Injectable biostimulators also promote non-inflammatory collagen biostimulation

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INTRODUCTION

The reduction in the viability of fibroblasts and the decrease in their ability to synthesize collagen are extremely relevant in the aging process. Therefore, the aim of the study was to evaluate the cell viability and collagen biosynthesis of fibroblasts treated with biostimulators, as well as the morphology and zeta potential of biostimulators.

METHODS & MATERIAL

Characterization was performed by optical microscopy and zeta potential analyses. Cells were exposed to Rennova®Elleva, Rennova®Diamond, Ellansé®, Sculptra® and Radiesse® biostimulators. After 2 and 10 days of treatment, respectively, cell viability assays (MTT) and spectrophotometric quantification of collagen synthesis after staining with Sirius Red were performed.

RESULTS

No improvement in cell viability was observed in fibroblasts. However, there was a significant increase in collagen synthesis of non-inflammatory origin in fibroblasts treated with biostimulators from the Radiesse®, Rennova®Elleva® and Sculptra® groups compared to the control group.

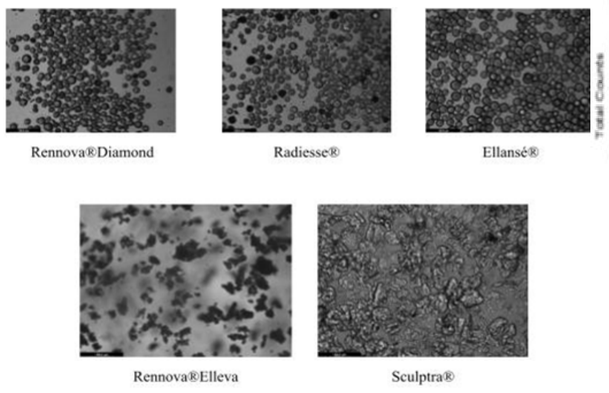

Figure 1- Morphological aspect of the evaluated biostimulators.

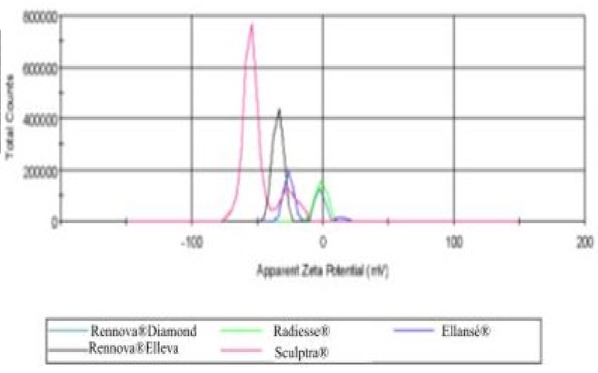

Figure 2- Zeta potential of biostimulators.

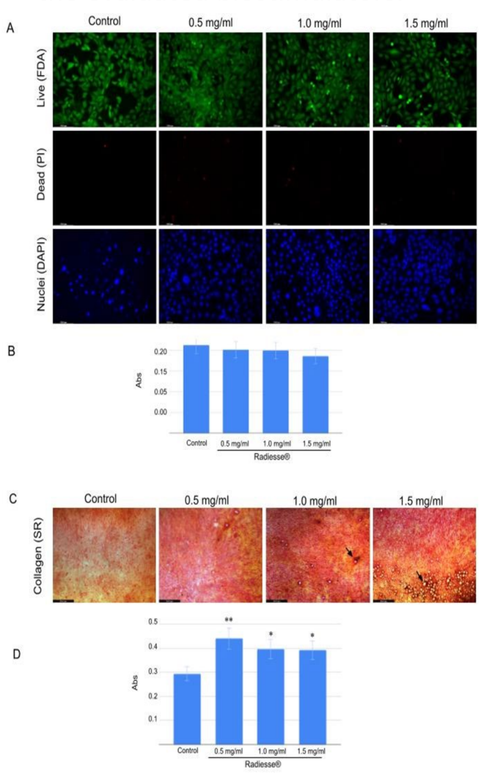

Figure 3- Viability (A and B) and collagen biosynthesis (C and D) of fibroblasts treated with Radiesse®. *p<0.05 and **p<0.01.

