Collagen Production from Animal Husbandry for Circular Economy

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Abstract

Tissue regeneration in adult mammal does not occur spontaneously during wound healing but going through the process of remodelling and re-epidermisation of the tissue, resulting in contraction and scar formation. The extraction of collagen and fabrication of collagen scaffold are important to the outcome of the treatment. The specific and important chemical analogues and properties in collagen can be lost during the process of extraction and fabrication due to exposure to heat, moist and atmospheric condition. In this work, we looked into the details of extraction of collagen from bovine tendon, starting from the use of freeze drying to assist with swelling, the use of different concentrations of acetic acid to dialysis for 3–5 days and fabrication of collagen scaffold. From this work, we emphasis that the tiny details in extraction and fabrication process of collagen

scaffold are critical to the effectiveness of the outcome of regenerative scaffold.

Author keywords

Collagen; Scaffold; Tissue engineering and circular economy

Indexed keywords

Engineering controlled terms

Fiber bonding; Gas foaming; Mammals

Engineering uncontrolled terms

Animal husbandry; Circular economy; Collagen productions; Collagen scaffolds; Engineering economy; Property; Scar formation; Tissue engineering and circular economy; Tissues engineerings; Wound healing

Engineering main heading

Tissue regeneration

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Abstract

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