

ORAL PRESENTATION

Synthesis and characterization of drug delivery system for oral lichen planus treatments

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Oral lichen planus (OLP), a persistent inflammatory condition affecting mucous membranes, presents a potential risk of malignant transformation within the oral cavity. Current therapeutic approaches for OLP involve the usage of immunosuppressive medications (such as Dexamethasone -DEX-) administered topically, which poses challenges in formulating preparations that effectively adhere to mucosal surfaces without disrupting the patient's daily activities. Thus, the focus of this project is on the development and validation of innovative drug delivery systems for Dexamethasone targeted towards OLP treatment, utilizing nanoparticles.

The specific objectives of this project are:

1. Formulating and evaluating DEX Delivery Systems utilizing nanoparticles and fibers.
2. Setup an in vitro oral mucosa model to assess drug release kinetics and cellular uptake in vitro.

To accomplish these goals, two distinct delivery systems were explored:

1. PLA fibers coated with chitosan.
2. Polylactic-co-glycolic acid nanoparticles.

Drug release kinetics and cellular uptake were evaluated using High-Performance Liquid Chromatography (HPLC). Additionally, cytotoxicity was assessed via the MTT assay, and morphological changes were examined using Scanning Electron Microscopy (SEM).

These findings provide valuable insights for the development of targeted and efficient drug delivery systems for managing OLP, with potential implications for enhancing treatment efficacy and patient comfort.

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