

## Controlled drug release system: MCF-Chlorambucil mesoporous foam

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Mesostructured cellular foam (MCF) is a promising material for drug delivery systems due to its high biocompatibility, biodegradability, and low toxicity. Its properties include a large surface area, uniform large pore.

In this work, the MCF mesoporous foam was successfully synthesized for its application in drug nanocarriers, specifically Chlorambucil, obtaining the MCF-CLB composite. The synthesis of the mesoporous material and the process of incorporation of Chlorambucil in the pores of the MCF were successful as shown in the XRD, UV Vis Ref. Difusa, TEM analysis and analysis of textural properties.

The release of the drug was conducted by simulating the physiological conditions to reproduce the conditions of the organism. The mechanism of drug release from the MCF-CLB host was evaluated. Different mathematical models were used to adjust the experimental data, the best model describing the phenomenon under study over the entire period is the Weibull model. The auspicious results we attained for the release of the drug using the new material, the main advantage of this release is that the rate of release is fast at the beginning and then gradually decreases until 24 h practically all the drug contained in the carrier is released (>95%).

**Keywords:** MCF, CHLORAMBUCIL, DRUG RELEASE SYSTEM

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