

Submission Summary

Conference Name

International Conference on Nanoscience and Nanotechnology

Paper ID

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Paper Title

Development of Novel Nanopolymeric Depots for Dental Drug Delivery

Abstract

Microbial infection of dental features is a hazard that affects global population, along with the rising resistance to current clinically approved marketed products for antimicrobial infections, is a leading cause of human morbidity. Conventional diagnosis and treatment for these problems are often challenging and limited due to complex orodental pathophysiology. To improve upon the current treatment regimen, polymeric nanomaterials hold the key to improved and more effective therapeutics. Addressing the problem we formulated Novel Nanopolymeric drug-loaded electrospun fibrous mats which were strategized and loaded by drug of choice, screened using docking scores obtained by "In-Silico Study" of marketed antimicrobial leads where the conventional compounds used for the treatment of periodontitis were screened upon the hierarchical mode of Protein-Ligand Docking and the compound showing the best Dock-Score were identified to be the best fit for formulation. The polymer was selected by extensive literature survey and optimization of the mat was statistically done using Central Composite Design of Response Surface Model in Design Expert Software. The factors and responses were strategically selected and the optimized formulation was obtained based on the statistical computation which was then practically developed in the Laboratory. The extensive characterisation of the formulations (both blank and drug loaded) were carried out and the in vitro result was found to be promising. Development of stereolithographic 3D-Printed stents for dental drug delivery is under process where the nanofiber would be dispensed for prolonged and controlled drug delivery.

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Submission Files

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