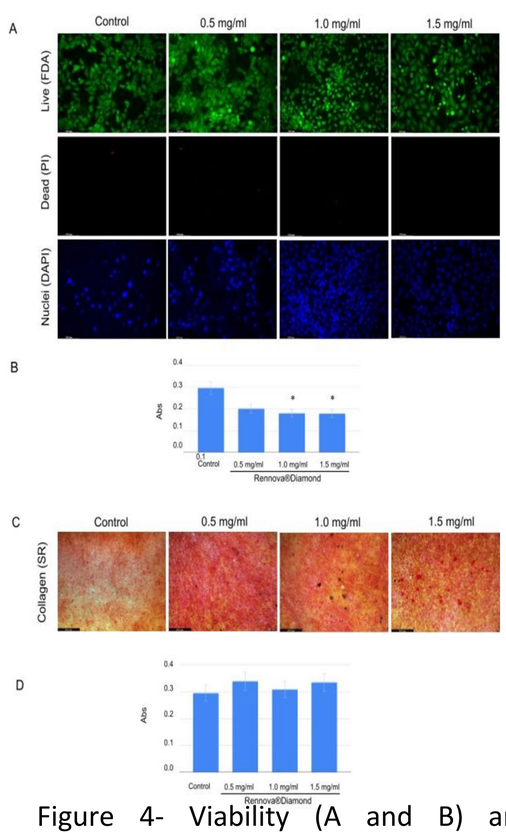

Figure 4- Viability (A and B) and collagen biosynthesis (C and D) of fibroblasts treated with Rennova®Diamond. *p<0.05.

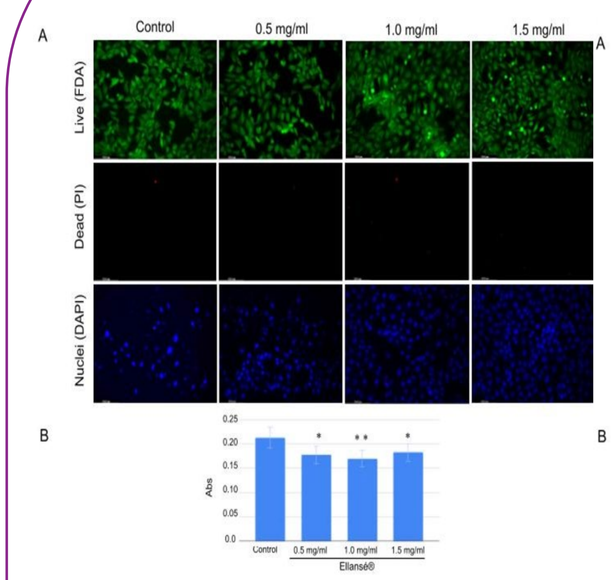

Figure 5- Viability (A and B) and collagen biosynthesis (C and D) of fibroblasts treated with Ellansé®. *p<0.05 and **p<0.01.

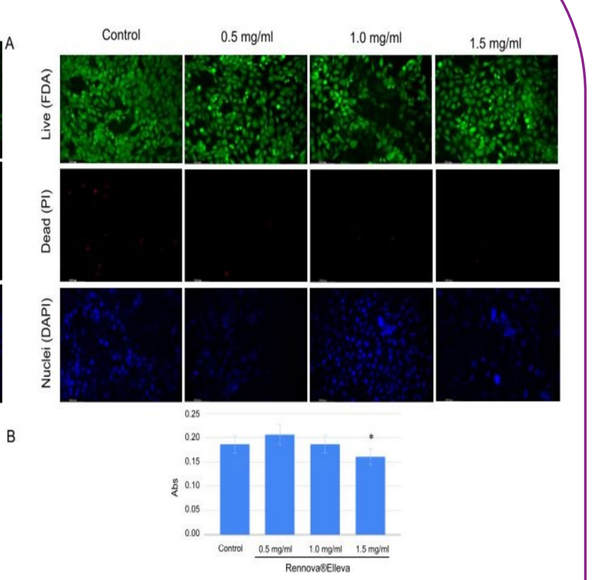

Figure 6- Viability (A and B) and collagen biosynthesis (C and D) of fibroblasts treated with Rennova®Elleva. *p<0.05 and **p<0.01.

