STUDY OF THE EFFECT OF 21-BD ON TISSUE REPAIR MECHANISMS

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Introduction: Cardiotonic steroids (CTS) demonstrated effect in increase collagen production and contributing to the wound healing process. Aim: This study evaluates the effect of 21-benzylidene digoxin (21-BD), a semisynthetic compound of digoxin, on fibroblasts and keratinocytes. Methods: 3T3 (fibroblast) and HaCat (keratinocyte) cells were cultured to confluence in medium containing 0.1% fetal bovine serum and treated with 21-BD for 24 to 72 hours. The cells were then subjected to MTT assay, stress fiber evaluation by immunofluorescence, and cell migration assessment. Results: Preliminary data indicate that 21-BD did not induce cytotoxic effects in either cell type, even at 100 µM for 48 hours. In keratinocytes, an increase in cell proliferation was observed after 24 hours of treatment with 21-BD at 10 nM. Morphological assessment showed that 21-BD increases the number of active fibroblasts and the amount of stress fibers, starting at 1 nM. An increase in stress fibers was also observed in keratinocytes at 1 nM. 21-BD did not affect fibroblast migration but enhanced keratinocyte migration at 1 nM and 10 nM. Conclusion: The data suggest a positive effect of 21-BD on the wound healing process. To better understand these effects, we will evaluate collagen production, the presence of lipid droplets, and the expression of adhesion proteins.