Biocompatibility evaluation of tissue-engineered decellularized scaffolds for biomedical application.

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Abstract:

Abstract Biomaterials based on seeding of cells on decellularized scaffolds have gained increasing interest in the last few years and suggested to serve as an alternative approach to bioengineer artificial organs and tissues for transplantation. The reaction of the host toward the decellularized scaffold and transplanted cells depends on the biocompatibility of the construct. Before proceeding to the clinical application step of decellularized scaffolds, it is greatly important to apply a number of biocompatibility tests in vitro and in vivo. This review describes the different methodology involved in cytotoxicity, pathogenicity, immunogenicity and biodegradability testing for evaluating the biocompatibility of various decellularized matrices obtained from human or animals.

Keywords:

Biocompatibility; Biodegradability; Cytotoxicity; Decellularization; Immunogenicity; Scaffolds

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