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(54) Title of the invention : PREPARATION OF ITRACONAZOLE-LOADED MICROFIBRES VIA CENTRIFUGAL MELT SPINNING FOR ENHANCED DRUG DELIVERY

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(57) Abstract :  
The present invention relates to the preparation of itraconazole-loaded microfibrils using a centrifugal melt spinning process, incorporating varying drug concentrations (20%, 30%, 50%, and 100% w/w) with sucrose as a carrier. The microfibrils exhibit high drug loading, efficient incorporation, and maintain the drug in an amorphous state, enhancing solubility and bioavailability. Stability tests under high-humidity conditions demonstrate the microfibrils' structural integrity and resistance to recrystallization. The dissolution profiles of the microfibrils show controlled and sustained drug release. The fabrication method yields high-quality microfibrils with minimal material loss and is scalable for large-scale production. This invention offers a versatile and efficient platform for formulating itraconazole in microfibril form, with applications in pharmaceutical drug delivery systems.

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