

Effect of Alginate and Surfactant on Physical Properties of Oil Entrapped Alginate Bead Formulation of Curcumin

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Abstract : Oil entrapped floating alginate beads of curcumin were developed and characterized. Cremophor EL, Cremophor RH and Tween 80 were utilized to improve the solubility of the drug. The oil-loaded floating gel beads prepared by emulsion gelation method contained sodium alginate, mineral oil and surfactant. The drug content and % encapsulation declined as the ratio of surfactant was increased. The release of curcumin from 1% alginate beads was significantly more than for the 2% alginate beads. The drug released from the beads containing 25% of tween 80 was about 70% while a higher drug release was observed with the beads containing Cremophor EL or Cremohor RH (approximately 90%). The developed floating beads of curcumin powder with surfactant provided a superior drug release than those without surfactant. Floating beads based on oil entrapment containing the drug solubilized in surfactants is a new delivery system to enhance the dissolution of poorly soluble drugs.

Keywords : alginate, curcumin, floating drug delivery, oil entrapped bead

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