



PRODUCTION OF NANOFIBROUS WOUND DRESSINGS CONTAINING CHLOROGENIC ACID AND EVALUATION OF THEIR EFFECT ON WOUND HEALING

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KEY WORDS

- ✓ Chlorogenic acid
- ✓ Nanofiber
- ✓ Wound dressing
- ✓ Wound healing
- ✓ Migration

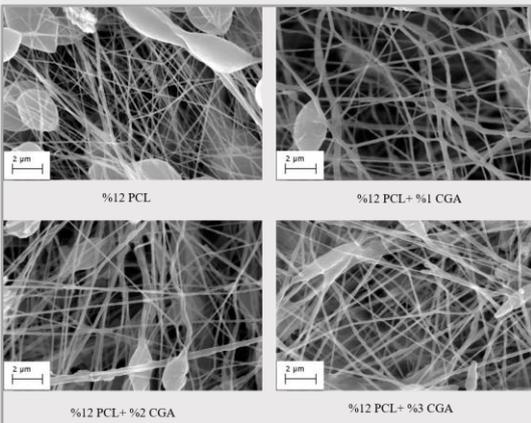
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THESIS ABSTRACT

Nanofibers attract attention especially in the medical field due to their properties such as high surface area to volume ratio, high porosity, and flexibility. Nanofibrous surfaces can be produced from different polymers by the electrospinning method, and various functional properties can be imparted to these surfaces by adding different additives into the solution. Chlorogenic acid (CGA) is a phenolic compound found in natural sources and is known for its antioxidant, antibacterial, and anti-inflammatory effects.

In this study, nanofibrous wound dressings were produced by the electrospinning method using polycaprolactone (PCL) and CGA at different concentrations. The produced surfaces were characterized, the release profile of CGA was investigated, and their effects on wound healing were evaluated through in vitro and in vivo experiments. The results showed that CGA-containing nanofibrous surfaces affected fiber morphology and the release profile and supported wound healing positively.

APPLICATION AREAS OF THE THESIS RESULTS

The PCL/CGA nanofibrous surfaces obtained as a result of this study are thought to be usable in biomedical applications that support wound healing as wound dressings. In addition, due to the ability of these structures to provide controlled drug release, they also have potential areas of use in different medical fields such as tissue engineering and drug delivery systems.

ACADEMIC ACTIVITIES

1. Ertugran İ., Göktaalay G., Gebizli Ş. D., & Çeçen G. S. Production of Polycaprolactone/ Chlorogenic acid Nanofibers for Wound Dressing Applications. 13th International Gobeklipepe Scientific Research and Innovation Congress book 2026. (p. 883-884).