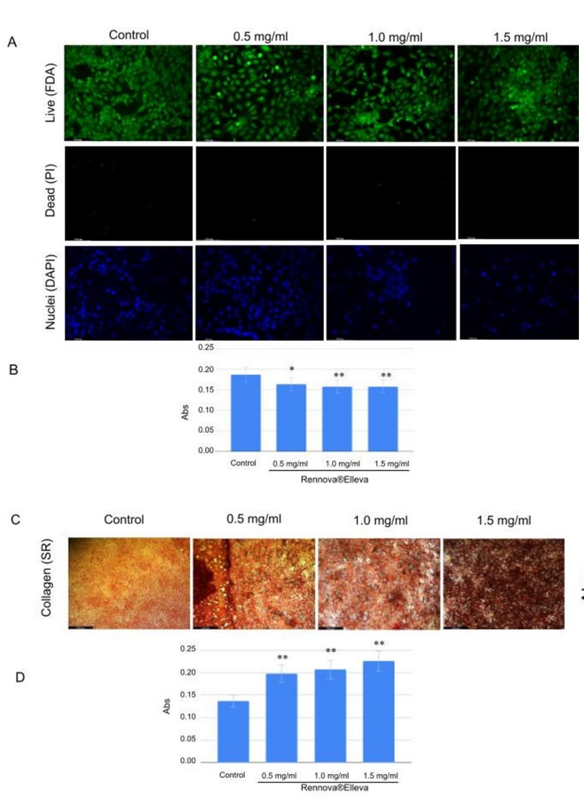

Figure 7- Viability (A and B) and collagen biosynthesis (C and D) of fibroblasts treated with Sculptra®. *p<0.05 and **p<0.01.

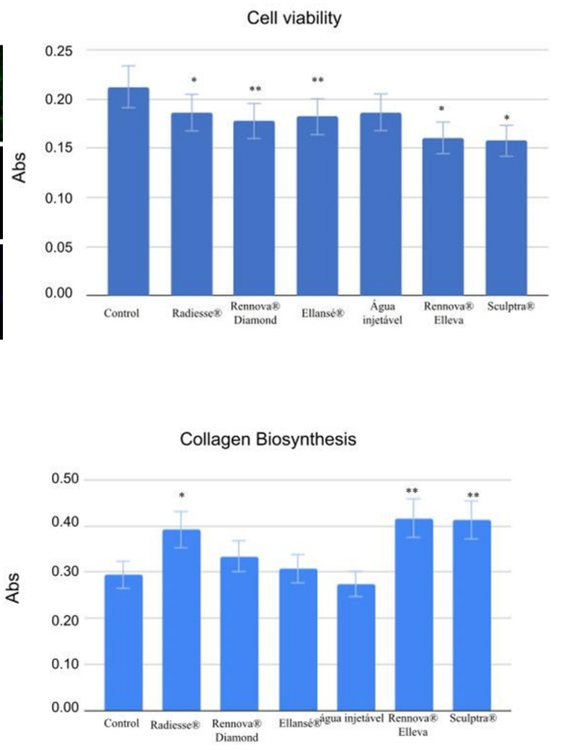

Figure 8- Cell viability and collagen biosynthesis of fibroblasts treated with different brands of biostimulators at a concentration of 1.5mg/ml. *p<0.05 and **p<0.01.

CONCLUSION

No biostimulator brand or dose showed cytotoxicity. Also, there was no difference in non-inflammatory collagen biosynthesis between brands of hydroxyapatites or poly(L-lactic acid) (PLLAs) when compared to each other.

Acknowledgments

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REFERENCES

presentation