

JOINT EVENT

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**Biomimetic porous collagen scaffold for bone tissue engineering****Malagón Escandón A M, Saniger Blesa J M, Piñón Zárate G, Chaires Rosas C P, Hernández Téllez B, Jarquín Yáñez K and Castell Rodríguez A E**  
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In recent years there has been a progress in conventional treatments for bone defects because tissue engineering and regenerative medicine present alternatives to restore or replace damaged or lost bone, this through the use of scaffolds in combination with autologous or mesenchymal cells. However, a therapeutic approach that can be considered as the gold standard and used as a routine treatment has not yet been found. Therefore, we propose an extracellular matrix-based bioscaffolds derived from bovine cancellous bone, in combination with mesenchymal cells of Wharton's gelatin, which have shown in vitro and in vivo the ability to differentiate into multiple mesoderm, ectoderm and endoderm lineages, anti-inflammatory and immuno-modulatory effects that favors its allogenic use as well as the secretion of trophic and paracrine factors that induce the endogenous mechanisms of bone repair. The obtaining of decellularized scaffolds has been successfully carried out in other organs and tissues; the effectiveness of its biosafety has also been previously evaluated in vivo and FDA approved. In the specific case of bone, a more complex treatment is needed in comparison with other organs and tissues, because it is necessary that demineralization and collagen denaturalization maintaining the architecture and porosity of the scaffold that will favor colonization, vascularization, and degradation. The present work was made in order to obtain a temporal scaffold that succeeds in degradation in an inversely proportional way to the synthesis of extracellular matrix and the maturation of the bone by the cells of the host.

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