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Curcumin solid lipid nanoparticles for oral precancerous lesion treatment

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This work aimed at preparation and characterization of curcumin solid-lipid nanoparticle (CurSLN) loaded mucoadhesive gel for local treatment of oral precancerous lesions with low dose. The formulated CurSLNs were dispersed in a mucoadhesive gel matrix to be applied to the buccal mucosa. Conventional mucoadhesive gel using binary system was adopted. The prepared gels were evaluated for *in vitro* drug dialysis, *ex vivo* mucoadhesion test and *ex vivo* permeation study using chicken buccal mucosa. Short-term clinical evaluation was carried out on 10 patients suffering oral erythroplakia in terms of pain index and lesion size measurement. The results showed that the loaded gel with CurSLN showed good mucoadhesion property and 25 min *in vivo* residence time. In addition to stability enhancement for the Cur powder. All formulae did not show any drug permeated; however, significant amount of Cur was retained within the chicken buccal mucosal tissue confirmed by histological examination. Significant reduction in pain, and complete healing was observed after 6 weeks of treatment. The local use of Cur in low dose is a promising option for treatment of precancerous lesions. The lack of local anti-inflammatory compounds with reduced side effects intensifies the importance of studying natural products for this purpose.

Biography

Heba A Hazzah has completed her PhD in 2015 from Alexandria University, Faculty of Pharmacy. She is a Lecturer of Pharmaceutics at the Faculty of Pharmacy and Drug Manufacturing at Pharos University in Alexandria, Egypt.

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