Mechanical Properties and In Vitro Evaluation of Thermoplastic Polyurethane and Polylactic Acid Blend for Fabrication of 3D Filaments for Tracheal Tissue Engineering

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Abstract

Surgical reconstruction of extensive tracheal lesions is challenging. It requires a mechanically stable, biocompatible, and nontoxic material that gradually degrades. One of the possible solutions for overcoming the limitations of tracheal transplantation is a three-dimensional (3D) printed tracheal scaffold made of polymers. Polymer blending is one of the methods used to produce material for a trachea scaffold with tailored characteristics. The purpose of this study is to PLA are biocompatible, and their promising properties are suitable for future applications in tracheal tissue engineering.

Keywords

Author Keywords: thermoplastic polyurethane; polylactic acid; trachea scaffold; 3D filament

Keywords Plus: POLY(LACTIC ACID); HYDROLYTIC DEGRADATION; AURICULAR CHONDROCYTES; SCAFFOLDS; RECONSTRUCTION; REPLACEMENT; COMPOSITE;

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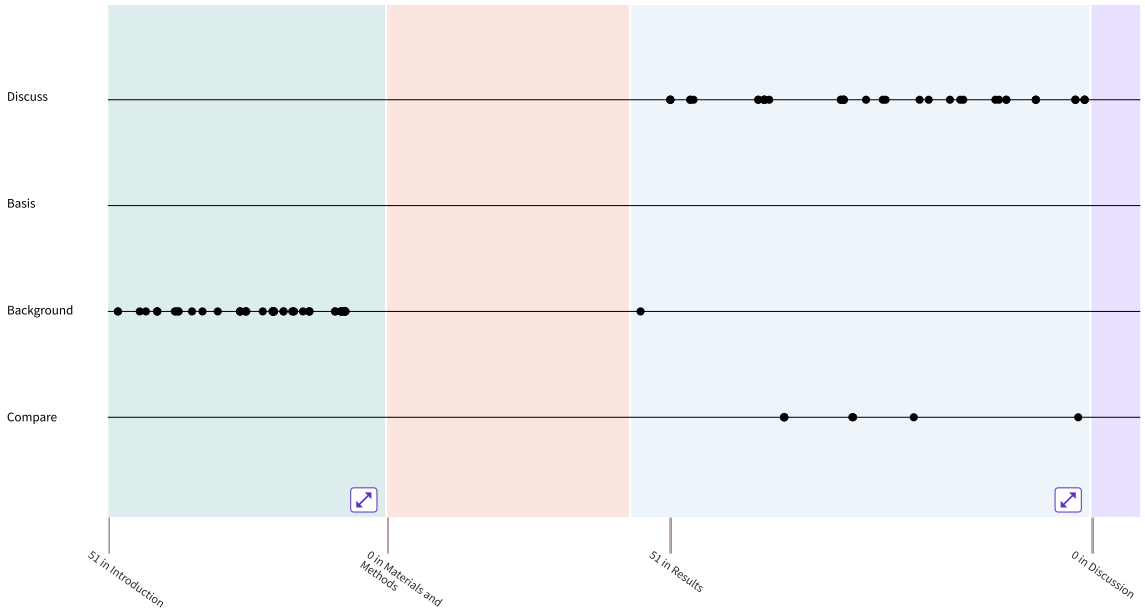

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