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Review article

Development and evaluation of oxiconazole nitrate hydrogel as a topical drug delivery system

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Abstract

Background: The Hydrogels are hydrophilic, three-dimensional networks, which are able to imbibe large amounts of water or biological and thus resemble, to a large extent, a biological tissue. They are insoluble due to the presence of chemical and/or physical crosslinks such as entanglements and crystallites. These materials can be synthesized to respond to a number of physiological stimuli present in the body, such as pH, ionic strength and temperature. **Aim:** The aim of this research article was to present a concise review on the applications of hydrogels in the pharmaceutical hydrogel characterization and analysis of drug release from such devices. **Method:** In the present study, an attempt has been made to formulate the topical drug delivery system of Oxiconazole Nitrate in the form of Hydrogel. There are 18 Batches were used for the formulation process. **Result:** The IR shows that there is no interference in the drug and polymer at the molecular level. The Encapsulation efficiency of different hydrogel was estimated range of 95-98.5% which indicates uniform distribution of the drug throughout the hydrogel. The percentage drug releases of F1 to F18 batches are 23.40% to 80%. Spreadability in range of 22.20-27.23g.cm/sec, and formulation were easily extrudable from the tube. It was found that pH of all the formulation is in the range of 6.21 to 6.46 that suits the skin pH indicating skin compatibility. **Conclusion:** The formulation can be estimated that it was a good topical formulation and technique use for the future aspect.

Keywords: Carbopol, Chitosan, Hydrogel, Oxiconazole nitrate, Tamarinds.

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