

Study of Physicochemical Properties of Hydroquinone Nanofibers

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Abstract

Introduction:

Melasma is a common hypermelanotic disorder affecting the face that is associated with considerable psychological impacts that one of the treatment options is hydroquinone. The phenolic and hydroquinone derivatives and derivatives thereof, including the sesquiterpenoid hydroquinone and quinone, are widely used to inhibit bacteria, fungi and viruses, on the other Polymeric drug delivery system are able to improve therapeutic efficacy, reduce toxicity, and prolong drug release by adjusting the degradation rate of the polymer. So in this study we product and investigate of antifungal activity of Hydroquinone nanofibers.

Methods and Results:

Films containing hydroquinone were produced from electrospinning method. The physicochemical properties of prepared films were investigated by electronic microscopy and FTIR. Physical stability and degradation rate of nanofibers as well as the rate of hydroquinone release were also studied. In this study, the antifungal effects of hydroquinone were studied in laboratory conditions. The release test revealed that the release rate of hydroquinone nanofibers increased with increase in temperature. Hydroquinone prevents the growth of the fungal species of *Candida albicans*

Conclusions:

Hydroquinone is widely used in the treatment of melasma, but no report has yet been made of the use of hydroquinone in the treatment of fungal diseases. Antifungal effects of hydroquinone on the *Candida albicans* species have been tested in laboratory conditions and its positive effect has been determined.

Key words: Hydroquinone, Melasma, Nanofiber, Electrospinning, Antifungal activity