

# Drug Discovery & Designing

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## Preparation and evaluation of Clindamycin phosphate loaded chitosan-alginate complex films for periodontal application

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**Introduction:** The periodontal pocket is the natural reservoir for the insertion of the dosage forms. Film preparation is one of the popular dosage forms due to its ease of administration into the periodontal pocket.

**Aim:** To prepare the Clindamycin phosphate (CDP) loaded adhesive film and evaluation of the effects of polymer type and drug-polymer ratio, polymer complexing method on the film characteristics.

**Methods:** Alginate and chitosan complex was used to sustain the delivery of the water soluble CDP. The film formulations were prepared by solvent casting method. For this purpose film forming abilities of these polymer and polymer complex, thickness and swelling degree of films, *in vitro* drug release rate and adhesiveness of films were investigated.

**Results:** As a result, the burst effect could be reduced by increasing the polymer amount for both of the polymers and complex of chitosan and alginate was studied to obtain lower drug release. Fiber or particular coacervates were formed in the film due to the complexing method of the polymers and the type of coacervates affected the encapsulated drug amount in the film and release rate. All the film adhesiveness was proper for periodontal application but complexing of polymers, polymer type and concentration affected the film fragility and adhesiveness.

**Conclusion:** This study showed that forming coacervate by using polymer which has the different surface charge may be the challenge for modifying and controlling the drug release from film preparations.

### Biography

Muge Kilicarslan was graduated from Ankara University Faculty of Pharmacy in 1990. She has received her MSc degree in Pharmaceutical Technology. She has obtained her PhD degree on the preparation of multi-particulate oral controlled release dosage form of Verapamil HCl. She became an Associate Professor in 2015 and is currently the Vice-Dean of same faculty. She has more than 20 papers in the international and national journals. Her current research interest revolves around micro-particulate drug delivery systems, dental drug delivery systems, *in situ* implants and nanoparticles.

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