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## Development Process for Nanosized Aripiprazole Loaded Films Using a Biopolymer from *Zea mays* and Its Performance Evaluation



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## ABSTRACT

Aim of the current study was to develop nanosized aripiprazole loaded bio-flexy films using biopolymer from Zea mays for oro-translabial drug delivery. Nanosizing reduces the particle size into nano level thereby reduces the dose and also the dose related serious side effects of aripiprazole. Aripiprazole was nanosized by novel method using 1,2,3-Propanetriol as Nanosizant. Ten nanosized Aripiprazole loaded films viz. FZ1-FZ5 and FM1-FM5were prepared by Solvent Casting Technique using different ratios (1:1, 1:2, 1:3, 1:4 and 1:5) of biopolymer from Zea mays and HPMC as film former, 1,2,3-Propanetriol and Dglucose as flexicizer. The isolated biopolymer was off-white in colour, biodegradable and biocompatible in nature. All formulations were thin, smooth, transparent to translucent in appearance and flexible in nature. The amount of film former influenced the release properties of formulations. Formulation FZ3(1:3) was best optimized formulation performance with 148 times mucoadhesion time, 99.30% drug content uniformity, and released drug over a period of 36 hrs. Nanosized aripiprazole loaded films were developed and optimized for delivery via oro-transmucosal route and can be effectively applied on labial mucosa for effective treatment and management of schizophrenia, depression, bipolar disorder and irritability associated with autism.