

Effect of TGF- β 2, BSA/HCl and HCl on wound closure properties of cultured human bone cell monolayer

Farshid Sefat^{a,b}, Mansour Youseffi^b and Morgan C.T. Denyer^{a,c}

^aInstitute of Pharmaceutical Innovation (ipi), ^bSchool of Engineering, Design and Technology-Medical Engineering, ^cSchool of Life Sciences, University of Bradford, Bradford BD7 1DP, UK

fsefaty@yahoo.co.uk

Abstract: The aims of this *in vitro* study were to investigate the effect of TGF- β 2 on closure of a model wound in cultured monolayer of the MG63 human bone cells. This *in vitro* work examined and compared the wound closure response with and without addition of TGF- β 2, and its dosage carriers HCl and BSA/HCl. The wound healing response was investigated in culture flasks by creating a wound on confluent monolayer of MG63 human bone cell. After wounding, cultures were treated with 50ng/ml TGF- β 2 at concentration of 4mM HCl and 1mg/ml BSA and distilled water. The same method was applied for cell cultured monolayer with no growth factor (control), with HCl/BSA and HCl only solutions. After wounding, wound width was measured every 5 hours over a 30-hour period. The results showed that TGF- β 2 enhanced the rate of wound repair but not as good as its dosage carriers. This indicated that TGF- β 2 does have a positive effect on the wound healing process but less than its dosage carriers and its healing speed was found to be higher than the control.

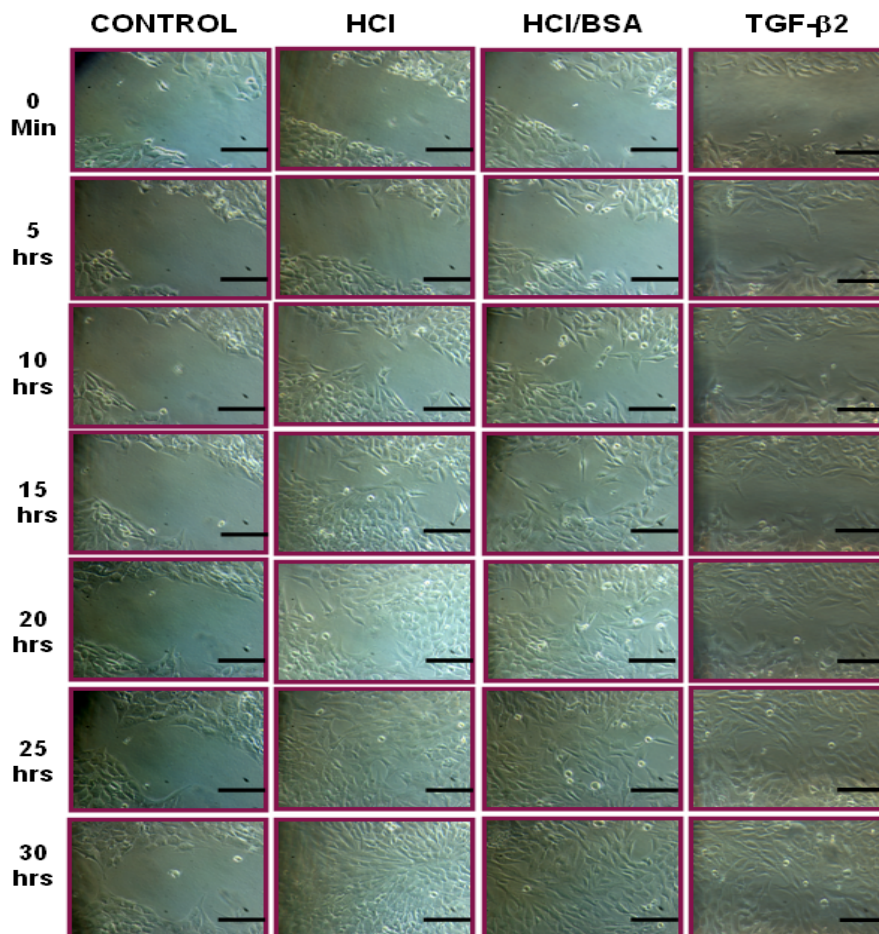


Figure: Images of the wound healing process for the bone cell monolayers with HCl, BSA/HCl, TGF β 2 and control for the period of 30 hours (Scale bar=100 μ m).