3.20±1.68d. Group 4: 936.00±64.06a, 13.50±2.73a.

Conclusion: As they are seen number of total cells and blood vessels reduced greatly in Group 3 to Group 1, 2, and 4 in 30 DPI. In conclusion, these results showed that application of alcoholic extract of SBF on wounds induces considerable accelerated wound-healing and it may be offered for treating different types of wounds in human beings.

Keywords: Stevia's Bitter Fraction, Alcoholic Extract, Wound - Healing Activity

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