Zebrafish as a potential biomaterial testing platform for bone tissue engineering application

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Biomaterials function as an essential aspect of tissue engineering and have a profound impact on cell growth and subsequent tissue regeneration. The development of new biomaterials requires a potential platform to understand the host-biomaterial interaction, which is crucial for successful biomaterial implantation. Biomaterials analyzed in rodent models for in vivo research are cost- effective but tedious, and the practice has many technical difficulties. As an alternative, zebrafish provide an excellent biomaterial testing platform over the current rodent models. During growth and recovery, zebrafish bone morphogenesis shows a variety of inductive signals involved in the cycle that are close to those influencing differentiation of bone and cartilage in mammals, including humans. This platform is cheap, optically transparent, quick to change genes, and provides reliable reproducibility on short life cycles. We, therefore, outlined this review of the zebrafish as a potential in vivo research model for the rapid characterization of the biological properties of new biomaterials for bone tissue engineering applications.

Biography

Vimalraj has completed his PhD at the age of 28 years from SRM University and postdoctoral studies from Anna University, Chennai India. He continues as Assistant Professor (DST-INSPIRE Faculty) at Anna University itself. He has published more than 40 papers in reputed journals and has 153 aggregate impact factors..

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