



## Formulation and Gastrointestinal Transit Evaluation of Mucoadhesive Oral Multiple Unit Systems of Furazolidone

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**SUMMARY.** The objective of present study was to improve gastric residence time of furazolidone by preparing mucoadhesive Multiple Unit Systems (MUS) with chitosan, Hydroxypropyl methyl cellulose K4M and sodium carboxymethyl cellulose by employing ionotropic gelation method. The resultant MUS were evaluated *in vitro* and *in vivo*. The particle size length ranged between  $0.76 \pm 0.25$  to  $0.89 \pm 0.23$ mm, while the breadth was  $0.76 \pm 0.15$  to  $0.89 \pm 0.06$  mm, respectively. Encapsulation efficiency was in range of 82 to 90 %. MUS exhibited good mucoadhesive property in *in vitro* wash-off test. Stability studies showed no significant change in dissolution profiles ( $P < 0.05$ ). The Gastrointestinal transit time was determined by fluoroscopic study which revealed that, the MUS retained in gastrointestinal tract for more than 5 hours and distributed throughout GIT. Based upon these results, prepared mucoadhesive MUS can be a good alternative to single unit systems to deliver Furazolidone with improved gastric residence time to treat intestinal amoebiasis.

**KEY WORDS:** Chitosan, Gastrointestinal transit, Multiple unit systems, X-ray.

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