

Nanochemistry and biotechnology

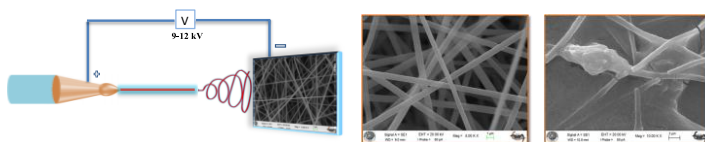
Production of nanofibers of calixarene diamide compounds with electrospin and application to MCF-7 cancer cells

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Calixarenes, one of the most important components of supramolecular chemistry, have found themselves in place in the biotechnological field in recent years. Calixarene compounds have many uses, especially for use in host-guest type molecules or ion absorptions, and have recently been used in studies such as controlled drug release. When we look at recent studies, we have not found calixarene nanofibers and their biotechnological applications. The polymer-free production of the calixarene nanofibers was first made by our group [1]. We can use these calixarene nanofibers produced in many different areas. In this study, after the synthesis and characterization of calix[4]arene compounds with different amide groups, the electrospin method was used to obtain the nanofibers. The surface characterization of nanofiber-producing calixarenes was performed by SEM, TEM and AFM. The chemical interactions of the nanofiber-producing calixarene compounds against MCF-7 breast cancer were examined and their biocompatibility was examined. Subsequently, drug release assays against different amounts of MCF-7 cancer cells were carried out by examining drug release in the presence of MCF-7 cancer cells by loading some calixarene compounds with paclitaxel.



1. Ozcan F., Bayrakci M., Ertul S.// Synthesis and characterization of novel nanofiber based calixarene and its binding efficiency towards chromium and uranium ions // J Incl Phenom Macrocycl Chem.- 2016.-85.-P.49–58.