Acyclovir lipid nanocapsules gel for oromucosal delivery: A preclinical evidence of efficacy in the chicken pouch membrane model

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Declarations of interest:

None

Abstract

The study aimed to develop a patient-friendly acyclovir gel with improved efficacy in viral mouth infections, in response to patients' need for an intraoral acyclovir product. Acyclovir was loaded in lipid nanocapsules in gel form, and formulae were evaluated for oromucosal delivery. Lipid nanocapsules were prepared by the phase inversion method. Formulae were optimized to achieve maximum acyclovir entrapment and minimum acyclovir precipitation. Colloidal properties, and pharmaceutical performance indicators were assessed. Drug-loaded lipid nanocapsules were in the nanorange (39-120 nm), PdI (0.03-0.2), negative zeta potential, and entrapment efficiency (33-64 %). Acyclovir (0.3% w/w) lipid nanocapsules gels were prepared using hydroxyethylcellulose (3% w/w). Resulting gel attributes were considered suitable.