

Angiogenic activity of biomaterial in the chick chorioallantoic membrane

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The rapid promotion of angiogenesis is critical for tissue engineering and regenerative medicine. The angiogenic activity of tissue-engineered scaffolds has already been the major criterion for choosing and designing ideal biological materials. Current in vivo models for testing biomaterials are time and labor intensive as well as expensive. This study describes a new approach for testing the biological activity of hydroxyapatite (HA) ceramic biomaterial in ovo using the chorioallantoic membrane (CAM) of the developing chicken embryo, as an alternative to the traditional mammalian models. Our results suggested that the HA ceramic scaffolds had satisfactory angiogenic properties, and make this animal model particularly attractive for the rapid in vivo screening of biomaterials.

Angiogenesis, alternative model, biomaterial, biocompatibility, CAM, chick embryo, medicine, tissue engineering